

**Exploring the relationship among stress, psychological wellbeing, and performance in
healthcare professionals and healthcare students**

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Abstract

Background: The prevalence of high stress in healthcare professionals (HCPs) and healthcare students has gained immense attention over the past decade; and more so since the onset of the COVID-19 pandemic. High levels of stress have been shown to have adverse consequences on the psychological wellbeing, and aspects related to performance, in both HCPs and healthcare students, and particularly in the nursing sector. While prior quantitative research has demonstrated a significant relationship among stress, psychological wellbeing and work performance in HCPs worldwide, there is a need to better understand the factors entailed in this dynamic relationship, and gain more in-depth insight from a qualitative perspective too, particularly in nurses working for the National Health Service (NHS). Likewise, such factors warrant further exploration in nursing students too as they comprise a highly stressed population as compared to students in other fields due to the prevalence of complex and challenging issues that start to arise early in their education and training. Besides exploring the various stressors and factors associated with stress and other aspects of psychological wellbeing and performance, it is also important to look into the various coping strategies and resources that are employed in nursing staff and students within the context of stressful situations, including their uptake and views of available wellbeing courses or other sources of support offered within the healthcare settings.

Aim: Following an Introduction (Chapter 1) to the key constructs and background pertinent to the current PhD project, the thesis presents a scoping review (Chapter 2) intended to look into psychological wellbeing intervention studies in NHS employees in terms of outcomes associated with improved psychological wellbeing and aspects related to work performance. The next chapter (Chapter 3) presents the core theoretical and practical aspects of the Methodology employed in the three studies which follow: Study 1 (Chapter 4) was intended to cast light into the relationship among stress, psychological wellbeing, aspects of work performance, and coping in nurses working for the NHS. Study 2 (Chapter 5) evaluated the effectiveness and acceptability of an eight-week mindfulness-based cognitive therapy programme (MBCT) delivered to NHS employees. Study 3 (Chapter 6) explored the relationship among perceived stress, coping strategies, emotional intelligence, and self-efficacy in UK nursing students. Finally, the findings across all studies and their implications

are integrated in the General Discussion (Chapter 7) wherein an account of the project strengths and limitations is offered along with future directions for research and practice.

Method: A mixed-method design was adopted across all three studies for data collection and analysis; quantitative data has been derived through validated self-report questionnaires via an online survey platform. Qualitative data has been collected through semi-structured interviews conducted via Microsoft Teams, including also a series of focus-groups in Study 3. Study 2 adopted a pre-/post- intervention, mixed-methods design, with quantitative assessments obtained at baseline (pre-intervention) and post-intervention and qualitative data obtained through interviews post intervention.

Results: In study 1, regression analysis demonstrated a significant positive relationship between stress and impaired work performance; a significant negative relationship between stress and work satisfaction; a significant negative relationship between stress and overall work activity impairment; including a partially mediating role of emotional intelligence between stress and impaired work performance. Thematic analysis revealed the presence of various stressors pre and during the global pandemic, with workload being a major factor; impact of stress on several aspects of psychological wellbeing (in terms of low mood or depression, feelings of frustration, difficulty switching off, anxiety, lifestyle changes, and negative work-life balance); impact of stress on work performance (in terms of inefficient delivery of tasks, poor decision making skills, concentration difficulties, limited attention span, increased errors, forgetting important information, and feelings of frustration towards other colleagues); seeking social support as a major coping mechanism adopted by majority of nurses (from peers, seniors, professionals, and loved ones); receiving support from the organisation (including line managers) although some staff reported lack of adequate support. Uptake of certain wellbeing interventions was reported, but some staff reported lack of awareness and other barriers associated with engagement such as long waiting lists, lack of time, or simply not feeling the need to participate). With regard to study 2, Wilcoxon Signed Rank test findings revealed at post-intervention stage significant reductions in depression and stress, and a significant increase in levels of mindfulness and overall quality of life. Emerged themes reflected beneficial perceived changes in stress and other aspects of psychological wellbeing or state and perceived acceptability of the MBCT programme, while offering recommendations for improvement in future implementation. In study 3, a weak negative correlation was revealed between problem-focused coping and stress; a strong positive

correlation between stress and avoidance coping; and no association was found between stress and emotion-focused coping. Emotional intelligence and self-efficacy had a positive significant correlation; a negative association was found between stress and emotional intelligence; and a strong negative correlation between stress and self-efficacy. Finally, a weak positive correlation was found between problem-focused coping and emotional intelligence; and between problem-focused coping and self-efficacy. Further, emotional intelligence did not moderate or mediate the relationship between self-efficacy and stress. Emerged themes highlighted various stressors experienced by nursing students, with balancing between academic and clinical placements being the major source of stress; the impact of stress on psychological wellbeing (in terms of low mood, feelings of demotivation, feelings of frustration with oneself and others around them, feeling overwhelmed difficulties switching off and experiencing low self-esteem); seeking social support as the most common coping strategy (from peers, teachers, university welfare services, professionals, and loved ones); and high perceived self-efficacy. Findings from focus-groups revealed a mixture of problem-focused and emotion-focused coping strategies when placed under stressful academic and placement situations.

Conclusions: The combined pattern of quantitative and qualitative findings across all three studies has demonstrated high stress levels among HCPs and students, along with associated negative effects on psychological wellbeing and work or academic performance. However, it also placed emphasis on the significance of personal resources (EI, coping strategies, and self-efficacy) as well as job resources for improving one's psychological wellbeing and aspects related to one's work or academic performance. While stress is an inevitable aspect in healthcare settings, the NHS organisations and educational institutions should consider providing enhanced support for improving personal and organisational resources in healthcare staff and students in order to promote or improve their psychological wellbeing and performance.

List of abbreviations used in text

ACT – Acceptance Commitment Therapy

CBT – Cognitive Behaviour Therapy

CCBT – Computerised Cognitive Behaviour Therapy

EAP – Employee Assistance Programmes

EI – Emotional Intelligence

HCPs – Healthcare Professionals

MBCT – Mindfulness Based Cognitive Therapy

MBCT-L - Mindfulness Based Cognitive Therapy for Life

MBCT-SH - Mindfulness Based Cognitive Therapy Self Help

MBIs – Mindfulness Based Interventions

MBSR – Mindfulness Based Stress Reduction

NHS – National Health Service

NICE - National Institute for Health and Care Excellence

NSS – Nursing Stress Scale

NWFQ – Nurse Work Functioning Questionnaire

JSS – Job Satisfaction Survey

WPAI:GH – Work Productivity and Activity Impairment: General Health

SSEIT – Schutte Self-Report Emotional Intelligence Test

PHQ-9 – Patient Health Questionnaire 9

PPHQ9 – Post Patient Health Questionnaire 9

PSS-14 – Perceived Stress Scale 14

PPSS – 14 – Post Perceived Stress Scale 14

FFMQ – Five Facet Mindfulness Questionnaire

PFFMQ – Post Five Facet Mindfulness Questionnaire

WHOQOL Bref – World Health Organisation Quality of Life

PWHOQOL – Post World Health Organisation Quality of Life

GSE – General Self-Efficacy Scale

SE – Self-Efficacy

SPSS – Statistical Package for Social Sciences

NUH – Nottingham University Hospitals

QMC – Queen’s Medical Centre

HSE – Health and Safety Executive

RCN – Royal College of Nursing

PTSD – Post Traumatic Stress Disorder

WEMWB - Warwick Edinburgh Mental Wellbeing Scale

GHQ - General Health Questionnaire

GDPR - General Data Protection Regulations

JD-R – Job Demands – Resources Model

INT – Interaction Variable

RCP - Royal College of Physicians

PFA – Psychological First Aid

PPE – Personal Protective Equipment

PSI – Psychological Interventions

QWL – Quality of Working Life

RCT – Randomized Control Trial

TA – Thematic Analysis

UK – United Kingdom

WHO – World Health Organisation

CHAPTER 1: INTRODUCTION

1.1 Overview

The impact of stress on the mental health of healthcare professionals and students

High levels of stress have historically constituted a global concern in the occupational sector given the documented impact of stress-related issues on the wellbeing and performance of employees in varied work environments (Godifay et al., 2018; Ahmad et al., 2015). Importantly, due to the highly demanding nature of work in healthcare settings, the prevalence of stress among Healthcare Professionals (HCPs) has been reported to be higher in comparison to employees working in other professions (Brooks, Gerada and Chalder, 2011). Employees working in the healthcare sector are those who are required to deliver care services to patients either directly as specialist doctors or nurses, or indirectly in an assistive, technical or other varied role (Joseph and Joseph 2016). However, these are the same employees who face particular challenges which can be detrimental to their own health, particularly mental health. Recent statistics indicate that the prevalence of stress ranges between 27-87.4% among HCPs generally (Joshi et al., 2022), and that HCPs experience 25.8% higher stress levels as compared to the general population globally (Couarraze et al., 2021). According to the 2018 United Kingdom (UK). Workplace Stress Report, 66% of those HCPs working in the healthcare sector reported suffering from significant levels of stress. The UK National Health Service (NHS) has employed over 1.5 million individuals in the country, providing free standard healthcare for all citizens (Ravalier et al., 2020). The work environment within the NHS, although it can be rewarding, has been reported to be physically, emotionally and psychologically demanding, which can be detrimental to the employees' health overall, and particularly their mental health (Royal College of Physicians, 2015). Reports from the Health and Safety Executive (HSE) have demonstrated the loss of over 15.4 million working days due to stress, which accounted for 57% of the total days lost due to sickness absence (Annual Statistics). After colds and flu, it is stress combined with other mental ill health issues leading to long-term sickness absence in the UK (CIPD, 2019). Bearing in mind the high prevalence of stress among HCPs worldwide, the stress in healthcare students has also been subject to investigation widely. It is well documented that healthcare education is highly complex, wherein students need to ensure academic excellence and clinical competencies, with the aim to become well-trained frontline HCPs (Fauzi et al.,

2021). However, the mental health of healthcare students is a growing public health concern; worldwide research has indicated high levels of stress among various healthcare students are associated with poor psychological wellbeing (AlFaris et al., 2016; Bati et al., 2013; Bresolin et al., 2020; Ersan et al., 2018; Macauleya et al., 2018; Quek et al., 2019), as compared to students enrolled in other fields (Dyrbye et al., 2006; Mao et al., 2019; Omigbodun et al., 2006). Also, within the UK, statistics have revealed that 85% of healthcare students have experienced mental fatigue, 29% of students have received a mental health diagnosis, and 82% have reported being disengaged from their studies (Farrell et al., 2019).

The outbreak of the novel coronavirus (COVID-19) reached a pandemic status in March 2020 as reported by the World Health Organisation (WHO). Due to this acute health crisis, the stressors experienced by HCPs were further exacerbated (Schneider et al., 2021). Owing to the pandemic, NHS frontline employees in particular have experienced vast emotional and practical challenges (BMJ, 2020) while NHS healthcare workers more generally have encountered significantly adverse conditions and associated high levels of stress (Greenberg, Docherty, Gnanapragasam, and Wessely, 2020; Lai et al., 2020). Similar to HCPs, healthcare students too have faced significant challenges due to the pandemic leading to disruption in education and training worldwide (Ahmad et al., 2020). Therefore, it is not surprising that such continued exposure to numerous challenges and stressors in unprecedented circumstances might have had detrimental effects on the psychological wellbeing of healthcare students and professionals.

The impact of stress on the psychological wellbeing and performance of healthcare professionals and students

Psychological wellbeing is crucial in promoting good mental health levels and positive work-related outcomes in occupational settings (Murray, Murray, and Donnelly, 2016). Prolonged poor psychological wellbeing can lead to mood and anxiety disorders (Philip and Cherian, 2020); it can also lead to burnout, sleep difficulties, problems with lifestyle, such as changes in appetite, and various other mental-health related illnesses (Khanal et al., 2020; Muller et al., 2020; Woo et al., 2020; Vizheh et al., 2020). HCPs have also commonly reported compassion fatigue and secondary traumatic stress, as a result of working with sick patients (Adams, 2006). Furthermore, higher suicide rates have been reported among HCPs as compared to employees in other professions (Horsfall 2014; Meltzer, 2008). Similarly, the

prolonged consequences of stress can negatively contribute to the psychological wellbeing of healthcare students, which can manifest in increased anxiety and depression levels (Tran, et al., 2022). Notably, the negative effects of stress on one's psychological wellbeing can impact one's work productivity too (McNally, 2019). Continued exposure to conditions which constitute stressors in work settings, coupled with poor psychological wellbeing related to stress, can lead to decreased work performance among HCPs; this in turn can have serious consequences on the quality of care delivered to patients (Gurung and Bastola, 2020). Similarly, high levels of stress can affect learning and motivation and overall academic performance in healthcare students (Abdulghani et al., 2011).

The importance of effective coping with stress

Given the adverse consequences that stress can have on the psychological wellbeing and aspects of performance in both HCPs and students, it is crucial to identify effective ways of coping which may allow them to adjust to highly stressful situations, particularly so during circumstances that are beyond one's personal control such as the COVID-19 pandemic (Tahara et al., 2021). Effective coping can act as a buffer between work stressors and psychological wellbeing (Franck et al., 2021). An important aspect of coping which relates to dealing with the emotional aspects of a circumstance rather than the situation itself per se is emotional intelligence (EI) which primarily involves the ability to process and manage emotions effectively (Salovey and Mayer, 1990). HCPs and healthcare students with high levels of EI have been found to feel better equipped to cope with stressors, which in turn can boost their psychological wellbeing and performance (Syazreena Azmi, Asiah Md. Shahid, and Alwi, 2016). An important aspect that can influence the way people cope with stress is one's self-efficacy, which reflects one's confidence in their capacity to draw upon appropriate resources to effectively produce the required cognitive or behavioural outputs (Sun and Lyu, 2022). EI and self-efficacy have been shown to be positively associated (Hamdy et al., 2014).

The relationship among stress, psychological wellbeing and performance aspects, and coping, in nurses and nursing students

It is widely recognised that nurses form the majority of HCPs worldwide (Mimura and Griffiths, 2003; Tyler and Cushway, 1992) while within the NHS it is known that nurses

comprise the largest employee group (Johnson, Croghan, and Crawford, 2003). However, this is one population which is exposed to high risk of stress and poor psychological wellbeing (Mimura and Griffiths, 2003; Tyler and Cushway, 1992). According to the NHS staff survey, 44% of nurses have reported feeling unwell due to stress related issues (RCN, 2020). Prior research has demonstrated that stress experienced by nurses, due to the complex nature of their profession, has a negative impact on their work satisfaction, thereby impacting their work performance (Flanagan and Flanagan 2002, Sveinsdottir et al. 2006, Zangaro and Soeken 2007; Nabirye et al., 2011). Although, a direct relationship among stress, psychological wellbeing and work performance is not always found (Teoh et al., 2020), it does impact the quality of care (Poghosyan et al., 2010), and more errors being made at work (Allan et al., 2014). Although prior literature has demonstrated a stress-psychological wellbeing- work performance relationship in nurses from a quantitative perspective, understanding this relationship from the qualitative perspective is still scarce. Hence, the current thesis will be the first – to the best of the author’s knowledge – to take into account the role of stress in the psychological wellbeing and aspects of work performance in nurses working for the NHS, by adopting a mixed-methods design of data collection and analysis (Study 1). It will also consider the moderating and/or mediating role of EI in the relationship between stress and work performance in nurses. Further, the study will shed light on the various coping mechanisms adopted by nurses for dealing with stress, including the uptake of wellbeing interventions for stress management and boosting psychological wellbeing.

Bearing this in mind, relevant training needs to be inculcated in nurses from the time of their education, which will help them build a repertoire of skills to handle stress in an effective manner (Chun and Park, 2016). Given the benefits of EI in the nursing profession, this concept has also gained immense attention in the field of nursing education ([Rankin, 2013](#)). Although prior literature has demonstrated a relationship among stress, coping, EI and self-efficacy by looking at one or a combination of some of the aforementioned constructs, studies examining the relationship among all aforementioned constructs together from a mixed-method perspective is still limited. In this light, the current thesis also aims to understand the relationship among stress, coping strategies, EI, and self-efficacy in nursing students, along with examining the moderating and/or mediating role of EI in the relationship between self-efficacy and stress using mixed-methods of data collection and analysis– a pattern which has not been looked at previously (Study 3).

Further, adopting effective coping behaviours to ensure the prevention or management of stress on a daily basis, calls for a need to develop and implement effective psychological wellbeing interventions for HCPs and students. Recently, a growing body of literature has demonstrated the effectiveness of mindfulness-based interventions (MBIs); in particular, mindfulness-based cognitive therapy (MBCT) has gained immense popularity as a psychosocial wellbeing intervention for managing stress-related issues among HCPs (Lomas, Medina, Ivtzan, Rupprecht and Eiroa-Orosa, 2018). Also, several studies on MBCT have highlighted its significance among NHS healthcare employees, which will be discussed in subsequent sections. However, despite the plethora of studies, there is still limited literature in determining the effectiveness of MBCT with regard to aspects of psychological wellbeing, along with its potential benefits on the work performance in NHS employees. Therefore, the current thesis will aim to address this gap by evaluating the effectiveness of an eight-week MBCT programme offered to NHS employees, in terms of improved psychological wellbeing and work performance from a mixed-methods perspective.

The subsequent sections of the introduction chapter will provide an overview of background theories and evidence concerning the role of stress on psychological wellbeing. It will also explore the relationship among stress and aspects related to performance in HCPs including nurses, and in healthcare students, particularly nursing students. It will also provide an overview of psychological wellbeing interventions that are commonly offered to HCPs and healthcare students in work settings.

1.2 The role of stress in psychological wellbeing and aspects related to performance

1.2.1 Stress and psychological wellbeing

Wellbeing at work is defined as the employee's experience of health and safety in the workplace, support of the work community to the employee, and how rewarding and meaningful the employees perceive their work (Anttonen and Räsänen 2009, 17–18). Wellbeing can be classified into physical, emotional, psychological, and social wellbeing. Emotional wellbeing refers to feelings of happiness and life satisfaction; social wellbeing involves the feeling of being valued by the society one lives in (Weiss, Westerhof and Bohlmeijer, 2016). Psychological wellbeing refers to wellbeing as a process of self-realization, which consists of six dimensions, namely, personal growth, autonomy,

environmental mastery, purpose in life, positive relationships with other people, and self-acceptance (Weiss, Westerhof and Bohlmeijer, 2016). According to Huppert (2009, p. 1), “psychological wellbeing is about lives going well”. People with high psychological wellbeing report feeling happier, well-supported, capable, and display higher levels of satisfaction with life (Hupert, 2009). High levels of perceived stress is associated with poor psychological wellbeing (Terry, Nielsen and Perchard, 1993). A scientific definition of stress has been captured by the work of Hans Selye (1956, p. 4), who defined stress as “a consequence of the interaction between the stimulus and response.” One of the basic concepts of stress is that it relates to an individual's perceptions of the demands that are made to them and their perception of how capable they are to meet those demands. When there is a mismatch, it means that the individual's stress threshold is increased, thereby triggering a stress response ([Clancy and McVicar 2002](#)). The term stress has been analysed by using several methodologies that are based on different philosophical perspectives (Benner and Wrubel 1989; Boey 1998; Shaw 1999). Because it is a multifaceted concept, there is no universal definition of stress (Clegg, 2001). The terms ‘eustress’ and ‘distress’ were subsequently introduced to differentiate between adaptive and non-adaptive reactions to stressors (Selye, 1974); eustress refers to the positive, healthy, and constructive results of a stressful event, and distress is associated with negative feelings as a result of severe stress. The term ‘occupational stress’ refers to the maladaptive emotional and physical response which takes place when the job requirements do not match the capabilities and needs of the employee (Bianchi 2004, Alves 2005, Lindholm 2006, Nakasis and Ouzouni 2008; Jamal, 2005). Occupational stress may lead to psychological, physical, and behavioural strain; however, psychological strain is the main type of strain caused due to stressors which impacts psychological wellbeing (Suleman et al., 2018). Experiencing high levels of stress is also associated with other mental health related issues such as depression, exhaustion, mood changes, fatigue, low self-respect, withdrawal, and burnout (Juhász, 2002; Kahn and Cooper, 1993). Further, poor psychological wellbeing as a consequence of high stress, is associated with apprehension, tension, sleeping difficulties, dissatisfaction, and restlessness (Netterstorm and Kundu, 1998).

1.2.2 Stress, psychological wellbeing, and performance

Stress does not only impact an individual’s personal life but also their working life (McNally, 2019). It impacts the worker’s productivity by affecting their mental, physical, and

psychological wellbeing, which consequently impacts their ability to perform well at work (McNally, 2019). It has been noted that psychological wellbeing is essential in promoting mental health among professionals (Murray, Murray, and Donnelly, 2016), which results in good patient outcomes through improved employee work performance (Andrews and Wan, 2009; Begat, Ellefsen, and Severinsson, 2005; Coetzee, Klopper, Ellis, and Aiken, 2013). Work performance, therefore, is defined as a process of fulfilling the assigned roles and responsibilities effectively (Motowidlo et al. 1986, Westman and Eden 1996, Oi-ling 2003; Wellker-Hood 2006). Theorists have examined the relationship between stress and performance and argue for the existence of four main approaches (Gümüştekin and Öztemiz, 2005); namely, negative relationship, positive relationship, inverse U-shaped relationship, and no relationship. The negative relationship refers to an inverse relationship between the two constructs, wherein performance decreases as stress levels increase (Çargan, 2018). The positive relationship postulates that as stress levels increase, the performance also enhances (Yılmaz, 2006). The inverse U-shaped relationship acknowledges both positive and negative outcomes; while a certain level of stress is good for performance, it decreases when stress reaches the critical level (Akgündüz, 2006). Finally, some argue that the presence or absence of stress will have no effect on performance (Türkmen, 2015). Since the work of employees in an organisation is a reflection of their psychological structures, increased stress in employees can have negative effects on the organisation as a whole. Therefore, issues related to poor psychological wellbeing as a result of stress, are directly reflected in one's work performance; including quality of work, work satisfaction, and absenteeism or presenteeism (Altindag, 2020).

1.2.3 Theories to understand the relationship between stress, overall wellbeing, and performance

Various theories and approaches have been demonstrated in prior research to understand the relationship between stress, overall wellbeing and work performance.

Job Demands - Resources Theory

The Job Demands - Resources (JD-R) is a popular theory adapted from Bakker (2007) and Demerouti (2017). This theory explains how employee wellbeing and work performance is affected by the organisational environment. A central proposition of this theory is that job characteristics of employees are classified into job demands and job resources; job demands

include aspects of work which require sustained efforts and are therefore, associated with psychological costs, for example, high workload, bullying, conflict with seniors, etc. (Demerouti et al., 2001; Bakker and Demerouti, 2017). On the other hand, job resources refers to aspects which help attain work-related goals, reduced work demands, and stimulate personal growth, e.g., social support, promotion, etc (Demerouti et al., 2001). Therefore, the proposition of the JD-R theory is that high job demands can lead to burnout. Job resources, on the other hand, lead to higher motivation which results in increased work engagement. Work engagement refers to a mental state where people feel energetic and enthusiastic about their work (Bakker and Demerouti, 2017). In other words, the JD-R theory states that job strain - which results in burnout - leads to lower work performance; and motivation - which results in higher work engagement - leads to higher work performance (Tummers and Bakker, 2021).

Demands-Control Model of Stress

Another popular approach with regard to the relationship between stress and performance is the demands-control model of stress, where the premise of this model states that the combination of job demands (such as unpleasant environment, long working hours, etc.) and decision latitude (control) impact the physical, behavioural and psychological outcomes (Theorell and Karasek, 1996). Researchers have supported this model; they found that job demands are negatively related to work satisfaction and positively related to emotional exhaustion. In addition, decision control is negatively related to emotional exhaustion and positively related to work satisfaction (Fila et al., 2017). Furthermore, researchers have demonstrated that the relationship between work performance and job demands was mediated by psychological strain; higher job demands increase the psychological strain which consequently leads to decreased work performance (Lang et al., 2007).

Challenge-Hindrance Model

According to this model, employees can view stressors as either challenges or hindrances which impede performance. If a stressor is perceived as challenging, individuals experience positive emotions and increased performance. On the other hand, if the stressor is appraised as a hindrance, individuals experience decreased performance and negative emotions (LePine et al., 2005). Researchers have supported this model and demonstrated that challenge stressors are positively related to work satisfaction and commitment, and negatively related to withdrawal behaviours such as turnover. Hindrance stressors, on the other hand, are

positively related to turnover and negatively related to work satisfaction (Podsakoff, LePine, and LePine, 2007).

Integrated Stress and Performance Framework

This model is two-fold, wherein first the personal characteristics (e.g. personality) may affect how one responds to work demands (such as workload) or whether they perceive stressors as a challenge or hindrance. Second, stress has an impact on one's performance and wellbeing, which can also have an impact on the environment and the employee's personality (Griffin and Clarke, 2011). For instance, if a stressor is perceived as hindrance, it would have a negative impact on work performance. This poor performance would then result in additional pressures from the seniors to improve performance, which would cause further stress for the employee. Consequently, this could then lead to negative wellbeing, stress and performance spirals (Griffin and Clarke, 2011).

The Happy-Productive Worker Hypothesis

Various theoretical viewpoints exist which have examined the work performance as a consequence of wellbeing. One such important theory demonstrates that employees who are happy in general tend to be more productive as compared to other workers (Lucas and Diener, 2002). Several researchers have concluded that although the relationship between wellbeing and work performance might not be as strong, but there is definitely some association between the two (Vroom, 1964; Iaffaldano and Muchinsky, 1985; Judge et al., 2001). However, there have been ongoing debates regarding the relationship between wellbeing and work performance. Where one researcher contends that the association between the two is spurious and depends on personality factors and self-esteem (Bowling, 2007); another researcher argues that even though there could be a relationship between self-rated performance and wellbeing, but there is less clarity with regard to the association between objective performance and wellbeing (Taris, 2006).

Effect-Recovery Theory

This theory focusses on the effects of effort on fatigue (which is an indicator of wellbeing) and work performance (Meijman and Mulder, 1998). This approach emphasises that recovery from effort affects health and work performance; expending effort during work can lead to fatigue and stress. However, these effects then disappear once complete recovery has been attained. Therefore, employees will start their next working day fully recuperated from the

effort spent on the previous day. In an alternative scenario, if full recovery has not been achieved, employees will start their next working day feeling less productive (Hockey, 1997). This additional effort may come in the way of the recovery process resulting in increased health issues, e.g. burnout (Geurts, Beckers and Tucker, 2014). In other words, this theory explains that lower levels of wellbeing can lead to lower levels of work performance; employees who experience fatigue may perform sub optimally.

Self-Determination Theory

According to the self-determination theory by Deci and Ryan (2000), individuals possess three innate needs, namely, the need for relatedness; the need for competence; and the need for autonomy. Thus, this theory states that the satisfactions of one's basic needs defines higher levels of wellbeing, which leads to higher work performance as satisfaction impacts employee motivation. Higher performance will be achieved when employees perceive their work as satisfying and interesting; and are also motivated in their work (Baard, Deci and Ryan, 2004).

Broaden-and-Build Theory

This theory proposes that that the relation between work satisfaction and work performance is moderated by positive wellbeing; this relation would be stronger for employees who report higher levels of psychological wellbeing (Wright, Cropanzano and Bonett, 2007). It can be argued that the state of mind help employees feel more proactive and less prone to experiencing stress. This, in turn, does not only affect their work performance but also broadens the mindset which strengthen the positive effects on wellbeing on performance (Wright et al., 2007).

Given that there are wide array of interesting concepts regarding the relationship between stress, psychological wellbeing and work performance, at present, there is no single overarching theory or framework which explains this relationship. It could be argued that all the aforementioned theories/models capture aspects of this relationship which indicate consensus on basic underlying assumptions. While the most relevant theory or framework depends on the particular situation in which stress, wellbeing and work performance are studied (Taris and Schaufeli, 2015), the common ground of the proposed theories seems to suggest that optimal performance can be achieved after addressing the psychological wellbeing issues caused due to high stress levels. Bearing this in mind, and given the overall

framework of the current thesis, the author leans more towards the ‘*job demands – resources*’ theory. The past decade has seen a steady increase in the number of studies with the JD-R model (Bakker and Demerouti, 2007; Demerouti and Bakker, 2011; Demerouti et al., 2001). This model has been utilised to predict several aspects employee wellbeing and aspects related to work performance such as work satisfaction and organisational commitment (Bakker, Van Veldhoven, and Xanthopoulou, 2010); job burnout (e.g., Bakker et al., 2005, 2008; Demerouti et al., 2001); work engagement (Bakker, Hakanen, Demerouti, and Xanthopoulou, 2007; Hakanen, Bakker, and Schaufeli, 2006); and sickness absence (e.g., Bakker, Demerouti, De Boer, and Schaufeli, 2003a; Clausen, Nielsen, Gomes Carneiro, and Borg, 2012; Schaufeli, Bakker, and Van Rhenen, 2009). By using this theory, researchers can understand, explain, and predict employee psychological wellbeing and work performance.

One reason for its immense popularity is the flexible nature this theory offers to all employees, working in varied sectors/environments, including healthcare settings. After all, all working environments can be categorised into job demands - which refer to the physical, psychological, social or organisational aspects of work which require sustained physical and psychological effort, and are consequently associated with psychological or physiological costs (Demerouti et al., 2001); and job resources - which refer to the physical, psychological, social, and organisational aspects of work which are significant in achieving targets, they reduce job demands associated with physical or psychological costs, while stimulating learning, development and personal growth (Bakker, 2011; Bakker and Demerouti, 2007). The interaction between job demands and resources can have a combined effect of psychological wellbeing, which indirectly influences aspects related to work performance. This explanation is two-fold - first, job resources buffer the impact of job demands which cause stress thereby allowing individuals to cope better with daily challenges at work; second, higher job demands impact engagement and motivation. Therefore, when a worker is confronted with challenges, these resources help foster dedication and performance towards the task at hand (Bakker and Demerouti, 2014). An important aspect of the JD-R theory is the inclusion of personal resources, which refer to the positive self-evaluations linked to high resilience and higher sense of ability to control the negative consequences of job demands (Hobfoll, Johnson, Ennis and Jackson, 2003). Such positive self-evaluations can help predict motivation, performance, work and life satisfaction, and other desirable outcomes; reason being, that higher personal resources can enhance an individual’s self-regard, including increased goal self-concordance (Judge, Bono, Erez, and Locke, 2005). Therefore,

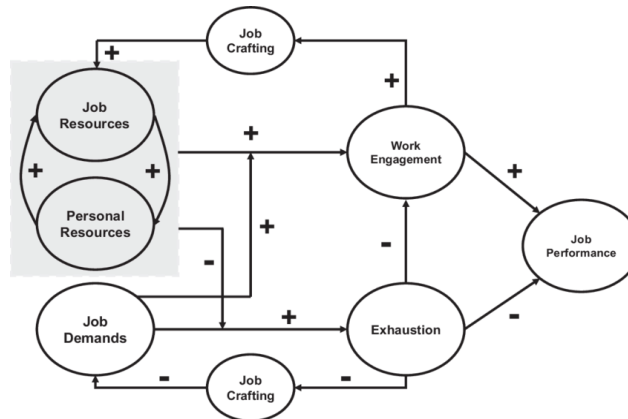
individuals with goal self-concordance are more motivated to pursue goals, thereby resulting in increased performance and satisfaction (Luthans and Youssef, 2007).

Further, the JD-R model postulates that management can have a strong influence on job demands and resources, which may indirectly impact psychological wellbeing and performance (Nielsen, Randall, Yarker, and Brenner, 2008). It implies that organisations should offer employees with sufficient job demands and job resources, including social support and feedback. However, it is equally important that employees mobilise their own job and personal resources to show proactive behaviour; this is because managers may not always be available for feedback, or organisations may be undergoing setbacks. In addition, this model acknowledges that organisations must invest in effective interventions for helping employees cope with daily challenges at work. While organisation-driven interventions aim at increasing employees' personal resources, individual-driven interventions may help capitalising on one's strengths (Bakker and Demerouti, 2014). The four possible JD-R interventions include job redesign - which is an organisational level intervention encompassing the top-down process through which organisations or supervisors change aspects of tasks, or the conditions of employees; job crafting - which is an individual-level intervention where employees actively change the design of their tasks through either choosing tasks, negotiating, or assigning meaning to their jobs (Parker and Ohly, 2008); training - which involves interventions for helping employees acquire new skills, knowledge, and problem-solving strategies for fostering personal resources such as resilience, optimism, and self-efficacy; finally, strengths-based interventions - which is also an individual based intervention aimed to enhance personal resources (Peterson and Seligman, 2004).

Within the healthcare and healthcare educational settings, job demands can vary, but are not limited to, high professional or academic workload, bullying, complex emotional tasks, demanding nature of work and studies, unfavourable work or educational environment, and working irregular shifts or long study hours. These demands are associated with higher levels of perceived stress, thereby influencing the psychological wellbeing and aspects related to performance as captured by the current JD-R theory. However, job resources, which include but again are not limited to, conflict management, coping mechanisms including social support, performance feedback, and other personal resources such as EI and self-efficacy (Meirun et al., 2020) can help buffer the negative effects of demands on one's psychological wellbeing, thereby improving performance. Also, training HCPs and students

with effective JD-R interventions can enable the growth of personal resources, and mitigate the negative effects of demands. Therefore, bearing in mind the overview of the current thesis, this research project has adopted the JD-R model as a theoretical framework given its dynamic and flexible nature for understanding and explaining concepts which are the core constructs of this PhD.

Figure 1: The Job Demands – Resources Model by Bakker and Demerouti (2011)



1.3 Exploring the relationship among stress, psychological wellbeing and work performance in healthcare professionals

As mentioned in the background, HCPs are more prone to stress and burnout as compared to employees in other professions; HCPs are exposed to the life and death experiences on a daily basis and are accountable for human lives (Gurung and Bastola, 2020). Some common workplace stressors experienced by HCPs include heavy workload, long working hours, shift work, death experiences, organisational/infrastructural issues, etc. (Ribeiro, Marziale, Martins, Galdino and Ribeiro, 2018). Being exposed to such stressors on a daily basis, can lead to impaired work performance and decreased work satisfaction among HCPs, with serious consequences on patients’ health (Gurung and Bastola, 2020). These stressed HCPs also experience poor work-life balance, which in turn affects their work performance and poor quality of services provided to patients (Hawksley, 2007; to Jahedi and Reyshari, 2015). In addition, work stress is known to be a serious threat to the quality of working life (QWL) among HCPs, which may lead to increased absenteeism, turnover, and reduced work performance (Mosadeghrad et al., 2011). Previous literature has demonstrated the negative effects of stress on the psychological wellbeing and aspects of work performance among HCPs, as mentioned below.

A study by the International Labour Office (ILO, 2012) argued that stress reduces the performance levels among HCPs. Another study aimed to investigate the impact of stress on work performance among HCPs in Nepal. Results revealed that pay, reward, work-life balance, supervisor support, significantly impacted the quality of service provided by employees; workload had a negative impact on their performance (Gurung and Bastola, 2020). Deng et al. (2019) investigated how hindrance stress and challenge stress impacts work performance among HCPs, and understanding the mediating effect of public service motivation. Results showed that work performance increased by limiting hindrance stress; public service motivation indirectly mediated the association between stress and work performance. In order to understand the relationship between stress, work satisfaction, work performance and turnover intentions among HCPs, a study demonstrated that stress had a positive impact on turnover intentions and work performance; stress had a negative impact on work satisfaction (Chao et al., 2013). Another study revealed that stress and QWL have an inverse relationship; stress was positively related to the intention to quit among HCPs and QWL was negatively associated with turnover intentions (Mosadeghrad et al., 2011).

In the recent years, there has been a growing concern regarding the relationship between work stress and work dissatisfaction, particularly among HCPs, and how it negatively impacts the employees' wellbeing (Carder et al., 2009; Kalliath and Morris, 2002; Piko, 2006; Fiabane et al., 2012). Stress is also known to be a strong predictor of presenteeism among HCPs; previous studies have revealed that the stress of treating dying patients leads to increased presenteeism (Pit and Hansen, 2016; Oxtoby, 2016; Gustafsson et al., 2013). This can cause burnout among HCPs along with medical errors, which consequently endangers the safety of patients (Letvak et al., 2012). A study examined the relationship between stress, presenteeism and affective commitment among HCPs. Results showed that challenge stress was positively correlated with affective commitment and negatively correlated with presenteeism; hindrance stress was negatively correlated with affective commitment and positively correlated with presenteeism (Yang et al., 2017). Another study aimed to investigate the relationship between stress, work satisfaction and organisational factors among HCPs. Results revealed that work dissatisfaction is strongly associated with stress and various organisational risk factors. HCPs with lower satisfaction scored high in terms of stress (Fiabane et al., 2012).

Working irregular shifts is an integral feature of the healthcare sector as patients require constant monitoring; a large number of HCPs have to work irregular hours even due to personnel shortages (Himali, 1995). Work stress among HCPs, experienced due to shift work, contributes to reduced work performance and work satisfaction, increased absenteeism, and reduced quality of care towards patients (AbuAlRub, 2004; Edwards and Burnard, 2003). Undertaking shifts at night among HCPs is also associated with poor performance and an increased rate of accidents and injuries (Berger and Hobbs, 2006; Suzuki et al., 2005). A study demonstrated night shift workers reported higher work-related impact as compared to day workers (Burch et al., 2009). Also, permanent night workers reported increased absenteeism and decreased work satisfaction compared to the day workers. A similar study reported that shift work was associated with reduced work performance and work satisfaction among HCPs; high stress and shift work at night was also strongly associated with poor sleep quality (Conway et al., 2008).

As previously discussed in the background, the sudden onset of COVID-19 took a major toll on the healthcare sector with a severe impact on healthcare performance (Sun et al., 2022). HCPs have experienced significant psychological repercussions due to the virus which has had detrimental effects on their work performance (Zheng, 2020). The enhanced sense of helplessness has further deteriorated the performance level among HCPs (Zheng, 2020). Prior literature has demonstrated that despite the growing evidence of mental health problems, HCPs are not seeking the appropriate healthcare which is necessary to ensure their work performance and psychological wellbeing (Xiang et al., 2020; Sun et al., 2022). A study aimed to examine the psychological impact of COVID-19 on the work performance of HCPs. Results revealed that stress, anxiety and depression had a negative impact on work performance during the pandemic; job burnout and mental health mediated the relationship between anxiety, stress, depression and work performance (Sun et al., 2022). Another study demonstrated that the fear of COVID-19, psychological concerns and financial concerns significantly affected the work performance among HCPs (Sarfranz et al., 2022). Despite the challenges faced by HCPs during the crisis of the global pandemic, research has shown that employees feel obligated to maintain their performance by minimising the effect of professional anxiety (Sarfranz et al., 2022). Findings from a study showed that perceptions of a threat from the virus along with inadequate protective measures have affected the performance level among HCPs; results revealed that the mediating role of depression indicated the fear of the virus and lack of protective measures have led to poor performance.

However, the obligation factor to fulfil all duties reduced the effect of depression on work performance (Sarfranz et al., 2022). The effects of stigma, associated with the pandemic, on work performance is of extreme importance (Shanalfet et al., 2015; Pellerone et al., 2020). Stigma has been identified as a pressing issue and a health crisis where crucial action is required (O' Donnell, 2016). A study showed that stigma has a significant impact on fatigue and burnout, and it negatively affects work satisfaction; findings revealed that stigma can have a negative influence on work outcomes, including work performance among healthcare employees (Ramaci et al., 2020).

Given such hard circumstances, it is no surprise that issues related to mental health and psychological wellbeing among HCPs has received a lot of attention, not only since the pandemic but from way earlier (Vizeh et al., 2020; Chew et al., 2020; Li et al., 2020). Recovery from the global pandemic had hardly begun, as the world faced a “second wave”, and a “third wave”; with several more waves to come given the emergence of new variants (Vizeh et al., 2020; Chew et al., 2020; Li et al., 2020). For the healthcare workers, this means a continuation of challenging working conditions. With regard to frontline HCPs, nurses is one major population that faced increased psychological difficulties as a consequence of COVID-19 (Sampaio et al., 2021). It is widely accepted that nurses form the majority of employees in the global healthcare systems, and are also a population which is exposed to high risk of stress (Mimura and Griffiths, 2003; Tyler and Cushway, 1992). The nursing profession is both emotionally and physically demanding (Olofsson et al., 2003) as their nature of work requires daily care for patients and their families, experiencing death, offering support in times of uncertainty, and sharing in times of joy (Sherman, 2004). Therefore, there is growing concern regarding the psychological wellbeing of nurses, with an increasing focus on stress (Tahghighi et al, 2017). This is because the nursing profession involves a high level of skill, team working, 24-hour care, and input which is often known as ‘emotional labour’ (Phillips, 1996), which consequently impacts their work productivity.

From the above literature, it can be concluded that stress is a complicated phenomenon, and that one can never be too decisive regarding the different sources of stress as each individual perceives it differently (Koinis et al., 2015). However, each individual differs significantly in terms of how sensitive they may be to different stressors, or how they perceive them and react to them (Cox et al., 2000). In such circumstances, cognitive evaluations play a crucial

role in determining the stressor and an individual's reaction to the stressful event (Asimakopoulou, 2004). Also, an individual's perceptions regarding the demands of a given stressful event, and whether they are able to cope with those demands, play a vital role (Lazarus and Folkman, 1984; Bandura, 1997). Here, the term coping refers to the cognitive and behavioural efforts made to master, tolerate, and reduce external/internal demands and conflict (Folkman and Lazarus, 1980). How each individual perceives or appraises a problem will, in turn, determine what coping strategy they use (Healy and McKay, 2000). The next section will take into account the importance of coping; how it is related to stress, wellbeing and work performance among HCPs.

1.3.1 The role of coping in the relationship between stress and work performance

Recently, the role of personal resources has been added to the JD-R model as psychological characteristics of oneself which are associated with resilience, complementing the model elements of job demands and resources. Such personal resources, e.g. one's coping strategies, may help explain individual differences in wellbeing despite being exposed to the same stressors (Schaufeli and Bakker, 2004). With the emergence of the global pandemic, there has been a sudden increase in job demands leading to a severe negative impact on employee wellbeing. However, not everyone will be affected the same way; this is where personal resources, such as coping strategies, play a crucial role (Lai et al., 2020). One of the most extensively researched and widely accepted theoretical frameworks by researchers is the transactional model of stress and coping (Lazarus and Folkman, 1984). This model postulates that a stressful event may trigger the primary appraisal process where one assesses the degree of threat in relation to their wellbeing. When the event is perceived as a challenge, the secondary appraisal process then provides an assessment of one's coping mechanisms in order to deal with the challenging situation. These coping responses are initiated after the cognitive appraisals; the psychological outcomes of the stressful event depend upon the effectiveness of one's coping processes. However, it is not always true that the influence between primary and secondary appraisal does not indicate one being more significant than the other, or that one preceded the other (Lazarus and Folkman, 1984); the key premise of this model states that primary, secondary appraisal, and the coping mechanisms mediate the relationship between stressors and one's stress outcomes (Sawang and Lei, 2010). Coping

styles can be classified into three broad categories (Endler and Parker, 1999); problem-focussed coping, which involves strategies aimed to modify the stressful situation; emotion-focussed coping, which is person-oriented and involves regulating emotions cued by the stressor and avoidant coping, which generally involves distancing oneself from the stressful situation (Lavoie, 2013). Coping strategies can also be internally or externally focused; internal coping focuses on managing or changing the issues which cause stress, such as asking for information or solving a problem. External coping, on the other hand, concentrates on lessening emotional distress, such as seeking the company of others, denying the actual situation, or thinking optimistically ([Chang et al. 2006](#)). Coping strategies are an integral factor for adapting to stressful situations; the manner in which one copes with life challenges and obstacles has a strong and direct influence on their psychological wellbeing (Lin et al., 2010).

1.3.1.1 Relationship between stress and coping in healthcare professionals

Prior studies have considered problem solving as a positive and functional coping style, whereas avoidance strategies are viewed as negative coping styles which are associated with increased emotional distress among HCPs (Foà, Tonarelli, Caricati, and Ruggeri, 2015; Flesia, Fietta, Colicino, Segatto, and Monaro, 2020). A study reported that the most common coping mechanism adopted by HCPs include acceptance of the critical situation and use of positive outlook while working (Wong et al., 2005). Similarly, another study noted that positive attitude in the workplace can help in reducing employee stress (Khalid et al., 2016). Maintaining situational control, thinking about solutions, and keeping information are some other coping strategies reported by HCPs (Xu et al., 2019). Another study evaluated the efficacy of coping mechanisms adopted by HCPs to reduce stress and burnout; results reported physical and emotional support, physical activity, self-care, and emotional distancing from work were some of the common coping strategies adopted (Maresca et al., 2022). Coping mechanisms have shown to be mediators in the relationship between psychological wellbeing, burnout, job strain, work dissatisfaction and work performance (Lazarus and Folkman, 1984). Evidence has also shown that coping strategies act as mediators in the relationship between job stress and work performance. For example, a study aimed to understand the role of coping mechanisms as a mediator between job strain and work performance among nurses. Results showed a negative impact of job strain on work performance and a partial mediation effect of coping strategies on job strain. Also, nurses

who adopted more problem-focussed coping strategies reported higher levels of work performance, which means that problem-focussed coping mediated the negative effects of job strain on work performance (Wazqar et al., 2017). Another study aimed to understand the moderating effects of coping strategies in the relationship between work stress and performance among HCPs. Results reported that positive coping mechanisms reduced the negative effects of stress on work performance, whereas negative coping mechanisms increase the negative effects (Li et al., 2017).

Given the onset of COVID-19 and the rapid spread of the virus, the healthcare systems became extremely overwhelmed throughout the world. In order to examine the relationship between coping strategies, wellbeing, and quality of working life among HCPs, a study reported that positive coping strategies, such as active coping and seeking help were associated with better quality of working life and improved wellbeing as compared to negative coping strategies, e.g. avoidance (McFadden et al., 2021). HCPs tend to use more problem-focussed coping mechanisms, for example, contributing to improving a situation, during COVID-19 (Paterlini et al., 2022). Another study aimed to understand the psychological impact of COVID-19 on HCPs in terms of perceived stress and coping mechanisms. Results demonstrated that employees with higher stress levels made use of social support; some avoidance behaviours were also noted among those who perceived high stress symptoms (Yubonpunt et al., 2022). Several other forms of coping such as feeling part of a team, or sharing jokes and humour with other colleagues, may lead to reduction of stress levels among HCPs (Rose et al., 2021). Taking regular and short breaks, thereby allowing HCPs to get some fresh air has reported to be useful for coping with stressful situations during work. Also, using apps for relaxation and breathing exercises have shown effectiveness in terms of dealing with stress (Prior et al., 2021).

1.3.1.2 Significance of emotional intelligence in healthcare professionals

Interestingly, one of the strongest determining factors associated with effective coping and improved work performance is emotional intelligence. EI, a term proposed by Salovey and Mayer (1990), refers to the ability to monitor one's own and others' emotions, discriminate among them, and use that information to guide their thinking and actions. The ability to process one's emotions efficiently and accurately can have an impact on the individual's life

outcomes, in terms of productivity at work and overall wellbeing (Salovey and Grewal, 2005). People who are high in EI are regarded as better equipped to cope with stress (MacCann et al., 2011). Emotions are an integral part of one's reaction to stress and burnout (Humpel and Caputi 2001) and EI is a helpful personal resource that helps in coping with emotional situations (Van Dusseldorp et al. 2010). Within a workplace stress framework, many scholars believe that stress, EI, and work performance are different constructs, but are strongly interrelated. For instance, the ability of an employee to cope and manage their own and others' emotions is likely to increase the employee's ability to deal with occupational stress, which in turn, would lead to increased work performance within the organisation (Syazreena Azmi, Asiah Md. Shahid, and Alwi, 2016). Although it is an essential concept, EI has faced some criticism in the literature. Research studies investigating the relationship between EI and work performance suggest that the benefits of using EI in the workplace might be premature and/or misplaced (Quoidbach and Hansenne, 2009). Even though there have been huge amounts of claims regarding the positive impact of EI on performance, however, the results seem to be limited and contradictory (Zeidner et al., 2004). Debates on the concept of EI are quite rampant in the literature and are often regarded as "old wine in new bottles" (Matthews et al., 2002, p. 515). There are three main points of criticism which limit the systematic knowledge development related to EI. Firstly, the definition and measurement of EI are poor. Secondly, it is regarded as an old idea for constructs that are identified previously and measures, and lastly, its significance is exaggerated and not received much support from research (Matthews et al., 2006; Murphy and Sideman, 2006a; Murphy, 2006). Some assertions made about EI include that it is regarded as more important than IQ (Goleman, 1998); it is not related to any class, race, sex or socioeconomic status (Goleman, 20115); and people with EI can adapt better to stressful situations (Bar-On, 2005). These assertions are criticized based on being too exaggerated, not proven enough, or require more convincing (Fineman, 2000; Jordan et al., 2006; Spector and Johnson, 2006).

As mentioned previously, working in the healthcare setting can be extremely draining and strenuous for employees; working in such challenging environments require HCPs to prioritise their mental and physical health, as it leads to increased work performance (Imran et al., 2014). However, this can be mediated through EI which allows the use of emotions in the medical field (McNaughton, 2013). HCPs with higher EI can perform better in such jobs, where substantial amount of emotional labour is required (Pekaar et al., 2017). EI can lead to positive outcomes in terms of patient care, professionalism, and satisfaction from both

patients and healthcare providers, as well as increased happiness and good health of the HCPs (McNaughton, 2013). The changing expectations and demands from the community to receive appropriate healthcare require constant adaptation from the medical education and healthcare systems. Displaying compassion, empathy, good communication skills, sound decision-making ability, and healthy relationships with patients and colleagues are some basic criteria that need to be met by all HCPs (Zaman et al., 2021).

Previous research has shown that the potential benefits of having high EI have been rarely distinguished, and it is crucial to examine if EI is either related to individual mental health or work performance (Lindebaum, 2009). It can be maintained that EI can moderate the relationship between mental health and work performance. According to the theory of Conservation of Resources (COR), individuals take advantage of the resources they possess to manage stressful situations. These resources, in turn, facilitate the development of other resources, such as the ability to use expressive knowledge so they can be mentally healthy and also perform well at work. So it can be said that emotionally intelligent people are more tolerant towards stressful experiences. They can process emotional information and manage their negative emotions successfully (Salovey, Bedell, Detweiler, and Mayer, 1999). Therefore, EI can play the role of the moderator in the above relationship as it helps the individuals to get their right balance concerning sustaining their mental health and performing well at work (Lindebaum, 2013). Research has shown that one's ability to understand and reason with emotions has been linked to lower levels of stress. This, in turn, aids a better performance level. This can be explained because people with high EI may perceive the environmental stressors as more of a challenge than a source of stress, which leads to less aversive outcomes (Salovey, Mayer, and Caruso, 2002). This is consistent with past research studies which suggest that people with high EI tend to use those strategies that have been proven as effective in the past and refraining from those that were not as effective. For example, avoiding their problems. This fosters the motivation level and consequently their performance level on discrete tasks (Ciarrochi, Chan, and Caputi, 2000). The performance of an individual depends upon factors such as support, advice, and resources that are provided by others at work (Kelley and Caplan, 1993). Individuals in social situations need to react appropriately, and for that, they must have the ability to understand the emotions of others, their attitudes, and behavioral intentions (Caruso and Salovey, 2004). This can assist in building the quality of social interactions, as these interactions play a

critical role in determining whether one can draw a supportive network. EI can have an impact on this process in several ways. For example, using and understanding emotions can nurture positive social interactions, which eventually may facilitate the individual's work performance (O'Boyle et al., 2011).

Therefore, given the importance of EI, and the role it serves as both a moderator and mediator in the relationship between stress, psychological wellbeing and work performance, it is crucial for organisations around the world to work on improving the EI of existing healthcare employees (Zaman et al., 2021). High levels of EI in HCPs will consequently contribute towards improving individual and organisational capacity, work productivity, and efficiency. Hence, it is necessary for healthcare systems to recruit more emotionally intelligence individuals by testing them on the basis of their EI, along with their intellectual capabilities (Zaman et al., 2021). Furthermore, training for EI must be inculcated from the very beginning; e.g. EI must be incorporated in the educational curriculum for students, particularly for those who are in preparation for becoming medical professionals in the future (Chun and Park, 2016).

1.3.2 Stress, coping, and the role of emotional intelligence in healthcare students

The concept of stress among healthcare students has been widely discussed; students reporting high levels of perceived stress has become extremely common in today's world (Jones and Johnston, 1997; Pau and Croucher, 2003; Shapiro et al., 2000). Experiencing the demands of the course work, being a part of a new environment and new people, and learning to adjust emotionally, financially and socially for those living far from home are some common stressors. Additional sources of stress would include learning applied clinical skills and emotions involved in dealing with patients (Jones and Johnston, 1997; Morrison and Moffat, 2001). Such stress increases the risk of depression (Moffat et al., 2004), substance abuse (Shapiro et al., 2000) and attrition among students (Hughes, 2002; Deary et al., 2003). More importantly, there is growing literature indicating that high stress does not only impact the psychological wellbeing, but also aspects related to performance in these students (Kumar et al., 2020). This is because stress causes students to lose their energy levels, feel demotivated or lose interest in education, and ultimately fail to perform well (May et al., 2015). In addition, other aspects of academic performance such as memory, concentration, problem solving ability in academic environment, are too negatively affected as a

consequence of stress (Spadaro and Hunker, 2016). As discussed in the previous section, EI is a strong determinant of coping (Baker and Berenbaum, 2007). Hence, training healthcare students with EI does not only affect the students' adaptability to studying, but also builds a formation of trust required for the medical professional-patient relationship. It also leads to higher patient satisfaction by stimulating good interaction through the recognition of non-verbal/verbal, and emotional information of the individuals (Chun and Park, 2016). In addition, dealing with emotions effectively can help in improving the mental health and wellbeing among students (Schutte et al., 2007). The challenge in medical education is to understand and determine those psychological factors which help in developing effective skills and competence. Therefore, EI abilities are regarded as the building blocks which may allow students to develop that competence (Imran et al., 2013).

In light of the above literature, coping and EI not only play a crucial role in the prevention of stress (Freire et al., 2019; Schönfeld et al., 2019) but also influence the motivation levels, cognitive and behavioural responses of students to the teaching-learning process (Schunk and Pajares, 2010). Given the fact that the stress levels are significantly higher for healthcare students as compared to other students, this scenario highlights the need to implement effective interventions (Heinen et al., 2017; Zeng et al., 2019), as interventions can help in enhancing students' flexibility in terms of adopting effective coping strategies (Freire et al., 2020). Similarly, bearing in mind HCPs in general, stress-related issues have been in the spotlight for decades and these issues are spreading at a fast rate (Zaman et al., 2021) with major consequences on psychological wellbeing and work performance. Therefore, there is an urgent need for the focus to shift to identifying appropriate wellbeing interventions, which are immediate, sustainable, and realistic (Zaman et al., 2021). The next section will focus on wellbeing interventions, particularly the psychological wellbeing interventions available to HCPs and students.

1.3.3 Wellbeing interventions for healthcare students and professionals

As mentioned in the literature above, it is widely accepted that healthcare employees are regarded as a population which is at high risk of work stress (Yang et al., 2017; McHugh et al., 2011). Such high levels of stress are directly related to higher absenteeism (Rugulies et

al., 2007) and decreased work performance and work satisfaction (LeBlanc, 2009), which in turn jeopardises their mental health and psychological wellbeing, along with patient safety (Rugulies et al., 2007). In addition, with the emergence of the global pandemic, HCPs have experienced a greater psychological impact as compared to non-frontline workers (Blake et al., 2020). Therefore, effective wellbeing interventions in order to prevent work stress, and enhance employees' health, wellbeing and work performance are urgently required (Nielsen et al., 2010). It is imperative for healthcare organisations to invest in an infrastructure which provides evidence-based interventions in order to cultivate a culture which supports the mental health and psychological wellbeing of HCPs (Melnik et al., 2020). Wellbeing and stress management interventions can be classified into individual-level interventions and organisational interventions. These two broad categories can further be classified into primary, secondary, and tertiary interventions (Holman, Johnson, and O'Connor, 2018). The aim of the primary individual-level interventions is to prevent an employee from experiencing stress. To achieve this, the process of selection and assessment is adopted to select those employees who have the skills to manage the demands of the job, and by screening out those who are at risk of experiencing high stress in the target role (Bartone, Roland, Picano and Williams, 2008). Secondary individual-level interventions help to equip the employees with the skills to manage stressful situations and promote overall wellbeing. They also involve providing employees with opportunities to engage in activities that reduce stress such as relaxation techniques, cognitive-behaviour therapy, meditation, mindfulness training, and interpersonal skill development (Giga, Cooper and Faragher, 2003).

There are other types of secondary individual interventions which include educational programmes to inform employees about how stress can be managed, and provision of physical and behavioural interventions which are based on the assumption that adopting healthier lifestyle choices (for example, better diet and more exercise) can lead to improved wellbeing (Anger et al., 2015; Rongen, Robroek, van Lenthe, and Burdorf, 2013). Tertiary individual-level interventions focus on those individuals who experience chronic stress which can interfere with their ability to perform their tasks. One example of such interventions would be employee assistance programmes (EAP) which provide counselling to those experiencing high levels of mental health problems, whether or not these issues are related to work (Bhagat, Steverson and Segovis, 2007; Csiernik, 2011; McLeod, 2008). With regard to the organisational interventions, primary organisational level interventions attempt to change organisational practices and policies to combat stress (Anger et al., 2015). One main example

of such interventions includes job redesign interventions that aim to modify job characteristics to improve employee wellbeing (Humphrey, Nahrgang and Morgeson, 2007; Demerouti, Bakker, Nachreiner and Schaufeli, 2001). Secondary organisational interventions attempt to make wide changes in the organisation in order to help employees to cope better with stress. These interventions include peer support groups, which allow employees to discuss their day-to-day difficulties; and training courses in communication skills, which allow the employees to deal with stressful situations through improved conflict management (Ghazavi, Lohrasbi, and Mehrabi, 2010; Leiter, Laschinger, Day and Oore, 2011).

Similar to HCPs, it is equally important to consider issues related to poor mental health and psychological wellbeing among healthcare students. As mentioned in prior literature, the prevalence of stress among these students is extremely high, particularly in nursing students. Therefore, developing and implementing effective wellbeing interventions for healthcare students must be a priority for educational institutions. Recently, resilience programmes have gained immense attention, which focuses on fostering resilience in healthcare students (Anderson, 2017; Peng, 2014). Such training programmes and interventions often use methods such as role plays, discussions, practical exercises, and homework (Kunzler et al., 2020). Generally speaking, resilience based wellbeing interventions are based on varied psychotherapeutic approaches which include CBT (Abbott, 2009); mindfulness-based therapies (Geschwind, 2011); ACT (Ryan, 2014); problem solving therapy (Bekki, 2013); along with stress inoculation (Farchi, 2010). Further, as it was previously discussed that nursing students are the most stressed population as compared to students in other health-related fields, it is necessary to consider what wellbeing interventions have been offered to these students for managing stress (Galbraith and Brown, 2011). Results from a systematic review by Galbraith and Brown (2011) revealed that interventions may adopt one or more of the following three targets – Target 1 includes reducing the intensity of a number of stressors; Target 2 consists of cognitive reappraisal of potential stressors; and Target 3 sheds light on effective coping behaviours for managing stress in nursing students. For addressing Target 1, a study by Jones and Johnston (2006) introduced problem-based learning to replace the traditional nursing curriculum with an aim to enhance student-centred learning and reduce stress. Results reported improved overall wellbeing among these students as compared to those enrolled in the traditional nursing degree programme. With regard to Target 3, the majority of studies used a combination of techniques for addressing stress in nursing students; all interventions employed either breathing exercises or relaxation/meditation

(Charlesworth *et al.* 1981, Mancini *et al.* 1983, Bittman *et al.* 2004). Some other techniques were also adopted such as systematic desensitization (Charlesworth *et al.* 1981), hypnosis (Forbes and Pekala 1993), and music making (Bittman *et al.* 2004). All the aforementioned studies focused on providing nursing students with effective skills to cope with the negative impact of stressors. Out of these, only two studies reported improvements in stress levels – improvements in both trait and state anxiety was noted (Charlesworth *et al.* (1981); including improvements in burnout and mood disturbances (Bittman *et al.*, 2004). However, high attrition rates were noted in one study (Mancini *et al.*, 1983); out of $n = 30$ participants, only $n = 7$ and $n = 9$ participants were randomly assigned to the experiment and control group respectively. Studies addressing Target 2 aimed to combine cognitive reappraisal with other methods; traditional relaxation was included along with more advanced techniques such as biofeedback (Wernick 1984, Heaman 1995), or Quietening Response (Heaman 1995); some also combined relaxation with imagery (Johansson 1991, Stephens 1992), whereas some employed the use of assertiveness training (Russler 1991) and yoga (Beddoe and Murphy 2004). Of all the studies mentioned in this category, three studies reported improvements in state and trait anxiety in nursing students (Johansson 1991, Stephens 1992, Heaman 1995); reduced depression was reported post intervention (Johansson 1991) along with improvements in perceived stress (Beddoe and Murphy 2004). Therefore, in light of the above findings, more research studies are required to understand whether stress management programmes can lead to improvements in academic performance among nursing students. Further, perhaps future research could conduct more acceptability and feasibility studies for developing and implementing sustainable evidence-based interventions (Park *et al.*, 2022).

Given the rapid development of information technology, there is an increase in wellbeing interventions being delivered online (Spijkerman, Pots and Bohlmeijer, 2016). Digital interventions have become significantly popular for psychological wellbeing of employees in organisations, and for students in educational settings. The main benefits of digital interventions are that it is cost-effective, they have the potential to reach a larger population, and they also reduce stigma as compared to traditional face-to-face or group interventions (Griffiths, Lindenmeyer, Powell, Lowe and Thorogood, 2006). These digital interventions, similar to non-digital interventions, offer primary and secondary prevention strategies, along with self-management directions (Armaou, Konstantinidis and Blake, 2019). There is no

doubt that access to psychological support is required to mitigate the psychological impacts of stress HCPs and students during a public health crisis (Kisely et al., 2020). Given the situation of the global pandemic, HCPs and students must be able to access this support which may help in terms of improved psychological wellbeing (Tang et al., 2020). In such scenarios, digital interventions can play a crucial role by providing the correct information, guidance, and support, along with flexibility for use when working remotely (Blake et al., 2021). However, findings from previous reviews cannot be generalised to the rapidly growing workplace digital interventions, as previous reviews have found that universal and targeted group-based interventions (such as cognitive-behavior therapy), can be effective in terms of reducing depression and anxiety within the workplace (Bhui, Dinos, Stansfeld and White, 2012); but, generalisations may not account for the individual variations, as findings are elicited at the group level. It has been suggested that digital interventions need to have a theoretical base on psychological models and have features that can be responsive to large quantities of real-time data. Besides, difficulties in setting up the testing environments can act as a barrier to evaluating the effectiveness of these digital interventions (Michie, Yardley, West, Patrick and Greaves, 2017). Evidence shows that previous reviews on the effectiveness of digital interventions towards managing mental health and psychological wellbeing, have focussed on reducing the level of stress and poor mental health symptoms, but not addressing the associations with other behavioural, occupational, or psychological outcomes (Stratton et al., 2017). Nevertheless, there has been a sudden increased interest in the digital platform from both public health organisations as well as educational institutions. This is because several aspects of the digital environment offer engagement for participation, better reach, and accessibility of wellbeing interventions (McGloin and Eslami, 2015). It is believed that these digital media channels can play a crucial role in leveraging messages related to health and psychological wellbeing, followed by behavioural change (Santarosa et al., 2018). Also, even traditional face-to-face wellbeing interventions can pose several barriers, e.g. logistic problems, engagement from participants, it can be labour intensive, and difficult to reach a large audience; whereas the digital environment offers solutions to the traditional challenges given its high reach, low cost, anonymity, and adaptability (Bennett et al., 2010). However, literature on the preference for digital vs face-to-face among individuals, particularly among HCPs and students, is still scarce and needs to be further investigated.

To conclude, it can be mentioned that despite the platform of delivering wellbeing interventions, it is important to note that the mental health issues among HCPs and students

have been elevated given the prevalence of COVID-19 (Kock et al., 2022). Therefore, protecting the mental health and psychological wellbeing of HCPs and healthcare students, both during and beyond the pandemic, must remain a top priority. Emphasis on multifaceted wellbeing interventions is required which aim to balance the psychological needs of individuals, thereby boosting overall wellbeing (Kock et al., 2022).

1.4 The present PhD project

1.4.1 Rationale

As mentioned in the above literature, stress does have an impact on the psychological wellbeing and work performance of HCPs, particularly in nurses. Stress can have various consequences on nurses, both personal such as burnout, anxiety, depression, and fatigue, and organisational outcomes such as turnover, absenteeism, and intention to leave the job. Previous studies have demonstrated a relationship between stress and work performance in nurses and reported a negative linear relationship. Despite the plethora of studies on the stress-performance relationship among nurses, however, there remains a lack of understanding of this relationship among the nurses working in the NHS. Also, because most of the research studies conducted were quantitative; there is a need for more qualitative research studies to analyse and understand the effect of stress on the psychological wellbeing and aspects related to work performance in nurses. In addition, there is vast literature which indicates a strong link between EI, stress, problem-solving techniques and psychological wellbeing (Ciarrochi et al., 2002, Gerits et al., 2005); and a majority of studies showed a positive relationship between EI, coping strategies and mental health (Ciarrochi et al., 2002, Pau and Croucher, 2003). Even though the concept of EI is criticized, it has also provided knowledge of strategies that can help nurses to be more engaged in their practice and improve their retention, thus having a positive impact on patient outcomes (Por et al., 2011). However, there is a crucial need to understand the role of EI in the relationship between stress and work performance among nurses; as the literature is limited and requires further research, particularly for those nurses who work for the NHS. Therefore, in order to understand in detail how stress has an impact on the wellbeing and work performance among nurses, this PhD project will take into account the relationship between stress, psychological wellbeing, and aspects of work performance using a mixed methodology, which consists of questionnaire completion, followed by semi-structured interviews from nurses who work in the UK NHS.

Also, as discussed previously, the enhanced wellbeing of nurses is a detrimental factor to improved work performance; but it is also crucial to take into account the emotional wellbeing of nurses. Hence, to gain a deeper understanding, this thesis will cover how EI plays a role as a moderator or mediator in determining the relationship between stress and work performance among nurses (Study 1. Chapter 4).

There is, however, no doubt that stress could lead to catastrophic results in terms of poor wellbeing and reduced performance by NHS employees. Hence, there is an urgent need to offer support to the workforce from the very beginning (Unadkat and Farquhar, 2020). To improve the mental health and psychological wellbeing of NHS employees, a holistic approach is required which is based on the evaluation of needs taking into consideration the breadth and diversity of the workforce at every level (BMJ, 2018). However, issues related to poor mental health and psychological wellbeing still seem to persist as the uptake of psychological treatments is low among the working population, resulting in many employees going untreated (Dewa, Thompson and Jacobs, 2011). Therefore, the promotion of psychological wellbeing at work is largely dependent on the interventions, but it is not clear how effective are those interventions, how they are integrated into the employees' organisational environment, and what are the outcomes of such interventions in terms of psychological wellbeing of the employees, particularly within the NHS. To address this gap, a scoping review is conducted as a part of this PhD project, where the objective of the scoping review is to explore the different types of psychological wellbeing interventions offered to the UK NHS employees, and to identify the key outcomes of these interventions that have been reported concerning psychological wellbeing of the employees (Chapter 2).

Further, over recent years, mindfulness-based interventions (particularly mindfulness-based cognitive therapy) have become among the most prominent work-related psychosocial interventions (Lomas, Medina, Ivztan, Rupprecht and Eiroa-Orosa, 2018). There is growing evidence that MBCT can improve stress-related problems among healthcare staff working in the NHS (Marx et. Al, 2014), and several studies have demonstrated the effectiveness of MBCT within the NHS Trusts. However, despite the fact that MBCT is a widely acknowledged and crucial psychosocial intervention, its effectiveness in terms of psychological wellbeing and acceptability from participants has not been empirically assessed. Further, studies to demonstrate the potential impact of MBCT on work performance has also been scarce. Therefore, this PhD project also takes into account the effectiveness of

an 8-week MBCT programme, as a psychological wellbeing intervention, delivered to employees working in the Nottinghamshire Healthcare Foundation Trust using a mixed-method approach – wherein the quantitative data will shed light on the effectiveness of the programme in terms of improved psychological wellbeing (reduced stress and depression, and increased mindfulness and quality of life); and the qualitative data will provide empirical evidence towards the effectiveness of the MBCT programme on the work performance, along with evaluating its potential benefits on the psychological wellbeing. In addition, the interviews will obtain data obtained from the participants regarding their views on the MBCT programme, and will help gain further insight into the service and its delivery for future implementation (Study 2, Chapter 5).

Similar to the nursing profession, undergoing nursing education is also regarded as more stressful as compared to other healthcare studies, which can consequently lead to poor psychological wellbeing among nursing students (Tung et al., 2018; Turner and McCarthy, 2017; Walker and Mann, 2016). It is essential to support the psychological wellbeing of these students and enhance their coping strategies so they can deal with various difficult situations during university or placements (Demir, Demir, Bulut and Hisar, 2014). As for nurses, EI training nursing students has also been found to reduce stress and improve psychological wellbeing (Meng and Qi, 2018; ErKayiran and Demirkiran, 2018); while it has also been found to increase their efficiency in terms of student learning (Brackett and Mayer, 2003), academic performance, and nursing care (Larijani, Movaghari, Rostami, Zamani and Ghadirian, 2017; Shahbazi, Heidari, Heidari and Rezaei, 2018; Kozlowski et al., 2018). The current PhD project will explore how all four variables mentioned are related to one another hierarchically, along with assessing the potential role of EI as a moderator or a mediator in the relationship between self-efficacy and stress among nursing students - a pattern which has not been looked at previously (Study 3, Chapter 6).

The background to the methods utilised across all three studies in the current PhD project is provided in the Methodology chapter (Chapter 3). This chapter sheds light on the significance and rationale for adopting a mixed-method approach (quantitative and qualitative) for the data collection and analysis across all three studies. It also presents key common aspects relating to the study design, measures and analytical methods employed across all studies.

1.4.2 Overarching aims

- To understand the relationship among stress, psychological wellbeing, aspects of work performance, and coping among nurses working for the NHS.
- To evaluate the effectiveness of an eight-week MBCT programme, in terms of its potential impact on aspects of psychological wellbeing and work performance, delivered to NHS employees; along with an in-depth exploration of participants' acceptability of the programme.
- To explore the relationship among perceived stress, coping strategies, EI, and self-efficacy among UK nursing students.

CHAPTER 2: PSYCHOLOGICAL WELLBEING INTERVENTIONS FOR NHS EMPLOYEES: A SCOPING REVIEW

2.1 Abstract

Aim: The objective of this review was to map the literature on the psychological wellbeing interventions that have been offered to the National Health Service (NHS) employees, and to identify the key outcomes that have been reported as a result of these interventions concerning psychological wellbeing.

Background: The prevalence of poor psychological wellbeing among employees has resulted in an increase in the number of working days lost in the NHS. Additionally, employees quitting their jobs due to mental ill-health, particularly when the global pandemic (COVID-19) commenced exacerbated the situation. Substantial evidence has shown that poor psychological wellbeing does not only impact the individual but also the organisation in terms of reduced productivity, increased absenteeism and presenteeism, and patient care. There is a need to evaluate the effectiveness of psychological wellbeing interventions which are offered to NHS employees to help them foster their overall wellbeing. This is because improved psychological wellbeing may contribute towards a better quality of life both for the employee and improved delivery of healthcare services. Therefore, this scoping review seeks to outline the wellbeing interventions offered to the NHS employees as well as the impact of these interventions on the psychological wellbeing of employees.

Method: The methodology of this scoping review followed the six-stage framework by Arksey and O' Malley (2005). A comprehensive literature search was conducted concerning the psychological wellbeing interventions offered to the NHS employees. The eligible papers, studies, and articles were identified and screened independently using the following databases: OVID, CINAHL, Science Direct, PubMed, and Google Scholar.

Results: In total, 25 studies were identified after meeting the inclusion criteria. These interventions were broadly categorized into counselling (n=3), clinical supervision (n=4), , cognitive-behavior therapy (n=2), and mindfulness-based interventions (n=11). The impact of such interventions on participants' overall wellbeing, stress, anxiety, depression, sickness absence, and some aspects of work performance were noted. Almost every study included in this review reported positive outcomes in terms of reduction in stress levels and burnout, improved wellbeing, reduced depression and anxiety, improved work performance, and improved mindfulness among the NHS employees. Mindfulness-based interventions accounted for the maximum number of studies (11 studies) in this review, particularly mindfulness-based cognitive therapy (MBCT).

Conclusion: This review provides evidence that wellbeing interventions within the NHS have the potential to improve employees' psychological wellbeing and also boost work productivity. The NHS should prioritize working towards a healthier workforce. This scoping review also provides recommendations for future research and practice.

Keywords: Psychological wellbeing, stress, wellbeing interventions, NHS employees

2.2 Background

The prevalence of poor physical and psychological wellbeing among employees in the United Kingdom (UK) is largely due to chronic workplace stress. Stress in the workplace needs to be a key consideration for all employers given its negative impact on employees' overall health and wellbeing (Ravalier, 2022). Poor employee wellbeing not only affects the individual but also bears potential significant negative impacts on the organisations. Poor psychological wellbeing, and in particular stress, depression and anxiety, are the leading causes of sickness absence; they are responsible for around 18 million working days lost in the country, with over half of the cases accounting for work-related ill-health (HSE, 2020). As of March 2020, the sickness absences began to rise above the 10-year average (BMJ, 2021). This peaked in April with 6.2% of employees taking sick leaves each month; equivalent to around 79,000 full-time employees absent each month (BMJ, 2021). In the UK, social and healthcare workers are a major population experiencing high levels of stress and mental health related sickness absence (HSE, 2020). It is important to consider that these high levels of sickness absences are associated with increased workload (Shanafelt et al., 2016); lack of managerial support, peer support, and supervision (Bronkhorst et al., 2014).

The global pandemic, which commenced in March 2020 caused due to the Coronavirus Disease 2019 (COVID-19), placed a substantial strain on healthcare workers and associated organisations worldwide (McFadden et al., 2021). Feelings of fear and worry associated with providing care to patients during the pandemic became very common (Gonzalez et al., 2020). This was accompanied by feelings of anger and frustration resulting from the general unpreparedness of some healthcare systems, such as lack of personal protective equipment (PPE) (Ing et al., 2020). This period was induced by high levels of anxiety among healthcare workers with regard to contracting the virus, getting redeployed to roles for which they felt unprepared, increased workload, and uncertainty about receiving organisational support in

case of ill-health (Shanafelt et al., 2020). Research has highlighted that the wellbeing of frontline workers has deteriorated since the pandemic commenced. For example, a significant decline in the work-related quality of life and wellbeing among health and social care workers has been observed between May and November 2020 (McFadden et al., 2021). Additionally, the work-life balance of healthcare workers has been significantly impacted due to the pandemic (Eftekhar Ardebili et al., 2021). These healthcare employees are at a high risk of physical exhaustion and emotional strain from providing care to a growing number of patients who may be rapidly deteriorating; or they may be exposed to the death of their co-workers (Ayanian, 2020), they may also be faced with moral dilemmas in terms of decision-making for providing care to patients with limited resources (Shyrock, 2020). Healthcare workers with a higher risk of exposure to COVID experience greater psychological impact as compared to those with less exposure (McAlonan et al., 2007).

In light of the highlighted urgent need to support the psychological wellbeing of healthcare employees (Adams and Walls, 2020), promoting psychological wellbeing in the workplace involves the development and interplay of resources at the individual level (e.g., self-efficacy, resilience, and positive psychological capital), group level (e.g., social support), and at the organisational level (which include beneficial human resource practices). The combination of these resources then contributes towards enhanced employee wellbeing including work performance (Nielsen, Yarker, Munir and Bültmann, 2018). There has been a rapid increase of studies on interventions which have included psychological wellbeing as an outcome measure (Fledderus et al., 2010 and Korte et al., 2012), where the main aim of these interventions is to enhance positive psychological functioning (Weiss, Westerhof and Bohjmeijer, 2016).

An evidence review by the National Institute for Health and Care Excellence (NICE, 2022) aimed to highlight the effectiveness of individual-level interventions offered to employees to prevent, improve, and promote mental wellbeing at work. The review also took into account the acceptability of these interventions, along with any barriers and facilitators. A total of 38 studies were reported, out of which 35 studies were randomised control trials; 2 were non-randomised control trials; one was a qualitative study. The majority of studies in this review were based on the use of Cognitive-Behaviour Therapy (CBT), Mindfulness-Based Interventions (MBI), and Stress Management; the review highlighted that these studies were carried out in 17 different countries. Results of the review showed that 6 RTCs reported on

the use of CBT where the intervention was delivered either digitally or face-to-face (Birney, 2016; Bostock, 2016; Grime, 2004; Lexis, 2011; Phillips, 2014), or via telephone (Furukawa, 2012). Evidence indicated that CBT may be effective in improving mental wellbeing and reducing presenteeism; however, it showed no benefits in terms of productivity among employees. One qualitative study by Carolan (2017) concerned with digital CBT use, helped in identifying some barriers and facilitators to the implementation of the intervention; mixed reviews were received on the practicality of delivering an intervention online within the workplace given that privacy and confidentiality would need to be ensured. 5 RCTs reported on the use of MBIs (Zolnierczyk-Zreda 2016; Yang, 2018; Lacerda, 2018; Kim, 2013; Diaz-Silveira, 2020), where evidence indicated its effectiveness in terms of improving employee mental wellbeing and absenteeism. Also, 5 RTCs reported on the use of stress management (Clemow, 2018; Ebert, 2016a; Ebert, 2016b; Heber, 2016; Jones, 2000), where results proved its effectiveness in terms of improving job satisfaction, mental health literacy and quality of life. All the other interventions mentioned in this review presented very low to moderate quality evidence indicating some positive effects on outcomes. The evidence for these interventions were derived from only one or two studies, thereby questioning the generalisability of findings. A previously conducted systematic review by Williams et al (2017) also reported studies on MBI interventions, where the results demonstrated positive improvements in health and wellbeing measures among healthcare employees following the 8-week course. Other examples of interventions offered to healthcare employees, such as the 5-week course of CBT, reported significant wellbeing improvements; online CBT too showed positive effects but the small sample size limited the uptake of the intervention. However, several studies included in this review were of low quality due to lack of control groups (Williams et al., 2017).

The review by NICE (2022), as mentioned, has acknowledged that time pressure and workload were some of the main barriers for employees to partake in interventions; and the most effective interventions were those that were delivered via digital modalities. This can be linked to the previous literature, demonstrating an increasing interest in the area of internet-based interventions within Improving Access to Psychological Therapies (IAPT) (Andersson, 2018; Gibbons et al., 2011). These internet-based interventions have shown the potential to revolutionise the delivery of psychological therapies and offer cost-effective alternatives to face-to-face therapies (Lewis, Pearce, and Bisson, 2012); they are flexible in times when individuals are unable to commit to in-person treatments due to lack of time,

geographical restraints, reduced mobility, or even fear of stigma (Lovell and Richards, 2000; Maercker and Knaevelsrud, 2007; Taylor and Luce, 2003). However, there are several issues pertaining to the systematic evaluation of their effectiveness (Armaou, Konstantinidis and Blake, 2019). Previous studies have shown that group based universal interventions such as CBT have been effective in reducing depression and anxiety in the workplace (Bhui, Dinos, Stansfeld and White, 2012; Wan Mohd Yunus, Musiat and Brown, 2018). However, the results elicited on the group level may or may not account for the individual variations over time (Michie, Yardley, West, Patrick and Greaves, 2017; Heckler et al., 2016). Additionally, the delivery of digital interventions, along with difficulties in setting up comparators can pose further challenges to evaluate their effectiveness (Michie, Yardley, West, Patrick and Greaves, 2017).

As one of the largest organizations in the world, the NHS should be a role model in terms of workplace health by providing employers with good practice (BMJ, 2020). It is widely recognised that the health and wellbeing of the NHS employees is a significant factor in determining how well the NHS performs with regard to patient outcomes (Boorman, 2009). It has also been acknowledged that the prevalence of poor psychological wellbeing among NHS employees can not only have a negative impact on organisational success, but also affect employee retention, and the ability to address broader workforce challenges that the NHS might face (HEE, 2019). The evidence review provided by NICE (2022) highlighted a number of wellbeing interventions offered to employees for promoting mental wellbeing across different geographies; however, it covered only 6 studies which were conducted in the UK, with only one study by Grime (2004) which focussed on employees working in the NHS (NHS). Therefore, there is a need to explore what psychological wellbeing interventions are offered to NHS employees and to determine how effective these interventions are in terms of wellbeing outcomes. A study by Blake et al. (2020) developed and evaluated a digital learning package in the first three weeks of the COVID-19 outbreak. The e-package included an evidence-based guidance and support and signposting in terms of psychological wellbeing for all healthcare employees in the UK. This process comprised public involvement activities (PPIs) in step 1; content and technical development with peer review in step 2, and delivery and evaluation in step 3. The package consisted of actions which team leaders can take for providing safe spaces for employees, along with reducing social stigma, family and peer support, self-care strategies (such as work breaks, shift work, healthy lifestyle behaviours, and fatigue), managing emotions (such as coping, guilt, fear, anxiety, grief, depression and

psychological trauma), along with signposting other through psychological first aid (PFA). The main purpose was to convey an important message of normalising psychological responses during a crisis, along with encouraging help-seeking behaviour.

Prior research has shown that NHS employees are offered a short-term therapy or counselling, which is either provided internally or as a part of an Employee Assistance Programme (Limb, 2020). Counselling is offered to employees who experience several issues at their work. It has been acknowledged that counselling helps in the phased return to work for those who have been on work-related sickness absence. In cases where the return to work is not possible, it sensitively deals with the process of bringing their employment to an end. In addition, a new range of resources were developed and offered to NHS employees particularly after the pandemic commenced. These included access to Silvercloud (which comprises CBT and self-care modules) for employees and their families. Access to other apps such as Sleepio, Headspace and Daylight were also provided (BMJ, 2020). Additionally, many hospital trusts have entrusted teams with the responsibility of creating respite spaces for employees (Bates, 2021; Ford, 2020). These safe spaces are commonly addressed as ‘wobble rooms’, ‘time-out rooms’, ‘chill-out rooms’, ‘rainbow rooms’, ‘safe rooms’, and ‘wellbeing centres’. These rooms offer an optimistic environment to help employees to deal with the impact of the crisis. These rooms ensure privacy, appropriate social distancing, and provide a safe space for employees to talk and garner strength and peer support, in addition to catching up on rest, relaxation, and eating. Here, employees can also avail counselling services either face-to-face or through video chats. Sensory items such as low-level lighting, stress balls, aromatic oils, may be provided to enhance mental wellbeing and aid relaxation. Besides physical rooms, virtual wobble rooms are also provided allowing employees to seek constant self-care tips and group support through venting (Rimer and Chatfield, 2020).

A rapid review by (Bajorek and Holmes, 2020) described a number of papers which have focussed on preventive interventions. For example, a study by Hall et al. (2018) aimed to discuss strategies which could improve wellbeing of General Practitioners (GPs) and prevent the likelihood of burnout. A prior study by Beresford et al. (2016) highlighted the availability of employee support interventions to prevent work-related stress among patient-teams; but the results lacked evidence as to how the interventions improved or sustained employee wellbeing in the healthcare sector. Another review by RAND (2018) analysed the evidence on Mental Health First Aid England training which provided training to attendees in order to

support individuals' wellbeing by signposting them to the right support. However, the results of this review did not provide evidence to whether this would subsequently translate into better outcomes for the individuals they support.

Despite the plethora of approaches and interventions mentioned in the above literature, it still remains unclear as to what psychological wellbeing interventions have been carried out within the NHS to tackle the problem of poor psychological wellbeing among the NHS employees. The above literature has broadly outlined the different strategies adopted for promoting mental wellbeing among employees in general (NICE, 2020); however, there is a need to evaluate the outcome measures of interventions, including the effectiveness and acceptability of interventions that have been specifically offered to the NHS employees. Therefore, to address this gap, a scoping review was conducted to identify and map the literature on the different psychological wellbeing interventions offered to the NHS employees, to assess how effective these interventions are, and what outcomes are produced as a result of these interventions with regard to employee psychological wellbeing. Work performance variables will also be taken into consideration, but only if these have been assessed in conjunction with wellbeing outcomes in the wellbeing studies included in this review.

2.3 Methods

This review will adopt the six-stage scoping review methodological framework (Arksey and O' Malley, 2005), namely: identifying the research question; identification of the relevant studies; study selection; charting the data; collating/summarizing/reporting the results, and consultation.

Stage 1: Identifying the Research Question

This scoping review aims to map the literature on the psychological wellbeing interventions that have targeted the NHS employees population and to identify the key concepts or outcomes that have been reported as a result of these interventions concerning psychological wellbeing. It is anticipated that the findings from this review will contribute towards a greater understanding of what is meant by psychological wellbeing and what interventions have been offered to the NHS employees with regard to their overall wellbeing at work. Also, it is intended that the findings from this review will inform and enhance the use of current

psychological wellbeing interventions to ensure effective delivery to the service users, in this case, the NHS employees, and generate positive outcomes.

To further understand the research question, the Population-Concept-Context method proposed by Joanna Briggs (2015) was adopted for this scoping review:

Population: This review takes into account all the employees who are working within the NHS (NHS), irrespective of their job role.

Concept: To identify the different psychological wellbeing interventions that have been offered to NHS employees, and how these interventions have had an impact on their overall wellbeing. Here, psychological wellbeing is defined as subjective experience; a state on which the positive emotions surpass the negative emotions in one's life (Wright, 2018).

Context: This review is limited to the NHS in the United Kingdom.

Stage 2: Identifying Relevant Studies

A thorough literature review was conducted through using several databases including OVID, CINAHL, Science Direct, PubMed, and Google Scholar. The search strategy comprised of headings, keywords, and other related terms for the concept of psychological wellbeing, wellbeing interventions, and NHS employees. Using the MeSH headings, the following terms were used in the search process:

'Psychological Wellbeing Interventions' OR 'Wellbeing Interventions' OR 'Psychological Wellbeing Programs' AND 'NHS Employees' OR 'Healthcare Employees' OR 'Healthcare Professionals'.

Based on the results obtained from the above search criteria, more detailed research was conducted using individual terms as explained below:

'Stress Management Interventions' OR 'Stress Reduction Programs' AND 'NHS Employees' OR 'Healthcare Employees' OR 'Healthcare Professionals'

'MBIs' OR 'Mindfulness-Based Cognitive Therapy' OR 'Mindfulness-Based Stress Reduction' OR 'ACT' AND 'NHS Employees' OR 'Healthcare Employees' OR 'Healthcare Professionals'

‘Cognitive Behavior Therapy’ OR ‘Computer Based CBT’ OR ‘Digital/Face to Face Interventions’ AND ‘NHS Employees’ OR ‘Healthcare Employees’ OR ‘Healthcare Professionals’

‘Counselling’ AND ‘NHS Employees’ OR ‘Healthcare Employees’ OR ‘Healthcare Professionals’

‘Clinical Supervision’ OR AND ‘NHS Employees’ OR ‘Healthcare Employees’ OR ‘Healthcare Professionals’

Stage 3: Study Selection

Journals and articles were screened independently to meet the eligibility criteria, and they were reviewed on the basis of their title and abstract, followed by the full-text. The reference lists of the articles/journals selected were also screened for further potential sources. To be included in this scoping review, the studies were assessed on the following eligibility criteria:

- Studies conducted on the psychological wellbeing interventions offered to the NHS employees to enhance their wellbeing and manage their stress.
- Interventions delivered through individual or group, and face-to-face or remote modalities.
- Work performance variables were included only if looked at along with wellbeing.

The exclusion criteria for studies are as follows (please find table of excluded studies in appendices, p.448):

- Studies on the wellbeing interventions directed towards patients.
- Studies that have been conducted outside the UK NHS.
- Studies conducted on students in universities or colleges.
- Studies targeted those participants who either have a history of schizophrenia or post-traumatic stress disorder (PTSD); who are at risk of committing suicide.
- Studies that look at the practitioners’ experiences of training they receive for any intervention.

- Studies of interventions that have not published the outcomes in relation to psychological wellbeing.
- Studies that give suggestions/recommendations on which interventions are suitable to offer the NHS employees.
- Studies that look at the employers' perceptions or views of such interventions, for example, how they feel about particular intervention in terms of its effectiveness.
- Studies that focus on the employees' awareness of a particular intervention/approach offered to them in their workplace.
- Studies involving physical or behavioral wellbeing interventions offered to NHS employees.

Stage 4: Data Extraction

The selected studies, after meeting the eligibility criteria, will be presented in the form of a table (see table 1) which will consist of bibliographical information (for example, the author and the year), and study characteristics (for example, the aim of the study, location of the study, sample size, methods used, and outcomes/results).

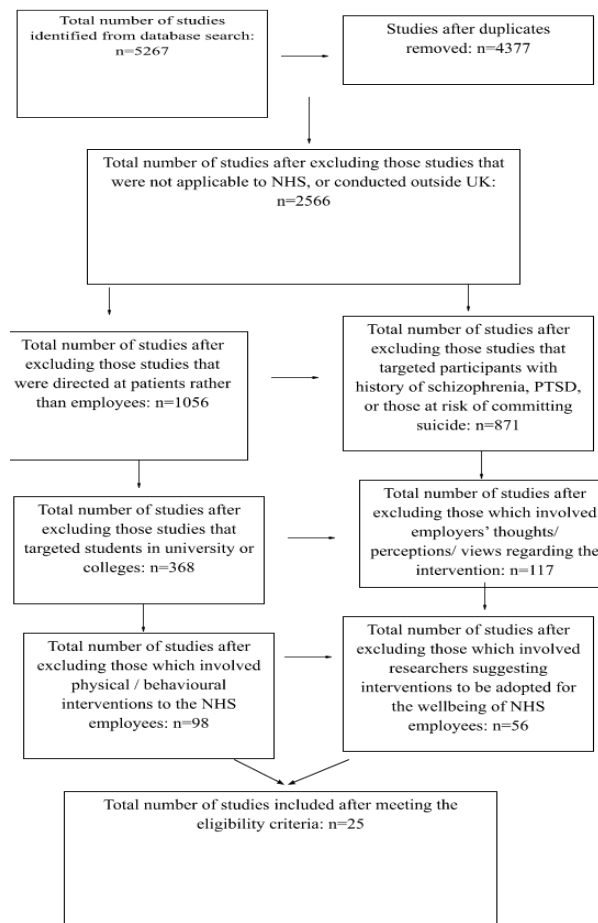
Stage 5: Collating, Summarizing and Reporting the Results

To provide an overview of the breadth of the literature, the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (Moher, Liberati, Tetzlaff and Altman, 2009) method was adopted. The number of journals/articles presented at each stage have been reported through the PRISMA flowchart.

Stage 6: Consultation

This review will not go through consultation since this is an optional stage as suggested by (Arksey and O' Malley, 2005).

Figure 2: Flowchart of the Study Selection Process



2.4 Results

This section highlights the summary of the results obtained in this review. After conducting an extensive search on the psychological wellbeing interventions targeted on the NHS employees, 25 studies were found in total, which focused on the various outcome measures of each of these interventions with regard to psychological wellbeing. Various interventions were highlighted such as counselling, clinical supervision, CBT, training in the psychosocial intervention (PSI), and MBIs- MBCT, MBSR, MBCT-L, MBCT-SH, and ACT. The outcomes of these studies were measured in terms of improved psychological wellbeing, particularly concerning stress, burnout, anxiety, depression, and self-compassion. Several other variables were tapped on such as relationships with colleagues, reduced sickness absence, and decision making in conjunction with wellbeing outcomes. Also, some aspects of

work performance were noted in one study, for example, improved patient care and patient satisfaction.

Counselling

This section covers the counselling interventions offered to the NHS employees; three studies were found and highlighted in this review. Overall, all studies based on counselling and its effectiveness have reported positive outcomes. An early study by Michie (1996) aimed to evaluate the effectiveness of counselling on the hospital employees, about stress-related sickness absence. After conducting self-reported questionnaires on mood and function at baseline, and after a 6-month follow up, the results of this study reported significant improvements in terms of fewer days lost due to employee sickness absence. Also, only 6% of the total sample (n = 163) dropped out of the intervention and 9% of the participants were made redundant, indicating good levels of acceptability and feasibility of the intervention. The second study in this review by Whelan, Robson, and Cook (2002) aimed to evaluate the counselling service provided by the NHS employees, in response to the Health and Work Initiative. This paper revealed that participants had shown high acceptability for this service (n = 26 participants returned the evaluations out of n = 31) and no negative comments were received regarding the counselling service. Also, one of the key issues of the Health and Work Initiative in the NHS, which is employees support, seemed to be appropriately addressed through the introduction of counselling in the Trust. Another study was based on a randomized trial conducted on the NHS employees, which aimed to assess the effectiveness and acceptability of face-to-face counselling, bibliotherapy, and telephone counselling. The results of this study revealed that participants preferred face-to-face counselling (indicating high acceptability) over the other two approaches. In terms of effectiveness, all three interventions appeared effective at post-intervention and follow-up. However, a larger number of participants achieved a clinically significant change from telephone counselling, followed by face-to-face counselling and bibliotherapy. Also, the results revealed the effectiveness and acceptability of bibliotherapy as an occupational stress management intervention. Further, the attrition rate across all three interventions was low (22 participants were assessed out of 25 in face-to-face counselling group; 19 participants out of 24 were assessed in telephone counselling; and 18 participants were assessed out of 23 for bibliotherapy). Because of the lack of a control group, this study was unable to find out if the improvements in psychological distress were due to the interventions or other factors

(Kilfedder et al., 2010). In May 2008, the NHS implemented a telephone-based sickness absence management service referred to as Early Access of Support for You (EASY); which combines the already existing absence policies with telephone communication between the line manager and the absentee. A study by Brown et al. (2015) evaluated the effectiveness of this service between May 2008 to May 2012 by comparing the absence rates of NHS Lanarkshire (NHSL) and the occupational healthcare in NHS Scotland. By combining the time-series analysis of health board sickness absence data and the EASY service data, the EASY service proved effective as the sickness absence rates reduced by 21% in NHSL as compared to NHS Scotland which saw a reduction of sickness absence by 9%, as they only adopted the absence policies. The reasons as to why the EASY service demonstrated effective results was because this service considered more in-depth information on absentees by cause, family, duration, and reporting compliance; the absentees contacted from the first day of their absence were more likely to return to work. However, one key limitation of this study was not being able to quantify the benefits of the EASY service.

Clinical Supervision

This section will highlight the effects of clinical supervision; four studies were obtained with regard to clinical supervision. With regard to clinical supervision, a study by Teasdale, Brocklehurst, and Thom (2000) examined the impact of informal support and clinical supervision on a group of qualified nurses. Eleven random NHS Trusts were selected for the recruitment of nurses for this study. Data were analyzed by comparing the supervised and unsupervised nurses. Results showed that those nurses who received clinical supervision reported more supportive management, and coped better with workplace stress as compared to those nurses who were unsupervised. A similar study by Wallbank (2010) aimed to offer clinical supervision to midwives and doctors (randomly selected), and compare their level of stress, burnout, compassion fatigue and compassion satisfaction with other doctors and midwives who weren't receiving clinical supervision. Results revealed a positive impact of clinical supervision, in terms of the reduced level of subjective stress, burnout, and compassion fatigue for those who received supervision. An increase in compassion satisfaction was also noted for those participants who received clinical supervision as compared to those who did not receive supervision. Further, although only $n = 30$ participants agreed to participate in the study (out of $n = 157$ participants approached), the study provided

substantial evidence for the efficacy of clinical supervision. However, in order to establish further evidence, a wider study with higher number of participants would be required. Another study by Wallbank and Hatton (2011) assessed the effectiveness of clinical supervision on health visitors and school nurses, commissioned by NHS West Midlands. This model of supervision was delivered with safeguarding leadership responsibility in their organisation. The quantitative results of this study showed a reduction of burnout by 36% in most of the participants and stress was also reduced by 59% post supervision. The participants, during the process of supervision, began to think more clearly, as the sessions moved from participants feeling helpless, to recognize that it is possible to overcome conflicts and difficulties. Following the supervision, the professionals experienced an improvement in their collegial relationships, and they began to think of their work as more pleasurable. With regard to restorative supervision, only one study has been conducted with NHS employees by Bowles and Young (2001), who assessed whether clinical supervision reported benefits in each of the dimensions, namely, formative, normative and restorative and the results reported equal proportion of benefits were from the three dimensions.

Other Interventions

This section comprises of miscellaneous psychological wellbeing interventions conducted for NHS employees; four studies are highlighted in this review. An EU-funded project named OSCAR (Occupational Stress with Mental Health Clients in Acute Response), took place as a part of a 2-day training project in an alcohol in-patient ward in South London and Maudsley NHS Foundation Trust (Hill et al., 2010). This programme aimed to reduce the level of burnout among NHS employees. Using the Maslach Burnout Inventory, the burnout scores from the employees were taken before the training, and after one month of receiving the training intervention. The results of this study reported four main sources of stress identified by employees, namely, group work; client aggression; dealing with complex shifts; and effectively evaluating the shift. However, the scores on MBI reported a decrease in the level of emotional exhaustion and depersonalization among NHS employees, and an increase in the level of personal accomplishment, post the training intervention. Similarly, in 2013, the Francis Report examined high profile failings in care and highlighted the need to implement the Schwartz Rounds; a method to improve employee wellbeing, increase compassion and also offer resilience training which would consequently benefit in terms of patient care (Francis R., 2013; Taylor et al., 2018). In order to evaluate the effectiveness of Schwartz

Rounds, in terms of reducing psychological distress, increasing work engagement and compassion among UK healthcare employees, a study was carried out by Dawson et al. (2021). During the 8-month study duration, the Rounds were held on a monthly basis; findings highlighted decreased psychological distress among employees who attended the Rounds regularly as compared to non-regular attenders. However, this study failed to determine the effects of Rounds on other crucial outcomes such as employees' work engagement, self-reflection, and compassion among regular attenders. One possible explanation to this could be that despite of recruiting a higher number of participants at follow-up, a larger number of participants did not meet the inclusion criteria of attending 50% of rounds, thereby leaving the total number of participants to $n = 51$. Nevertheless, the study concluded by highlighting Rounds as a feasible and cost-effective intervention to reduce psychological distress and enhance wellbeing among NHS employees.

One study by Stansfeld et al. (2015) aimed to evaluate the effectiveness of an e-learning intervention which was provided to managers working in the NHS, to improve the wellbeing of employees and reduce sickness absence. This GEM study (guided e-learning for managers) was a randomized trial that adopted a mixed-method approach. Employees were recruited from four mental health services, with three services in the intervention group and one service in the control group. Managers of the intervention group received a facilitated e-learning programme based on work-related stress. Employees were asked to complete questionnaires such as the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) and General Health Questionnaire (GHQ) at baseline and post the intervention. In-depth interviews were also conducted on managers and employees, and data on sickness absence rates were collected from human resources. At the end of the study, the results showed a marginal difference in the wellbeing scores of employees between the intervention group and the control group. Also, no significant changes were noted in the sickness absence rates post the intervention. Further, the results noted that the guided e-learning intervention and trial was acceptable and feasible to both managers and employees who took part.

Cognitive-behaviour therapy

The section outlines the effectiveness of CBT as a psychological wellbeing intervention offered to the NHS employees (two studies reported). The results from a study by Gardner et

al. (2005), revealed the importance and effectiveness of CBT. This study aimed to determine the effectiveness of two stress management interventions, namely, CBT and behavioural interventions which focused on teaching coping skills such as time management and assertive training. Results revealed that those participants (NHS employees), who at the beginning of the intervention reported symptoms of general ill-health, had shown a significant improvement post the cognitive therapy intervention. Also, those who took part in the behavioural intervention reported a small yet clinically effective improvement. To conclude, both interventions were well received with a marginally low drop-out rate, thereby indicating high feasibility and acceptability of the intervention by the participants. When it comes to the digital interventions offered to the NHS employees, there seemed to be a lack of research studies in this area. Only one study was found, conducted by Grime (2004) which aimed to evaluate the impact of an 8-week computerised CBT intervention, Beating the Blues, on the emotional distress of employees within the NHS. Results revealed a decrease in the anxiety and depression levels of employees in the public sector. However, poor recruitment was noted in this study as the sample size was small. Non-participation in the intervention was attributed to factors related to accessibility, lack of time and commitment towards to the programme, preference for other treatments, and scepticism about the intervention.

Coaching

This section covers the coaching assistance provided to NHS employees (one study reported). A study by Gary (2016) aimed to evaluate the impact of a coaching programme with regard to workplace resilience and wellbeing on the employees working in the NHS. The objective of this programme was to determine whether employees remained engaged with their work, despite experiencing difficulties. The results of this programme revealed that the NHS employees gained a deeper understanding of their resilience and wellbeing at work. Participants remained under control even when they perceived their working environment as stressful. Therefore, the coaching programme turned out to be a crucial self-help tool for NHS employees to help them manage their stressful work environment, and remain engaged.

Mindfulness-based interventions

This section evaluates the effectiveness of MBIs including MBCT, MBSR, MBSH, MBCT-L offered to NHS employees, as well as ACT which draws upon mindfulness components. The MBIs constituted the maximum number of studies as a part of this review (eleven studies reported). In terms of MBIs, one feasibility study by Marx et al. (2014) aimed to evaluate five adapted MBCT programmes that were delivered to the NHS employees working in the mental health service as a part of the employees' wellbeing initiative. Their effectiveness was measured using pre and post-intervention and a 3-month follow-up. Results showed a significant improvement in terms of employees' perceived stress and self-compassion. With regard to acceptability and feasibility, 87% of participants accepted the offer of the intervention; with a high retention rate of 89%, wherein participants attended at least half of MBCT sessions. Findings also showed that the employees had improved their physical and emotional health, increased their ability to cope with stress at work, and improved the quality of their work with patients. Similarly, another study aimed to determine the effectiveness of MBCT in terms of sickness absence rates in the NHS. The results revealed an overall reduction in stress, anxiety, and depression among the participants, post the MBCT, along with a significant decline in the sickness absence rates. Further, n = 75 participants responded to the follow-up questionnaires out of which n = 73 perceived the intervention as beneficial for their health and wellbeing; n = 71 felt that the programme helped them to cope better stress; n = 65 displayed significant changes in their work performance post the intervention. (Graham, 2014). Consistent with the above literature on MBSR, a qualitative study by Turner (2013) evaluated the experiences of healthcare employees who undertook the 8-week MBSR programme. The results showed that participants displayed an increase in their self-compassion and compassion for others, which consequently led to better patient care and increased patient satisfaction. The participants also became more aware of their environment, began to recognize their own emotions to different events, and were able to disconnect from these events and re-orientate in the present moment.

The importance and effectiveness of MBCT are not only revealed in terms of organisational benefits such as sickness absence but also in terms of enhancing one's wellbeing (Moorhead et al., 2016). The results from one study, which aimed to determine the effectiveness of MBCT on employees' wellbeing, showed that participants reported an increase in their mindfulness level which had a positive impact on their wellbeing and their ability to manage challenging situations at their workplace. It also had a positive impact on decision-making,

which consequently lead to better patient care (Moorhead et al., 2016). Another study has shown significant correlations between MBCT and reduced burnout among the NHS employees. An 8-week MBCT program was conducted on the employee members, where the results showed a significant decrease in burnout rates posts the MBCT intervention. Employees also reported an increased level of mindfulness and an increased sense of compassion towards patients. Also, the completion rate was high (70%); and participants offered positive feedback of the interventions. Further, the outcomes noted were maintained even post the 6-month follow-up (Jones, 2018). Similar results were revealed in a study by Krusche et al. (2019), which aimed to evaluate a 6-week workplace-adapted mindfulness course. The participants in this study were divided into an active group, and a waitlist group (control group). Compared to the control group, the participants in the active group displayed an increase in their mindfulness and a decrease in perceived stress, and these scores remained consistent even in the follow-up. Overall, the mode of delivery was perceived as an effective and acceptable way to enhance the wellbeing of healthcare employees.

To increase the availability and access to deliver MBIs, previous research has shown an increased interest towards mindfulness-based self-help (MBSH) as it has exhibited promising results. However, similar to other self-help interventions, the dropout rates are high for MBSH, along with the challenges of participant engagement (Banerjee, Cavanagh and Strauss, 2017). Therefore, a qualitative study by Banerjee, Cavanagh and Strauss (2017) aimed to assess the main facilitators and barriers to engaging in MBSH among NHS healthcare employees. This was a feasibility study wherein 31 participants were approached for interviews, out of which $n = 16$ participants agreed to be interviewed (52%). Semi-structured interviews were conducted for those who took part in the MBSH intervention; four overarching themes were formulated using thematic analysis namely, “attitude towards engagement”, “process of change”, “intervention characteristics”, and “perceived consequences”. Results showed that some of the key facilitators for engaging in MBSH included stress reduction techniques, increased sense of agency over thoughts, and shorter practices, whereas some of the key hindrances were long practices, becoming self-critical, and emerging negative thoughts.

For the first time, a modified version of the MBCT course was carried out in a study by Hamilton-West, Pellatt-Higgins and Pillai (2018); this was a feasibility study which aimed to assess whether this modified version was effective enough to reduce perceived stress levels

and burnout among General Practitioners working in the NHS Trust. Using questionnaires at baseline and after the course ended, the results showed a decreased level of stress, emotional exhaustion, and increased accomplishment among the participants. Participants also reported that this course helped them work well under pressure, they felt more relaxed, and felt greater empathy and compassion for their patients and colleagues. Therefore, the results demonstrated high acceptability towards the intervention by the NHS GPs,

Acceptance Commitment Therapy (ACT), has been considered come across as an important approach within the MBIs, showing significant benefits in terms of stress and wellbeing among the NHS employees. One feasibility study aimed to explore the implementation of ACT at the workplace and to evaluate its impact on the work engagement of employees. The study also recruited participants to form a control group, where the employees did not receive ACT. 64% of the total participants attended all sessions; 24% missed one sessions and 22% missed two or three sessions. However, there were no significant differences in results between those participants who received ACT, and those who did not. Overall, the results showed a positive association between the skills taught during the programme and improved work engagement and mental wellbeing. Further, positive feedback by the participants demonstrated high acceptability towards the intervention (Maclean, 2013). A similar study by Hope-Bell et al (2017), aimed to evaluate the effectiveness of ACT. 3-weekly sessions were conducted, and outcome measures were administered at baseline and post-session. Results revealed a significant improvement in employees' wellbeing following the ACT. Also, the qualitative feedback indicated that participants felt engaged with the ACT approach. A very recent study by Strauss et al. (2021) evaluated the effectiveness of MBCT for life (MBCT-L); by conducting a randomized control trial, with one group of participants who received MBCT-L as compared to the wait list control group. The study also analysed the acceptability of the intervention through self-reported satisfaction and levels of engagement. The primary outcome of this study was self-reported stress post-intervention; secondary variables included wellbeing, anxiety, depression, and work-related outcomes. Also, self-compassion and mindfulness were explored to determine their potential effect on stress and wellbeing. The results demonstrated reduction in stress for those who received MBCT-L as compared to the wait list control group. Also, significant effects were reported for depression, anxiety and wellbeing; no effects were reported for work-related outcomes. Also, 73% participants attended majority of sessions followed by home practice, suggesting high acceptability.

The table below lists the number of studies that have been conducted on the psychological wellbeing interventions which are available to the NHS employees and the impact of these interventions on their overall psychological wellbeing.

Table 1: The below depicts the type and number of the various psychological wellbeing intervention reported in this scoping review

Intervention	Number of Studies
Clinical Supervision	4
Cognitive Behaviour Therapy	2
Coaching	1
Mindfulness Based Interventions	11
Counselling	3
Miscellaneous Interventions	4

2.5 Discussion

2.5.1 Summary of results

The main objective of this scoping review was to map and represent the literature on the psychological wellbeing interventions that have been offered to NHS employees. The reason behind conducting this review was to identify the different outcome measures that have been looked at and reported as a result of these interventions, concerning the psychological wellbeing of NHS employees. 25 studies were identified after meeting the eligibility criteria, which highlighted the different wellbeing interventions carried out on the NHS employees, and took into account the different outcome measures of psychological wellbeing.

Out of these 25 studies identified, two studies were conducted to evaluate the effectiveness of CBT out of which one was a computerized CBT program (Grime, 2004 and Gardner et al., 2005). Both studies revealed improvements in the General Health Questionnaire (GHQ) scores, a significant reduction in anxiety and depression scores, and a reduced level of stress among the NHS employees. One study looked into an e-learning intervention which was facilitated for the managers working in the NHS. However, no significant differences were reported in terms of sickness absence and wellbeing of NHS employees. Three studies conducted on counselling showed the effectiveness and acceptability of this intervention in

terms of employees' psychological wellbeing and reduced sickness absence (Michie, 1996; Whelan, Robson and Cook, 2002; and Kilfedder et al., 2010). The studies noted for clinical supervision in this review, have seemed to focus mostly on the nursing population working in the NHS. Four studies took into account the effectiveness of clinical supervision in relation to different aspects of wellbeing among nurses, and all the studies reported a positive impact of receiving clinical supervision such as reduction in the overall stress and burnout level post supervision (Wallbank and Hatton, 2011), compassion fatigue and increased compassion satisfaction (Wallbank, 2010), and improved coping skills to deal with the workplace demands (Teasdale, Brocklehurst and Thom, 2000). Also, one study focused on the effectiveness of a coaching programme on the wellbeing and resilience of the NHS employees; this resulted in participants managing their stress levels better even in difficult working situations, and remaining engaged at their workplace (Gary, 2016).

Finally, the majority of studies (11 studies) focused on MBIs, particularly six studies on MBCT, one study on MBSR, and two studies on Acceptance Commitment Therapy (ACT) (Maclean, 2013; Turner, 2013; Marx et al., 2014; Graham, 2014; Moorhead et al., 2016; Hope-Bell et al., 2017; Jones, 2018; Hamilton-West, Pellatt-Higgins and Pillai, 2018; and Krusche et al., 2019), one study on MBSH (Banerjee, Cavanagh and Strauss, 2017), and one on MBCT-L (Strauss et al., 2021). Considering the frequency of studies conducted on MBCT per se (6 studies), as compared to all other psychological wellbeing interventions, shows that this approach is quite popular, and possibly a way forward for the NHS, when it comes to helping the employees with their overall psychological wellbeing. Traditionally, the use of MBCT was to help prevent any relapse from recurrent depression (Segal et al., 2002), but now it suggests that MBCT can offer wider benefits (Marx et al., 2014) to the NHS employees and also to the organisation as a whole. The results mentioned have clearly highlighted the popularity and significance of mindfulness-based intervention.

2.5.2 Synthesis of findings and implications

The overall results of the different psychological interventions mentioned above have shown positive outcomes in terms of employee psychological wellbeing within the NHS. Some of the main outcome measures, as a result of the reviewed studies, include improved wellbeing (as a result of MBCT-L, coaching programme and ACT); reduced stress and burnout (as a result of CBT, MBCT, and clinical supervision); reduced depression and anxiety (as a result

of CBT, MBCT, MBCT-L, and clinical supervision); increased compassion (as a result of MBSR, MBCT and MBCT-L); enhanced coping (as a result of MBCT), better mood (as a result of counselling); and increased mindfulness (as a result of MBOE and MBCT-L). Several aspects of work performance have also been noted as a result of the wellbeing interventions, along with the wellbeing outcomes. For example reduced sickness absence and improved relationship with colleagues (as a result of MBCT and counselling); improved decision-making skills and managing challenging situations at work (as a result of MBCT). These findings are consistent with prior literature; for e.g. the systematic review by NICE (2022) broadly categorised the wellbeing interventions into CBT, MBIs and Stress Management techniques. Also, with regard to the feasibility outcomes, several aforementioned interventions demonstrated high retention rates and high acceptability (Michie, 1996; Wheelan et al., 2002; Kilfedder et al., 2010; Dawson et al., 2021; Stansfeld et al., 2015; Gardner et al., 2005; Marx et al., 2014; Graham, 2014; Jones, 2018; Krusche et al., 2019; Banerjee et al., 2017; Hamilton-West et al., 2018; Maclean, 2013; Hope-Bell et al., 2017; and Strauss et al., 2021). These feasibility and acceptability outcomes were measured through data on recruitment, dropout rates, and level of engagement; along with the participants' satisfaction and overall experience of the intervention which was gathered through qualitative data. The results of this scoping review covered the psychological wellbeing interventions offered specifically to the UK NHS employees. However, as compared to previous systematic reviews (such as the NICE Guidelines), less RCTs were reported as a part of this review, for e.g., ACT (Maclean, 2013); CBT (Grime, 2004); stress management (Gardner et al., 2005); clinical supervision (Wallbank, 2010 and Teasdale et al., 2000); Schwartz Rounds (Dawson et al., 2021); and MBCT-L (Strauss et al., 2021). This information is relevant because randomized studies reduce bias and provide a more rigorous tool to examine and understand the cause-effect relationship between the intervention and the outcome (Hariton and Locascio, 2018). In addition, this review covered only a small number of interventions which were delivered remotely or via digital modalities, for e.g., digital CBT (Grime, 2004); guided e-learning program for managers (GEM) (Stansfeld et al., 2015); telephone based sickness absence (EARLY) (Brown et al., 2015); and telephone counselling (Kilfedder et al., 2010). It is crucial to take this into account as participants demonstrate higher acceptability for partaking in interventions delivered digitally given the advantage of convenience, discreteness and anonymity (NICE, 2022).

Nevertheless, the interventions highlighted in this scoping review are presented as examples of good practice in an environment like the NHS, where the organisation is highly committed to promoting wellbeing among its workforce. It is, therefore, necessary to continue exploring different ways to support the employees and focus on their mental health and psychological wellbeing at work (Antonovsky, 1987; Boorman, 2009), as positive psychological wellbeing does not only contribute towards overall life satisfaction, but also help to maintain a balanced work environment for oneself and the organisation as a whole (Tedeschi and Calhoun, 2004; Boorman, 2009; Lyubovnikova, et al, 2015).

2.5.3 Limitations

The results of these studies provide evidence regarding the usefulness and importance of psychological wellbeing interventions as consistent with the above literature. However, there are several limitations to this scoping review. One limitation being this review does not cover various other wellbeing interventions such as physical interventions, or complementary and alternative medicines (CAM therapies), which are also crucial in contributing to the overall wellbeing of the employees. Another limitation of this scoping review is that it explores the different psychological wellbeing interventions offered to all the NHS employees, and there is no comparison between different sectors within the organisation. This is a crucial point as the level of stress varies among employees working in different sectors and therefore, the impact of a particular intervention may also vary.

2.5.4 Future directions

The results of this scoping review highlight the need for researchers to explore and effectively evaluate the different psychological wellbeing interventions offered to the NHS employees. Further research is required to improve the quality of evidence and overcome methodological challenges when evaluating the different psychological wellbeing interventions. One of the ways to tackle this issue involves adopting more randomized control trials in order to determine the long-term effects of interventions offered to the NHS employees. Intervention studies need to incorporate long-term follow ups with participants to determine how benefits of these interventions are sustained over time. There is a lack of research data on digital interventions offered to the NHS employees to help them manage

their workplace stress and foster their psychological wellbeing. Future research needs to include more studies on the impact of digital interventions, as it is widely known that they are cost-effective and scalable means to promote psychological wellbeing as compared to face-to-face interventions (Ebert et al., 2014). In addition, more research is required to explore how the different psychological wellbeing interventions also have an impact on the organisational level, in terms of work pay, sickness absence rates, turnover, productivity, and patient satisfaction.

2.5.5 Conclusions

As a result of this scoping review, all studies noted evaluated the effectiveness of different wellbeing interventions in terms of psychological wellbeing among the NHS employees, with MBCT forming the majority of studies. Despite the positive results mentioned from each intervention, there still remains a need for exploring aspects which could be improved or adapted in these interventions. This will help in addressing the needs of the NHS employees; and also help in determining the factors which act as barriers to employee uptake of these interventions.

Table 2: Studies carried out on the psychological wellbeing interventions for NHS employees

Author and Year	Purpose of the Study	Sample Size and Place	Methods Used	Outcome
Brenda Gardner, Dr John Rose, Oliver Mason , Patrick Tyler & Delia Cushway (2005).	To determine the effectiveness of stress management interventions, namely, cognitive intervention based on cognitive therapy and behavioral intervention.	N= 138 employees working in the NHS, England.	RTC - Employees in the intervention received group stress management either through cognitive therapy or with the focus on their coping skills. Measures- The Mental Health Professional Stress Scale, Eysenk Personality Questionnaire pre intervention; GHQ, Ways of Coping Scale, and Appraisal Questionnaire post intervention.	Significant improvements in the GHQ scores and reported less stress post the cognitive and behavioral intervention.
Sonya Wallbank and Sue Hatton (2011).	To assess the effectiveness of clinical supervision in reducing burnout and stress.	N= 22 professionals in the health visitor and school nurse leadership program, UK.	Intervention study (pre/post)- Participants received up to 6 sessions of clinical supervisions. Measures - Professional Quality of Life Scale and Impact of Event Scale.	Post the supervision, participants' burnout was reduced by 36. Stress levels also reduced by 59% post supervision.
Dee Gray (2016).	To evaluate the impact of a resilience and coaching	N= 5 employees working in the NHS, who are members of	3-part programme – first was to introduce employees to the	Participants experienced transformational

	program on the work engagement of employees working in the NHS.	a project delivery team were recruited for this study.	knowledge of work-related stress; second was one to one coaching; third was based on using the model as a team.	understanding of resilience and wellbeing (on an individual and group basis).
Josh Hope-Bell, Dr. Olivia Donnelly, Fabio Zuchelli, Dr Nic Hooper and Lois Coy (2017).	To evaluate the effectiveness of a training course on ACT to improve the stress and wellbeing of employees.	N= 90 NHS employees in Bristol, UK.	Intervention study- 3-weekly 3 hour group sessions conducted using different ACT practices. Measures- GHQ, Valuing Questionnaire and the WAAQ.	Employees showed significant improvements across all the measures from pre and post intervention. They also experienced positive changes in their wellbeing.
Catherine Kilfedder, Kevin Power, Thanos Karatzias, Aileen McCafferty, Karen Niven, Zoe Chouliara, Lisa Galloway and Stephen Sharp (2010).	To assess the effectiveness and acceptability of three interventions for occupational stress.	90 NHS employees participated in this study.	Interventions study - face-to-face, telephone counselling and bibliotherapy. Measures - CORE, GHQ-12, PSS-10, and Participant satisfaction measure.	Significant changes achieved from telephone counselling. Participants expressed preference towards face-to-face counselling over the other two interventions.
Paul R. Grime (2004).	To assess the effects of an eight week program of computerized CBT, 'Beating the Blues' on the emotional distress in employees	N= 48 public sector employees, NHS London.	RTC – Digital CBT Measures - Hospital Anxiety and Depression Scale; and Attributional Style Questionnaire.	Towards the end of the treatment and a month after, mean depression, attributional and anxiety scores were significantly reduced

	with recent absenteeism.			in the intervention group.
Ross Turner (2013).	To understand and examine the experiences of healthcare employees with regard to an 8-week MBSR course.	N=8 healthcare professionals in the NHS, Glasgow.	Intervention study - 8-week MBSR programme, followed by semi-structured interviews to gather data on the participants' experiences of the programme.	Participants' began to focus on their self-care; also displayed an increase in compassion towards themselves and others, post the programme.
Robert Marx, Clara Strauss, Cleo Williamson, Karunavira, and Taravajra (2014).	To evaluate the 5 adapted MBCT groups delivered to the NHS employees as a part of health and wellbeing initiative.	N=42 working employees working in NHS, UK.	Intervention study – MBCT. Measures – PSS-10 and Self-Compassion Scale.	Significant improvements in employees stress and self-compassion; MBCT improved employee physical and emotional health; ability to cope with stress, and their relationships with colleagues and patients.
Lisa Cram (2014)	The aim of this study was to analyze the overall reduction in the NHS employees sickness rates through the use of MBCT.	N=240 NHS employees, UK.	Intervention study- MBCT. Measures – DAAS; Brief Resilience Scale; The Warwick-Edinburgh Mental Well-Being Scale.	Overall reduction of stress, anxiety and depression among the NHS employees post the course; reduced sickness absence.
Ryan Askey-Jones (2018).	To explore the effect of MBCT on burnout	N= 69 participants in the North-West NHS Trust, UK.	Interventions study (pre/post)- MBCT. Measures - The	There were significant correlations between

	among mental health professionals.		Maslach Burnout Inventory (MBI) and The Freiburg Mindfulness Inventory.	mindfulness and reduced burnout levels among the employees.
Linda Whelan, Maggie Robson, Peter Cook (2002).	To evaluate the setting up of counselling service in the NHS Trust in response to the Health and Work Initiative.	N=65 NHS employees in Hartlepool General Hospital, UK.	Employees perceptions of the counselling service was received via an anonymous questionnaire.	The participants felt that counselling was useful for resolving their issues at work. The issue of employees support was addressed through the introduction of this service.
Adele Krusche, Christopher D. Jack, Cornelia Blunt, and Anne Hsu (2019).	To evaluate a workplace-adapted mindfulness course in a hospital setting.	N= 65 NHS hospital employees, Birmingham.	Intervention study – 6-week MBOE. Measures - Basic Psychological Needs at Work Scale, PSS, and the Five-Facet Mindfulness Questionnaire short form.	Significant increase in participants' mindfulness, psychological need fulfilment, and reduced level of perceived stress at work.
Kirsten Maclean (2013).	To assess whether ACT could be implemented in order to improve the mental wellbeing and foster engagement at work among mental health employees.	N= 45 mental health NHS employees, Lancashire.	RTC- ACT. Measures - The Utrecht Work Engagement Scale, Michigan Job Satisfaction Scale, Hospital Anxiety and Depression Scale, and GHQ.	Participants displayed acceptability to the intervention; positive association between the skills taught during training and improved mental wellbeing and work

				engagement among the participants.
Cate Moorhead, Jill Winfield and Mark H. Freeston (2016).	To assess whether MBCT training course would increase the level of mindfulness among NHS clinic employees; to explore its benefits on employees wellbeing.	N= 10 NHS employees members, Newcastle, UK.	Intervention study (pre/post)- 8-week MBCT. Measures - Freiburg Mindfulness Inventory (short-form) and Newcastle Mindfulness Training Questionnaire; followed by semi-structured interviews.	Increased mindfulness level of employees with a positive impact on their wellbeing and their ability to manage challenging situations at work and home. Positive impact on the decision-making and patient
Sonya Wallbank (2010).	To assess the effectiveness of clinical supervision in reducing stress for employees, and to examine whether supervision can act as a tool to help employees in dealing with their emotional demands at work.	N= 157 total participants (120 midwives and 37 doctors) in one hospital in UK.	RTC- Clinical supervision. Measures - The Positive and Negative Affect Schedule, Impact of Event Scale, and Professional Quality of Life Scale.	Significant decrease of scores in subjective stress, burnout, compassion fatigue, and increase in compassion satisfaction was noted for participants in the treatment group.
Kevin Teasdale, Neil Brocklehurst, and Natasha Thom (2000).	To examine the impact of informal support and clinical supervision on nurses.	N= 211 qualified nurses from one NHS Trust, England.	RTC- Clinical supervision. Measures - Maslach Burnout Inventory and Nursing in Context Questionnaire.	No significant differences in the MBI scores between supervised and unsupervised nurses. Significant differences in scores

				in NICQ between the two groups with supervised nurses coping better at work and having better access to supportive management as to the unsupervised nurses.
Nick Bowles and Christine Young (2001).	To assess whether clinical supervision provides benefits in all three dimensions namely, normative, formative and restorative, and to determine whether the effect of clinical supervision was affected either by length of service or participation.	N=662 registered nurses working in a large NHS Community Trust, England.	Qualitative study - 11 semi-structured interviews which were conducted over a 3 month period among nurses. Additional data was gathered by interviews from ten interviewees' supervisory partners.	Benefits of clinical supervision were reported in equal proportion on all the three dimensions. A positive correlation was found between experience of supervision and its reported benefits; an inverse correlation was found between length of service and its benefits.
Kate Hamilton-West, Tracy Pellatt-Higgins and Neil Pillai (2018).	To assess whether a modified MBCT course had the potential to reduce burnout and stress among General Practitioners working in the NHS.	N= 22 GPs working in the NHS, South East England.	Intervention study (pre/post)- 8-week MBCT. Measures – PSS and MBI.	Decreased scores on the Perceived Stress Scale from when taken at baseline. Scores of MBI, particularly depersonalization and emotional exhaustion scores, were also reduced.

Stephen A Stansfeld, Sally Kerry, Tarani Chandola, Jill Russell, Lee Berney, Natalia Hounsome, Doris Lanz, Céire Costelloe, Melanie Smuk, Kamaldeep Bhui (2015).	To examine the feasibility of recruitment, adherence and effectiveness of an e-learning intervention provided to managers to reduce sickness absence and improve employee wellbeing.	N=350 employees and 21 managers working in the NHS Mental Health Trust, UK.	RTC- GEM (guided e-learning programme for managers). Measures- Warwick Edinburgh Mental Wellbeing Scale (WEMWBS), GHQ, and sickness absence < 21 days; followed by interviews with managers and employees.	Scores on WEMWBS were slightly reduced in the intervention group as compared to the control group. No significant evidence was found in the sickness absence rates.
Susan Michie (1996).	To evaluate the effectiveness of counselling in terms of reduced absenteeism among employees.	N= 163 hospital employees working in the Occupational Health Unit (OHU), London.	Intervention study (pre/post) – Counselling. Measures- A short eighth-item questionnaire; sickness absence records from the hospital computers.	Scores on mood and functioning showed significant improvements. Reduced sickness absence rates were also reported following the counselling service.
Hill, Robert G. <u>Atnas, Catherine I. Ryan, Peter Ashby, Kirsty Winnington, Julie</u> (2010).	To evaluate the effectiveness of a 2-day training programme, OSCAR, designed to reduce the burnout levels among employees.	N= 19 nurses working in the alcohol in-patient ward at Maudsley NHS Foundation Trust, UK.	Intervention study (pre/post) – OSCAR. Measures- Maslach Burnout Inventory.	Scores on MBI showed reduced level of emotional exhaustion and depersonalization, and increased scores in personal accomplishment.
Judith Brown, Daniel Mackay, Evangelia Demou, Joyce Craig,	To determine the effectiveness of EASY service (Early	N=32,921 NHS employees in Scotland.	Time-series analysis of health board sickness absence	Reduced sickness absence by 21%, as compared to the

John Frank, Ewan B Macdonald (2015).	Access to Support for You) in reducing sickness absence among NHS employees as compared to the normal occupational healthcare in Scotland.		data and the analysis of the EASY service data base using survival analysis and Cox's proportional hazards model.	Scottish NHS health boards reported reduced sickness absence (9%). Reduced mean duration of MSK absences in year 2,3 and 4 as compared to the 1 st year.
Jeremy Dawson, Imelda McCarthy, Cath Taylor, Kristin Hildenbrand, Mary Leamy, Ellie Reynolds, Jill Maben (2021).	To determine the implementation and evaluation of Schwartz Rounds in UK healthcare organizations.	N=51 participants from 10 NHS healthcare organisations.	RTC- Schwartz Rounds. Measures - GHQ, work engagement using the three-item "Motivation" section of the NHS staff survey, self-reflection using a 6-item self-reflection subscale, and compassion using Santa Clara Brief Compassion Scale.	Reduced psychological distress by 19% for those who attended. No significant increase in terms of work engagement, compassion and self-reflection.
Moitree Banerjee, Kate Cavanagh and Clara Strauss (2017).	To explore the facilitators and barriers of engaging in mindfulness-based self-help among healthcare employees.	N=16 employees in a clinical role within the NHS UK.	Intervention study (qualitative)- MBSH. Measures- Semi-structured interviews conducted post the intervention.	Facilitators factors included improved psychological wellbeing and increased self-compassion. Employees demonstrated an increased awareness of thought patterns,

				enhanced acceptance and increased control. Hindrance factors included long practices, becoming critical, and emerging negative thoughts
Clara Strauss, Jenny Gu, Jesus Montero-Marin, Adrian Whittington, Cavita Chapman, Willem Kuyken (2021).	To determine the effectiveness of mindfulness-based cognitive therapy for life (MBCT-L) in terms of reducing stress and other secondary outcomes among NHS employees.	N= 234 healthcare employees in one NHS Trust, South England.	RTC- MBCT-L. Measures - (DASS-21), Short Warwick Edinburgh Mental Wellbeing Scale, Maslach Burnout Inventory-Human Services Survey, Institute for Medical Technology Assessment Productivity Cost Questionnaire, Sussex-Oxford Compassion Scales, and Five Facet Mindfulness Questionnaire-Short Form.	Participants in the MBCT-L group showed reduced stress, anxiety, depression; along with enhanced wellbeing, self-compassion and mindfulness as compared to the wait list group. Also, mindfulness and self-compassion mediated the effects on stress and wellbeing.

CHAPTER 3: METHODOLOGY

The present chapter provides an overview of the mixed methodological approach adopted for Study 1 (Chapter 4), Study 2 (Chapter 5), and Study 3 (Chapter 6) for the thesis.

3.1 Overview

A mixed-method research refers to a methodology which involves adopting a combination of methods in order to address the research questions. It includes both qualitative and quantitative methods of data collection and analysis (Creswell, 2015). The quantitative approach relies on data collected by methods such as experiments, quasi-experiments, longitudinal studies and surveys. On the other hand, the qualitative research approach relies on data obtained through phenomenological research, narrative research, case studies, and ethnography (Shan, 2021). The quantitative approach was originally associated with the post-positivist position (Phillips and Burbules, 2000), which assumes that the aim of any research is to describe, predict, explain, and intervene a social phenomenon (Phillips and Burbules, 2000). On the other hand, the qualitative research approach is rooted in the constructivist/interpretivist position (Lincoln and Guba, 1985), which posits that the main aim of a social scientific research is to understand and interpret social phenomena (Guba and Lincoln, 2005). The last decade of the 20th century has observed a growing interest and popularity for the use of mixed-method research in social sciences (Shan, 2021). Numerous advantages have been noted for adopting a mixed-method design. These include addressing complicated research issues, as it combines both post-positivism and interpretivism of philosophical frameworks (Fetters, 2016); providing a meaningful explanation by integrating both quantitative and qualitative findings. In other words, the mixed methodology allows the researcher to address the research questions with sufficient breadth and depth (Enosh et al., 2014). Through this, the quantitative findings enable the researcher to collect data from a large sample size, thereby generalising the findings to a wider population. Whereas, the qualitative approach provides an in-depth understanding of the issues being investigated. (Dawadi et al., 2021).

However, there are some criticisms behind the mixed-method approach; researchers have different opinions with regard to the qualitative and quantitative methods of data collection and analysis. For example, Hammersley (1996, p. 3) stated that the mixed-method research paradigms are “founded on incommensurable philosophical and political presuppositions”.

Incompatibilists argue that using both quantitative and qualitative approaches are incompatible with regard to the reality, and the relationship between the researcher and object of investigation. This is due to the fact that the qualitative approach envisions the world as multiple and dynamic, whereas for a quantitative approach, the world is static (Dawadi, Shreshtha and Giri, 2021). In addition, there are several other limitations to using the mixed-method approach as pointed out by David et al. (2018), Fauser (2018), and Dawadi (2019). First, deciding which mixed-method approach to use for a particular study, can be challenging for researchers as they may find it difficult to understand how mixing of methods can inform the data analysis; and not to forget, the interpretation of the results. Second, collecting and analysing data can be a lengthy process, and can prove to be more expensive in terms of time and cost. Third, it can be challenging to maintain a balance between the two traditions, as it is easy for any researcher to favour one tradition more than the other depending on their comfort. Fourth, the integration of data from both methods and triangulating them can pose an additional challenge. Nevertheless, despite its limitations and challenges, it can be argued that using both quantitative and qualitative methods can be effectively combined to produce more credible findings, thereby strengthening the research conclusions and implications (Maxwell, 2016; Morgan, 2014). Therefore, given the nature of the research questions for each study in this current thesis, all three studies have adopted a mixed-method approach for data collection and analysis.

3.2 Study design

All three studies of this current thesis have adopted a mixed-method study design which draws upon both qualitative and quantitative approaches of data collection and analysis. The use of self-report questionnaires is one of the most widely used assessment strategies for collecting and analysing numeric data in order to address the research questions (Demetriou et al., 2015). On the other hand, semi-structured interviews and focus groups, are used as the most common methods of qualitative research (Flick, 2009). Therefore, self-report questionnaires were administered in order to collect quantitative data across the three studies, followed by semi-structured interviews for collecting the qualitative data. One study (Study 3) also adopted the method of focus groups for collecting more in-depth qualitative data, along with the interviews. Further details about the study design for each study (Study 1, Study 2, and Study 3) will be highlighted in the subsequent chapters (Chapter 4, Chapter 5, and Chapter 6 respectively).

3.3 Sample size

In order to determine the minimum sample size required for the quantitative part of Study 1 (nurses working for the NHS) and Study 3 (nursing students based at the University of Nottingham), the method of G*Power calculation was adopted (version 3.1). The power analysis and sample size calculation are determined by factors such as the effect size, power, significance level, and the type of statistical analysis (In et al., 2020; Ko and Lim, 2021). The G* Power provides the effect size (f^2) conventions as small, medium or large for estimating the sample size calculation of a statistical test. These provide the conventional effect size values which are different for different tests (Kang, 2021).

3.4 Measures- Quantitative data

3.4.1 Online Data Collection

Online data collection has gained immense popularity among researchers for conducting survey research (Nie et al., 2002) as compared to the traditional paper/pen form, especially since the COVID-19 outbreak. Research has shown several advantages of conducting surveys online, with one of the main advantages being accessing populations that are difficult to reach through other channels (Garton et al., 1999). Another benefit of using internet-based survey is saving time; allowing the researcher to reach out to a larger sample size in a short span of time (Yun and Trumbo, 2006). Numerous online survey creation tools provide easy design templates as well as assistance with data migration to statistical software. Additionally, surveys also prove to be cost-effective. The traditional method of survey administration through paper can be very costly as it involves the cost of printing, postage, and mailing. Electronic mediums allow researchers to eliminate the need for paper and other costs (Llieva et al., 2002). However, there are several limitations and challenges associated with online surveys; there is a tendency for some individuals to respond to the survey invitation while there are some individuals who tend to ignore it, leading to a systematic bias (Thompson et al., 2003). Another disadvantage is having open access to the survey link. This can pose other limitations such as multiple email addresses from the same individual, invalid email addresses, and multiple responses from participants which can be problematic (Andrews et al., 2003).

Given the current circumstances of COVID-19, the nature of the research questions, and the targeted populations for all studies in this thesis (nurses working in the NHS, NHS healthcare staff, and nursing students based in the University of Nottingham), using self-report questionnaires through an online survey platform (JISC Online Surveys) was deemed as the most appropriate and convenient way of reaching out to participants and collecting quantitative data. The JISC Online Survey platform is a University of Nottingham approved tool, recognised as a powerful survey platform which helps gather questionnaire data for a variety of educational and research institutions; it can administer a range of questionnaires with varied formats along with access to survey control and email distribution. The instruments for every study were carefully selected by the researcher (NB) after also taking into account their psychometric properties such as reliability and validity. The questionnaire data was stored on the JISC Online Survey which was password protected. Upon completion of the questionnaires, only the researcher and the chief investigator (EN) had access to the responses which were anonymised by the researcher using unique identifier codes before they are tabulated into the SPSS spreadsheets. Questionnaires were presented in such a manner which gave participants the option to 'save and continue later' which reduced the risk of potential tiredness or loss of interest. The questionnaires filled by the participants for each study have been described in further detail in the subsequent study chapters.

3.5 Measures- Qualitative data

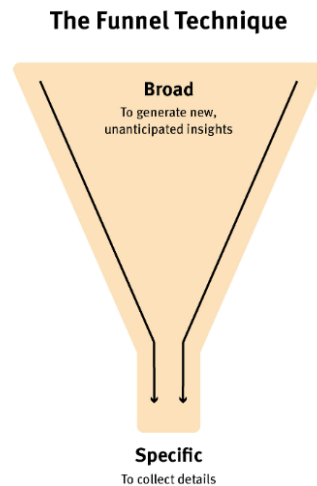
3.5.1 Interviews

The purpose of semi-structured interviews is to gain an in-depth understanding of themes of the lived daily world from the participants' perspective (Kvale and Brinkman, 2009). During the interview, the interviewer records and interprets the meaning of what was said and also how it was said. These type of interviews can take on different versions; the most common being the face-to-face form, however, online interviews as a method of data collection has also gained a lot of popularity among researchers (Kvale and Brinkman, 2009). One major advantage of conducting semi-structured interviews online is having wide geographical access; interviewing people from all over the world (Mann and Stewart, 2000). Additionally, this type of interview is also very interactive in nature; the material is generated through an interaction between the interviews and the researcher (Myers and Newman, 2007; Legard et

al., 2003). However, online interviews can also pose a challenge; this is due to the lack of visual and non-verbal cues such as body language and facial expressions, which help in contextualising the interviews in a face-to-face environment (O'Connor et al., 2008). Secondly, interviews can be very demanding on the mental and intellectual abilities of the researcher; as they must be able to listen and understand the interviewees' responses in order to initiate further probes (Myers and Newman, 2007; Legard et al., 2003). Nevertheless, conducting semi-structured interviews is a sufficiently effective tool for collecting qualitative data, not only to reach out to geographically dispersed individuals, but also because it is less time consuming and cost-effective (Lichtman, 2006).

The qualitative part of all three studies in this thesis adopted the method of semi-structured interviews (please find the interview guide for Study 1, Study 2 and Study 3 in the Appendices, p.403; p.419; p.432). Each interview guide for every study consisted of 10 open-ended questions. The key topics included in the semi-structured interviews across all three studies were based on the outcomes of the literature review, which led to the formulation of questions. With regard to the questions included in focus groups for Study 3 (as discussed in the subsequent section), these were based on the themes and related sub-themes formulated from the interview, on topics which required further exploration. The interviews conducted for all three studies employed the funnel technique; a technique which developed since the time interviews emerged as a qualitative research method (Rosala and Moran, 2022). The purpose of this method revolves around asking broad (open-ended) questions before proceeding to more narrow (close-ended) questions. In other words, this research involves a general to more specific flow of questions, allowing for prompts by the researcher where appropriate in order to close down on details in relation to a queried topic. An advantage of this technique is to avoid any risk of potential bias or missing out on crucial information (Rosala and Moran, 2022). Given the pandemic situation, and bearing in mind the participants' convenience, all interviews took place remotely via MS Teams.

Figure 3: The funnel technique



3.5.2 Focus Groups

Another method of collecting data for qualitative research is focus groups; it is defined as an extended version of the interviews consisting of a more in-depth discussion albeit within a group of individuals (Collins and O'Brien, 2003). This discussion is structured and organised with the help of the facilitator/moderator where selected topics are explored, with the main goal of providing useful insights into the topic (Collins and O'Brien, 2003). Factors such as preplanning and design of the discussion, along with its environment play a crucial role when conducting these sessions (Krueger and Casey, 2000). Online focus groups are the terminology used for the delivery of focus groups through the use of internet technology. Internet and other online platforms have gained immense popularity in recent years as compared to real in-person meeting situations (Gundumogula, 2020). However, online focus groups may not be as lively as in a face-to-face environment, probably due to technical restrictions, but they allow eligible individuals to participate despite the geographical boundaries. Additionally, it allows individuals to participate from their homes, making it convenient for them and reducing the need for transportation (Gundumogula, 2020). The importance of focus groups for qualitative research has been discussed by several researchers. First, focus group sessions promote interaction among participants with spontaneity; data obtained from such group discussions are often more deep and rich as compared to one-to-one interviews (Thomas et al., 1995). Second, they encourage participation from people who

are reluctant to be interviewed (Kitzinger, 1995). Third, they are more cost-effective as compared to other research tools (Dreachslin,1999; Leita0 and Vergueiro, 2000).

Therefore, given the flexibility, richness, and other several advantages, one study (Study 3) of this current thesis has adopted the method of focus group discussion along with semi-structured interviews, for the qualitative part of data collection and analysis. Similar to the semi-structured interviews, focus group discussions were recorded on MS teams and transcribed through the automatic transcription facility embedded into the online platform.

3.6 Participant recruitment and procedure

Given the current circumstances of COVID-19, all three studies commenced during the peak national lockdown. Due to this reason, the researcher could not directly approach the participants to take part in the studies; instead had to rely on external sources, e.g. the COMMS team, or the Director of the Nursing Course for circulating the flyers for each of the studies (please see flyers for all three studies in the appendices, p.402; p.418; p.431). The flyers consisted of a link which would direct all interested participants to the online survey platform (JISC Online Surveys); wherein a ‘Participant Information Sheet’ was provided with in-depth details of the study, followed by a ‘Consent Form’, before proceeding to the questionnaire completion. Participants denoted their interest to take part in a follow-up interview (and focus group, as per Study 3), by checking the corresponding box within the consent form itself. Participants who agreed to be contacted for an interview were reached out to by the researcher to set up a date/time depending on their convenience. All interviews, and focus group sessions took place via Microsoft Teams. No stipend or convenience allowance was offered; instead, a few participants selected randomly from the lucky draw received an Amazon Gift Voucher for Study 1 and Study 3. Specific details about participants and study procedures are outlined in the respective study chapters.

3.7 Data management and ethical considerations

All studies of the current thesis were conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki, 1996; the principles of Good Clinical Practice, and the UK Department of Health Policy Framework for Health and Social Care, 2017. The researcher and chief investigator endeavoured to protect the rights of the study

participants to privacy and informed consent, and adhered to the Data Protection Act, 2018. The study forms only collected the minimum required information for the purposes of the studies. The questionnaire data were stored on the JISC Online Survey which is password protected. Upon completion of the questionnaires, only the researcher and the chief investigator had access to the responses and these were anonymised by the researcher using unique identifier codes before they are tabulated into the SPSS spreadsheets. The interviews and focus group sessions were recorded on MS Teams, and automated transcripts were generated through this online platform which is a secure system that complies with the University's data protection requirements (and General Data Protection Regulations - GDPR). The video/audio recordings were further transcribed by the researcher (to ensure accuracy in the extracted text) and the transcriptions were anonymised using unique identifier codes (that were also cross-matched with the corresponding quantitative data identifier codes so a synthesis of the anonymised quantitative and qualitative data of the participants was performed). In compliance with the ethical guidelines, the recordings were stored and automatically uploaded on OneDrive, and these were destroyed as soon as the transcripts were created. Every effort was made to transcribe the recordings as soon as possible (within 3 days). Any references that included any identifiable information about the participants were omitted from the transcripts. Also, any personal information of the participants such as name and contact details will be kept for 6-12 months after the study is over, with the consent forms retained for up to 7 years. These documents which contain identifiable information (such as names and contact details) were stored separately from the research data collected. All other anonymised research data will be kept securely for 7 years or for as long as required for the dissemination of the research data.

It was explained to the participants, in the Participant Information Sheet, that entry into each study was entirely voluntary and that participation in the first part of the study (questionnaires) will not necessitate their participation in the second or third part of the study (interviews and focus groups). Participants were informed that they could choose not to answer any questions they did not wish to; and that they could inform the researcher if they wish to withdraw at any time during either or all parts of the study without having to give a reason for their withdrawal. If a participant felt upset and no longer wished to answer any further questions, the researcher would respect that and will end the interview/session. Further, participants were informed that they were not obliged to answer any questions (during questionnaires and interview/focus group sessions) that would cause them any distress, or even if they simply did not wish to

answer. It was also suggested by the researcher that the participant sees their GP, or a welfare advice officer and/or refer to the range of wellbeing resources provided in the Participant Information Sheet, in case they experienced any distress during or after the study completion.

3.8 Data analysis

3.8.1 Quantitative data

The raw data from all three studies were extracted from JISC online surveys and tabulated and scored in Microsoft Excel sheets; after which they were entered into a statistical tool, SPSS (version 28). This data was also screened for any missing values and outliers.

Encountering missing data is a common issue in empirical research. There are several reasons for data to be missing in the dataset; length of questionnaires, some participants choosing not to answer a certain question, and loss of instruments (Cool, 200). It is crucial for researchers to be able to deal with missing data; several procedures can be adopted for treating missing data such as deletion or imputation (Dodeen, 2003). With regard to the deletion category, pairwise and listwise deletion are commonly used procedures for discarding data; the imputation category consists of simple or multiple regression, and mean substitution (Rubin, 1976; Raymond and Roberts, 1987; Kromrey and Hines, 1994; Helms, 1999; Raaijmakers, 1999). For the current thesis, the procedure of mean substitution was adopted to treat missing data. This method allows the researcher to make use of the collected data from an incomplete dataset (Kang, 2013) by replacing the missing values of a case with its mean of non-missing cases (Raymond, 1987). Demographic characteristics of participants from all three studies were noted in terms of their age, gender, marital status, ethnicity, years of work experience, and year of education in the case of Study 3. Also, descriptive statistics were used to identify the mean, standard deviation, skewness, and kurtosis of variables across all three studies. Descriptive statistics help summarise data about the sample being studied in the form of simple quantitative measures such as means, percentages, frequency, variance, standard deviation and range (Kaliyadan and Kulkarni, 2019).

Normality tests

Assessing the normality of data distribution is a prerequisite for many statistical tests, in order to carefully select the method of data analysis. If the data follows a normal distribution, researchers adopt parametric tests for data analysis, whereas non-parametric tests are used

when the data is not normally distributed (Mishra et al., 2019). Various methods are employed to test the normality of data; these include the Kolmogorov-Smirnov test, the Shapiro-Wilk test, skewness, kurtosis, box-plot, Q-Q plots, histogram, and mean with standard deviation (Mishra et al., 2019). For the current thesis, Study 1 and Study 3 referred to the Kolmogorov-Smirnov test given that the sample size was larger than 50; Study 2 used the Shapiro-Wilk test given that the sample size was lower than 50. Based on the results, which can also be identified from histogram and q-q plots (please see appendices, p.404; p.420; p.435) Study 1 and Study 3 adopted parametric tests for data analysis (regression and Pearson correlations), whereas Study 2 used a non-parametric test (Wilcoxon Signed-Rank Test).

Regression

The term regression refers to a process of predicting one variable from another variable; multiple regression involves describing the process by which several variables predict one another (Kothari, 2007; Vohra, 2007). Linear regression assesses the relationship between the independent and dependent variable (Sureiman and Mangera, 2020). For *Study 1*, the method of simple linear regression was used to identify the impact of the independent variable (Stress) on the dependent variable (Work Performance) and the effect of stress on aspects of work performance such as work satisfaction, and absenteeism/presenteeism among nurses working for the NHS.

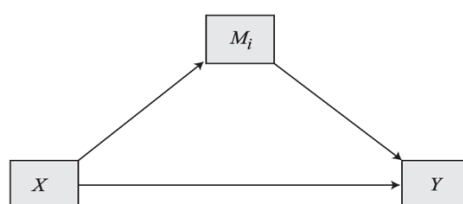
Correlations

Correlations refer to a process of measuring the association, relationship, or correlation between variables in order to determine whether they are negatively or positively related, or unrelated in any way (Obilor and Amadi, 2018). These variables are related if change in any one variable influences the change in another variable. Correlation coefficients measure the degree or magnitude of an association between two variables; they can be high or low, and negative or positive (Obilor and Amadi, 2018). The three most popular correlations include Pearson's, Spearman's rho coefficient, and Kendall's tau coefficient (Hauke and Kossowski, 2011). The use of either Pearson's correlation or Spearman's rank correlation coefficient depends on the normality tests of the datasets. Given that the data was fairly normally distributed in Study 3, Pearson's correlation test was used to assess the associations between stress, emotional intelligence, coping (problem-focused, emotion-focused, and avoidance), and self-efficacy.

Mediation

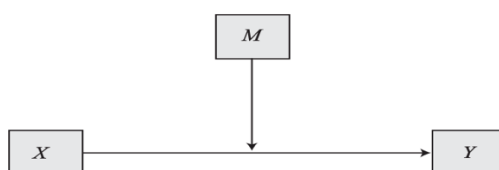
In psychological research, mediation analysis has gained increased importance. Mediation effect occurs when the relationship between an independent variable (x) and dependent variable (y) is explained by the presence of a mediating variable (m) (Miles et al., 2015).

Figure 4: Mediation Analysis (Hayes, 2013)



On the other hand, moderation effect occurs when the effect of one predictor is changed in the presence of a second predictor. This is typically referred to as the ‘interaction effect’ (Miles et al., 2015).

Figure 5: Moderation Analysis (Hayes, 2013)



In Study 1, moderation and mediation analysis was conducted using PROCESS Macro in order to determine the moderating and/or mediating role of emotional intelligence in the relationship between stress and work performance. Similarly, for Study 3, this analysis was carried out for assessing the moderating/mediating role of emotional intelligence in the relationship between self-efficacy and stress.

Wilcoxon-signed rank test

Given the uneven distribution of the data sets in Study 2, a non-parametric test (Wilcoxon-Signed Rank) was adopted to differentiate between the pre and post-sets of questionnaire data. The Wilcoxon-Signed Rank test is regarded as an alternative to the paired t-test used to analyse paired data or data from a single group (George et al., 2013).

3.8.2 Qualitative data

As discussed in the previous sections, qualitative methods of data collection are widely used by several researchers (Divan et al., 2017). However, it is also recognised that clear guidance is required on the practical aspects of conducting qualitative data analysis (Clarke and Braun, 2013). Thematic analysis (TA), which is a widely used technique for analysing qualitative data, refers to a process of identifying themes and patterns within the qualitative research data (Braun and Clarke, 2006). One major advantage of adopting this method of analysis is that it provides the core skills which are useful for conducting several other kinds of analysis. Furthermore, is regarded as a method instead of a methodology; unlike other qualitative analysis techniques, it is not tied to a specific theoretical or epistemological perspective, thereby making it more flexible (Clarke and Braun, 2013). The goal of TA is to identify themes and use those themes to address the research. This is not just about summarising the data as a good TA helps in interpreting and making sense of the data. One common challenge here is when researchers use the main interview questions as themes; this reflects that the data has been summarised but not yet analysed (Clarke and Braun, 2013). There are several ways to approach thematic analysis (Alhojailan, 2012; Boyatzis, 1998; Javadi and Zarea, 2016), which in turn creates some confusion about the nature of TA and how it is different from content analysis (Vaismoradi, Turunen and Bonda, 2013). Most researchers adopt the 6-step framework, which is the most influential approach as it offers a clear and usable framework for doing TA (Braun and Clarke, 2006).

Step 1: Becoming familiar with the data; this involves reading and re-reading the transcripts to become familiar with the entire body of data.

Step 2: Generating initial codes; which involves organising the data in a systematic and meaningful way. Coding can help reduce large amounts of data into smaller chunks of meaning.

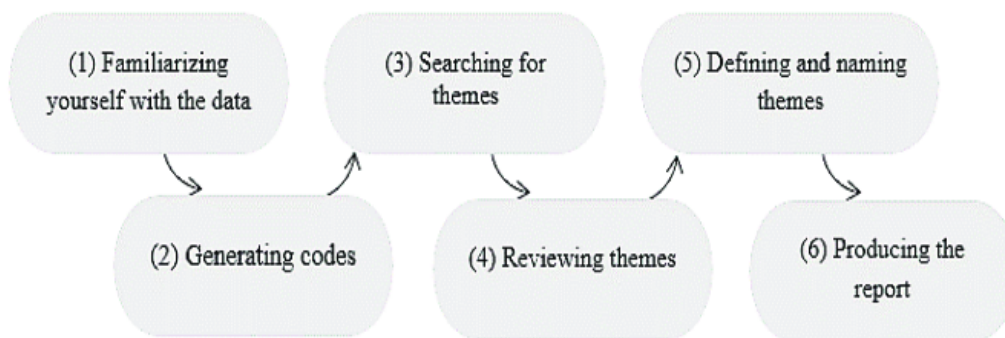
Step 3: Search for themes; which refers to a pattern that captures something interesting and significant about the data and research questions.

Step 4: Reviewing themes; which involves reviewing, modifying and developing the preliminary themes that were identified in Step 3.

Step 5: Defining themes; which helps in identifying the essence of what each theme is about and refining them.

Step 6: Writing-up; which usually refers to the end-point of research in the form of report writing.

Figure 6: The 6-Step Framework by Braun and Clarke (2006)



Given that qualitative data analysis can pose some challenges, the 6-step framework of Braun and Clarke (2006) helps in understanding the “how” of analysis. Therefore, all studies in this current thesis have adopted the method of thematic analysis to analyse qualitative data. The 6-step framework was used to analyse all interviews from every study, including the focus groups conducted in Study 3.

3.9 Reflexivity statement

3.9.1 The significance of reflexivity

The concept of “reflexivity” has been practised and articulated in literature in various fields (for e.g., social work, psychology, and nursing) for over a century (Mitchell, Boettcher-

Sheard, Duque and Lashewicz, 2018). It has been established as one of the promising ways through which researchers can ensure rigour and quality in their qualitative research (Teh and Lek, 2018). A definition by Berger (2015) explained the term reflexivity as a researcher's deliberate and conscious effort to be attuned to one's own responses to participants, and the way in which a research account is constructed. It helps identify and demonstrate the potential and/or actual consequences of personal, circumstantial, or contextual aspects on the process of findings of the study, whilst maintaining one's own awareness as a part of the world being studied (Berger, 2015). When considering the similarities and differences between researchers and participants, it is important to note the researcher's position as an insider or outsider, or whether they have shared experiences with the participants (Berger, 2015; Teh and Lek, 2018). Therefore, the researcher must be cognizant of these similarities and differences between oneself and others, in order to ensure good quality of work.

According to Alvesson and Skoldburg (2000), there are two key elements to consider in reflexive research, namely, interpretation and reflection. The interpretation element acknowledges that interpretation is not merely just simple analysis of data; but postulates that it is influenced by the assumptions of researchers conducting research, including their use of language and their values. The reflection element, on the other hand, is when researchers turn attention to themselves, their intellect, research community, and cultural conditions informing the research. Reflection involves a form of interpreting an interpretation which is what makes the research reflexive. Furthermore, reflexivity is comprised of two interactive elements, namely, prospective and retrospective reflexivity; wherein the prospective reflexivity involves the effect of the whole-person-researcher and reflexivity involves the effect of the research on the researcher (Edge, 2011). However, there are some limitations associated with reflexive research. Researchers have argued for the tendency of reflexivity to be perceived as narcissism (Cunliffe, 2004; Tomkins and Eatough, 2010). When conducting reflexive practices, the confessional nature of reflexivity may be associated with self-indulgence; there may be a tendency to privilege the voice of the researcher, while subjects of the study are kept at a distance (Fournier and Grey, 2000). Further, reflexive research may become more central than the subject matter itself; conducting reflexivity while not being reflexive can take place when one fails to recognise the situatedness of their positions as researchers (Cunliffe, 2003). Nevertheless, despite some aforementioned limitations, the process of reflexivity allows research to be questioning, insightful, transparent, and inter-subjective on various different levels (Haynes, 2010).

3.9.2 Researcher's prospective reflexivity statement

Bearing in mind the significance of the reflexive practice, the researcher and author of the current thesis (NB) were aware of the aforementioned issues whilst conducting, analysing, and interpreting interviews and focus group findings from each of the three studies. Several apprehensions were acknowledged by the researcher while conducting interviews and focus group sessions. First, all three studies took place during peak national lockdown; given the complex nature of work for both healthcare professionals and students along with the intensity of workload particularly during the pandemic, the researcher was unsure if participants would agree to take part in these studies. Second, all interviews and focus group sessions were conducted online via Microsoft Teams (depending on participants' convenience) as face-to-face sessions were not possible due to the social distancing protocols in place. Third, given the non-medical background of the researcher, some apprehension revolved around the inability to understand certain terms or concepts associated with the medical field. Fourth, given that the researcher is an international student based in India, understanding certain accents or body languages could have served as a potential issue. Nevertheless, the warmth and support of healthcare professionals, including nurses and nursing students, played a crucial role in helping the researcher to efficiently conduct all studies. HCPs and students, despite their busy schedules particularly during peak COVID-19, displayed their eagerness to take part in the studies. Participants sharing in-depth details regarding stress, psychological wellbeing, performance, coping, and wellbeing interventions helped the researcher attain a good insight into the NHS work culture; along with the nursing education curriculum at University of Nottingham. Also, by building a good rapport at the beginning of interviews and focus groups, participants felt comfortable and shared content beyond the asked questions. Further, participants acknowledged the cultural differences and language constraints with the researcher; regardless, they displayed corporation thereby allowing a smooth flow of discussion.

Despite the lack of any prior training, the researcher was well supported by her academic supervisor throughout the PhD journey; this helped the researcher gain confidence in conducting interviews and focus group sessions along with keeping an open mind for avoiding any potential biases. Also, the researcher was pivotal in using probes, as and when required, during interviews and focus group sessions; this ensured the conversation does not deviate from the current topic. Further, the researcher aimed to avoid any cultural biases and

remained open to varied perspectives as offered by healthcare professionals and students across all three studies. Finally, the researcher was mindful to not draw any conclusions based on personal assumptions but 'stick to' the participants' quotes as closely as possible.

CHAPTER 4: THE ROLE OF STRESS ON PSYCHOLOGICAL WELLBEING AND WORK PERFORMANCE OF NURSES WORKING IN THE NHS: A MIXED-METHOD STUDY (STUDY 1)

4.1 Background

4.1.1 Stressors experienced by nurses

Nurses form the backbone of the healthcare industry worldwide; they play a crucial role in the smooth functioning of any hospital given their close relationships with patients as compared to any other healthcare personnel (Ogundipe et al., 2015). Given the caring nature of the nursing profession, nurses are responsible for issues related to the maintenance of health and treatment of various illnesses within healthcare settings all over the world (Siu et al., 2002). However, nursing is considered a stressful occupation (Adib-Hajbaghery et al., 2012, Oxtoby, 2015), which involves expenditure of energy on several different levels. This makes the profession mentally, psychologically and physically demanding, where thereby exposing nurses to higher risk of chronic stress (Mwinga and Mugala, 2015). Statistics have revealed that the global presence of stress among nurses is between 9% - 68% (Dagget et al., 2016), varying across countries and sectors within healthcare settings (Isfahani et al., 2021). Various social, environmental, organisational, and individual factors have been associated with high levels of stress in the nursing profession (Faremi et al., 2019). High workload is one of the major reasons causing increased stress among nurses (Halpin et al., 2017; Li and Lambert, 2008); including other stressors such as rotating shifts, working overtime due to shortage of staff (Naholi et al., 2015; Dall'Ora et al., 2015). Issues with the work environment, along with organisational and management issues also contribute towards stress among nurses (Nwozichi and Ojewole, 2015). Further issues that have been reported include poor communication within the workplace, lack of participation in the decision-making process; issues with salary, fringe benefits, and lack of personal/family-friendly policies or regulations (Gibbens, 2007); lack of breaks, less support from supervisors and peers (Johan et al., 2017). The unpleasant work environment such as overcrowding of wards, lack of ventilation, noise, poor ergonomics, along with unpredictable working hours are also reported as contributory factors (Gibbens, 2007). From an emotional perspective, witnessing death of patients, caring for patients, dealing with patients' families, managing the pain of patients, and interpersonal conflicts are too associated with stress (McGrath, Reid, and Boore, 2003).

In addition, professional issues such as lack of status, professional recognition and autonomy have been recorded as sources of stress (Stacciarini and Troccoli, 2004).

Furthermore, ethical issues have also been highlighted as stressors among nurses; this is due to the fact that nurses' values and desires to provide high quality care to patients can give rise to ethical dilemmas (Begat et al., 2005). The recent acceleration in the speed of COVID-19's spread has caused further issues, such as fear of infecting oneself and/or infecting their loved ones (Neto et al., 2020; Jackson et al., 2020); fear of the unknown regarding the disease (Jackson et al., 2020); high rates of transmission and fatality due to the disease (Neto et al., 2020); excessive workload and long working hours (Neto et al., 2020; Maben and Bridges, 2020) which have also been pointed in prior literature (Sun et al., 2020; Liu et al., 2020; Mo et al., 2020). Redeployment has been another major issue during the pandemic causing higher stress levels, as nurses were to work outside of their speciality disciplines (Maben and Bridges, 2020). Experiencing higher than normal patient-nurse ratio, lack of appropriate PPE, higher number of patient deaths, even though encountering death of patients is expected in the nursing role, have also been highlighted as stressors during the pandemic (Jackson et al., 2020; Maben and Bridges, 2020).

4.1.2 The impact of stress on the psychological wellbeing and work performance of nurses

With such a demanding occupation, the ongoing stress experienced by nurses can have catastrophic effects on nurses' psychological wellbeing (Welsh, 2009; Gaol's et al., 2012) and quality of life (Celmece and Menekay, 2020). The psychological indicators of stress include, but are not limited to, fatigue, low self-esteem, changes in appetite, and poor work-life balance (Schneiderman et al., 2005). In addition, stress produces psychological reactions ranging from mere exhilaration to more severe forms of anxiety (including feelings of worry, tension, fear, apprehension), depression, discouragement, anger, lack of interest in activities, and estrangement from others (Portman, 2009). In addition, reliving trauma, either in form of dreams or memories, can cause severe disturbances in sleep along with displaced aggression among nurses (O'Donovan et al., 2013). With the onset of the global pandemic, nurses were at higher risks of experiencing severe stress, leading to anxiety and depression (Wan et al., 2020). Another dangerous overwork condition, leading to poor psychological wellbeing, is burnout (Guixia and Hui, 2020), which includes symptoms like fatigue, emotional exhaustion, and loss of interest in patients (Kisa, 2020; Sahin et al., 2020).

Interestingly, the effect of stress has a major impact on nurses' ability to accomplish tasks (O'Donovan et al., 2013). More specifically, impaired concentration, poor decision-making, and decreased motivation can lead to decreased work performance (Jones et al., 2003). In addition, impaired work performance, as a result of high stress, can lead to increased conflicts with co-workers, burnout, retention issues, increased absenteeism and presenteeism rates, along with low work satisfaction (Labrague et al., 2016). Prior literature has demonstrated varied results when understanding the relationship between stress and work performance among nurses globally; a study by Westman and Eden (1996) investigated the relationship between stress that resulted from excessive demands placed on nurses and their performance level. The findings indicated a negative linear relationship between the two, which means as job stress increases, the level of performance decreases. Other studies have also indicated that high levels of occupational stress among nurses are correlated with low performance, supporting the assumed negative linear relationship between stress and work performance (Jamal, 1984; Levek and Jones, 1996; Motowidlo et al., 1986). Another study by Motowidlo, Packard, and Manning (1986), showed that the interpersonal aspects of performance such as warmth, sensitivity, and adaptability were significantly correlated with subjective stress, hostility, and depression. Interestingly, the findings of a study in Jordan showed that nurses who had more recognition of their performance experienced less stress at work as compared to those who felt their work was not recognized (AbuAlRub and Al-Zaru, 2008). These findings have been consistent with other literature indicating that performance recognition plays an important role in motivating healthcare professionals (Dielman et al., 2003) and leads to work satisfaction and low turnover (Cartledge, 2001). However, even though there is a growing body of literature explaining the stressors experienced by nurses, research suggests that the stressors have changed over time (Happell et al., 2013). For instance, shift work (Hayes et al. 2006, Lavoie-Tremblay et al. 2008, Barker and Nussbaum 2011) and lack of reward seem to have greater prominence as the sources of stress.

4.1.3 Stress, work satisfaction, and work performance in nurses

Stress, work satisfaction, and performance are known to be interrelated. Stress has been reported to affect work satisfaction and consequently the work performance of nurses, which then compromises nursing care (Nabirye et al., 2011). Previous research has shown a negative relationship between perceived stress and work satisfaction. This means that as

stress level increases, work satisfaction decreases among the nursing population (Flanagan and Flanagan 2002, Sveinsdottir et al. 2006, Zangaro and Soeken 2007). In healthcare services, nurses' work satisfaction is considered a key factor in shaping the growth of performance (Hanan, 2009). Research has shown that the organisational features of the hospital have a significant impact on work satisfaction among nurses (Adams and Bond, 2000). These features include personnel shortage, intention to leave work, lack of equipment, etc (Liu, Zhang, Ye, et.al., 2012). According to Blegan (1993), 13 factors are known to predict nurses' satisfaction. These include personal attribute variables such as age, education, locus of control and years of experience, and organisational variables such as commitment stress, communication with supervisors, autonomy, job recognition, fairness, and professionalism. The study of work satisfaction among nurses has focused on both the antecedents and outcomes of satisfaction (Laschinger et al., 2001). Work satisfaction of nurses results from rational management and is associated with proper leadership and motivation in the organisation (Giallonardo, Wong, Iwasiw, 2010), as well as job engagement (Wong and Laschinger, 2013). Evidence from past research on nurses has shown that work satisfaction is linked to several aspects of work performance, including patient satisfaction (Krugman and Preheim, 1999), turnover and productivity (Butler and Parsons, 1989; Robinson et al., 1991). A study revealed that work satisfaction among nurses can lead to more productivity, higher quality of care, and intention to stay within the organization (Knoop, 1995). On the other hand, job dissatisfaction led to absenteeism (Shader et al., 2001), along with poor performance and lower productivity (Butler and Parsons, 1989; Robinson et al., 1991). Several researchers support the idea that work performance leads to work satisfaction, and found a low but consistent relationship between performance and satisfaction. They argue that performance leads to intrinsic (recognition and self-actualization) and extrinsic (promotion and pay) rewards, which consequently leads to work satisfaction (Al-Ahmadi, 2008). Some researchers, on the other hand, found no relationship between performance and work satisfaction. A study conducted by Packard and Motowidlo (1987), explored the relationship between subjective stress, work satisfaction, and work performance among nurses. Findings showed that stress is associated with lower performance at work and that work satisfaction is not related to performance, rather it is an independent consequence of depression. Another study aimed to identify the factors which influence the performance of nurses in Riyadh; results revealed that work performance is positively correlated with work satisfaction and organisational commitment (Al-Ahmadi, 2008).

4.1.4 Impact of COVID-19

Nurses' work performance and efficiency were of crucial importance during the pandemic (Jiang et al., 2020). Nurses faced a high mental workload, which did impact the performance of their duties (Abazari et al., 2020). It is deemed a major concern for all healthcare organisations throughout the globe, as increased workload of nurses during the pandemic can have a negative impact on their work performance, contribute to patient mortality and lead to other medical errors (Pourteimour et al., 2021). A study by Pourteimour et al. (2021) aimed to understand the relationship between mental workload and work performance among nurses during the pandemic; results revealed a weak positive relationship between mental workload and performance. However, frustration showed a negative relationship with work performance among nurses. The pandemic came with increased levels of stress and anxiety among the hospital staff which could interfere with the ability to perform tasks effectively (Sheikh et al., 2021). Findings from a study showed that with a greater effect of COVID-19, the level of stress increased among nurses, and the level of work performance decreased (Sheikh et al., 2021). Therefore, results showed a significant relationship between stress, induced due to the pandemic, and work performance. The physical and emotional stability of nurses is very crucial for effective patient care. Stress as a result of COVID-19, has not only impacted the work performance but also work satisfaction among nurses, thus placing patient care at risk (Joshua et al., 2021). Nurses working in high risk areas and intensive levels may experience increased stress, which may depress their motivation to work, and consequently impact their performance as well (Ardıç et al., 2022). A study by Ardıç et al. (2022) revealed that perceived work stress resulted in decreased motivation and work performance among nurses. It is known that psychological resilience plays a vital role in the HCPs adaptation to COVID-19, as it acts a shield against work-related stress and depression (Yörük and Güler, 2020). Among the nursing population, psychological resilience is associated with improved general wellbeing, improved work relationships, strong psychological health, and increased work satisfaction (Delgado et al., 2017). A study by Hoşgör and Yaman (2021), aimed to investigate the relationship between psychological resilience and work performance among nurses during the pandemic results revealed a significant positive relationship between the two. Another important aspect among nurses which was greatly affected due to the onset of COVID-19, is self-efficacy. A study by Lim et al. (2022) investigated the moderating effects of burnout on self-efficacy and work performance. Results showed a positive relationship between self-efficacy and work performance, and negative relationship

between self-efficacy and burnout. Also, burnout significantly moderated the relationship between self-efficacy and work performance. Findings concluded a need to prevent burnout and enhance self-efficacy in order to improve the work performance among nurses.

Nurses who provide direct care to patients, particularly to patients in the COVID-19 ward, are at a higher risk of getting infected, which causes further stress, anxiety, and depression (Merlin et al., 2022). A study by Merlin et al. (2022) aimed to understand the relationship between self-reported symptoms of depression, anxiety and stress, and work performance among nurses. Results demonstrated that nurses working in the COVID-19 isolation rooms reported higher stress, anxiety and depression as compared to nurses working in other wards; this had a significant impact on their work performance. The working conditions of the workplace and the patients can jeopardise the mental health of nurses working in COVID-19 wards. This can lead to a negative impact on the quality of working life for nurses. A study by Nikeghbal et al. (2021) reported a significant inverse relationship between the mental workload and quality of life among nurses. A similar study by Maslakci et al. (2021) aimed to understand the effects of fear of COVID-19 on the quality of nurses' work life, and also understand the mediating role of psychological wellbeing in this relationship. Results reported that the fear of COVID-19 negatively impacts the nurses' quality of work life. Also, psychological wellbeing does play a significant mediating role in this relationship; as psychological wellbeing increases, the negative effect of fear of COVID-19 on nurses' quality of work life decreases. During the pandemic, many nurses also suffered from role overload; as a result, role overload may lead to a decline in work performance and engagement (Pourteimour et al., 2021). A study by Zhang et al. (2022) aimed to understand the association between role overload, work engagement, perceived organisational support and aspects of work performance among nurses. Results showed that high levels of perceived organisational support created buffers against the negative effect of role overload on work performance.

4.1.5 The significance of coping strategies

To deal with stress and its consequences on psychological wellbeing and work performance, research has highlighted an urgent need to promote the use of effective coping strategies among nurses (Lim and Bogossian, 2010). This is because coping mechanisms come across

as calming and stabilising agents which help individuals maintain mental peace during stressful events; therefore responses to an event maybe as crucial as the event itself (Ahangarzadeh Rezaei, Shams, and Saghi Zadeh, 2008). Previous studies have highlighted the use of various coping strategies among nurses in order to deal with stress and improve their work performance. These include problem-focussed coping strategies (Umann et al., 2014); seeking social support from colleagues and supervisors (Constable and Russell, 1986; Dick, 1986; Hare, Pratt, and Anderaws, 1988; Paredes, 1982; Abualrab, 2004; Hall, 2007; Drach-Zahavy, 2004); avoidance strategies (Parikh et al., 2004); planful problem solving and self-controlling (Laranjeria, 2011); seeking emotional support from family (Beh and Loo, 2012); monitoring the situation, escape and spiritual coping (Akbar et al., 2016), use of substances (Betke et al., 2021); and accepting the situation (Tesfaye, 2018). A study aimed to understand the associations between stress, coping and presenteeism in nurses. Results reported direct and meaningful associations between stress and low work productivity; most nurses adopted control strategies for coping with stress (Umann et al., 2014). It is widely accepted that social support is one variable that can reduce the negative effects of stress experienced by nurses. Social support from colleagues and supervisors may reduce chronic occupational stress among nurses (Constable and Russell, 1986; Dick, 1986; Hare, Pratt, and Anderaws, 1988; Paredes, 1982). A study showed that perceived social support from co-workers decreased job stress among nurses and enhanced work performance (Abualrab, 2004). A similar study found a positive correlation between perceived support by supervisors and nurses' occupation-related outcomes (Hall, 2007). This was consistent with previous findings which showed supportive management practices are important to achieve high nursing performance (Drach-Zahavy, 2004). A previous study highlighted that problem solving, social support and avoidance were some of the main coping mechanisms adopted by nurses for dealing with stress (Parikh et al., 2004). Similarly, a study demonstrated that coping strategies adopted by nurses, such as seeking social support, planful problem-solving and self-controlling were negatively correlated with perceived work stress (Laranjeira, 2011). In another study, nurses viewed social support as a buffer against the negative impact of stress; they tend to establish a network of friends, family, peers, and seniors to seek emotional support when faced with stressful situations during work. Also, nurses adopt more than one coping mechanism depending on the situation and level of stress at the workplace (Beh and Loo, 2012). Prior literature has demonstrated that poor coping mechanisms may cause impairment in work performance, and nurses who report high levels of stress and burnout may be those who adopt ineffective coping strategies. Therefore, strong associations

between emotion-oriented coping strategies, burnout, and poor work performance has been reported among nurses (Jaracz et al., 2005). A study reported that task-oriented coping was associated with decreased risk of burnout, whereas emotion-oriented coping style with an increased risk of burnout among nurses (Howlett et al., 2015).

4.1.6 The moderating and/or mediating role of EI

EI is a strong determinant of coping strategies (as discussed in Chapter 1), particularly among nurses (Salovey and Mayer, 1990). Within the nursing profession, EI is regarded as a crucial concept (McQueen 2004, Akerjordet and Severinsson 2007, Bulmer-Smith et al. 2009). This is because nurses' ability to understand, regulate and express emotions effectively could result in positive feelings about themselves, increased ability to perform well, increased confidence and reduced stress levels (Görgens-Ekermans and Brand, 2012). In addition, nurses' ability to understand and manage emotions of their patients is an asset in providing care (Evans and Allen, 2002). Also, nurses with higher levels of EI are more able to accept and understand the varied group tasks, remain aligned with the work goals (Billsberry et al., 2005), and sustain the nurse-patient relationships. Given the demanding nature of the healthcare settings, it is reasonable to propose that EI is a crucial concept to consider for improving the overall wellbeing of nurses. This is because the demands in the nursing profession require high levels of EI to keep up with those demands along with patient care delivery (Karimi et al, 2013). Measuring EI among nurses and identifying whether EI can predict what coping strategies one may adopt, could be a protective factor against the effects of stress within the workplace; improving this skill among nurses in addressing stress could consequently lead to enhanced work performance, satisfaction and improved psychological health and wellbeing (Bharwaney, baron McKinlay, 2018; Montes-Berges and Augusto, 2014). Therefore, studying the role of EI and its impact on the stress and work performance of HCPs is a pressing need for the time (Zaman et al., 2021).

Prior research has demonstrated that EI can play a moderating role in the relationship among stress, wellbeing, and work performance among nurses (Karimi et al., 2013; Karimi et al., 2014; Gou et al., 2020; Sharma et al., 2016). A study by Karimi et al. (2013) reported that EI moderated the relationship between perceived stress and wellbeing; in the presence of challenging work demands, individuals with higher scores on EI report reduced stress and

higher levels of wellbeing. Another study by Karimi et al. (2014) reported that EI played a moderating role in the relationship between presenteeism and wellbeing among nurses, which signifies that nurses with higher levels of EI are less prone to presenteeism which consequently leads to improved wellbeing. A more recent study by Gou et al. (2020) reported that EI moderated the relationship between organisational citizenship behaviour and nurse-patient relationship because EI has proved to improve nurses' problem-solving skills (Erkayiran and Demirkiran, 2018) along with interpersonal relationships (Ahmad and Nawaz, 2019). However, interesting results were revealed from a study by Sharma, Dhar, and Tyagi (2016), showing that EI did play a role as a moderator in the relationship between stress and psychological wellbeing, but it strengthened the negative impact of stress on the mental health of nurses. This is because the nursing profession requires immense emotional stability along with the strength to handle difficult situations at work, whilst suppressing their authentic emotions. This suppression of emotions can cause more stress, which can then have an influence on their mental health in the long run (Davis and Humphrey, 2012a, 2012b). Informal relationships tend to develop between nurses and their regular patients. Nurses who are high on EI would, therefore, be more sensitive to their emotions and identify to their patient's suffering, which causes a psychological imbalance for themselves (Davis and Humphrey, 2012a, 2012b). A limited number of studies have also highlighted the role of EI as a mediator in the above relationship (Zhang et al., 2016; Kang and Bae, 2015). A study by Zhang et al. (2016) examined the mediating role of EI in the relationship between psychological distress and negative life events among nursing students. Results showed that EI mediated the relationship between the two variables; students who scored higher on negative life events had lower EI scores causing more psychological distress. Conversely, students with lower negative life events scores had higher scores on EI, and less psychological distress. Findings of this study indicated that EI could buffer the negative effects of stressful events on mental health and wellbeing. Also, a prior study by Kang and Bae (2015) reported that EI mediated the relationship between emotional labour and psychological wellbeing among nurses and highlighted the importance of EI to enhance the psychological wellbeing of nurses. Therefore, EI has been highlighted as a strong determinant factor in equipping one with more effective stress-coping strategies (MacCann et al., 2011) which in turn can lead to increased wellbeing and work performance among nurses (Montes-Berges and Augusto 2007).

4.1.7 Brief rationale

Given that the UK National Health Service (NHS) has been globally recognised as the best healthcare systems in terms of quality of care, cost effective services, and high efficiency; it is important to consider the mental health and psychological wellbeing of those employees who work for the NHS. The mental health and psychological wellbeing of nurses working for the NHS has been a major issue of concern by several stakeholders including the Nursing and Midwifery Council (2021), Royal College of Nursing, and the King's Fund (2022) (Marangozov et al., 2017). Prior literature on NHS nurses have noted that continued exposure to stress does not only impact psychological wellbeing, but also lead to poor work performance, (Sveinsdottir, Biering and Ramel, 2006); long-term sickness absence (Ravalier, 2022); reduced job satisfaction (Joshua et al., 2020); high presenteeism (NHS Staff Survey Coordination Centre, 2019); turnover intentions (Marangozov et al., 2017); reduced quality of patient care (Poghosyan et al., 2010); poor self-rated care (Shantz et al., 2016); and increased errors being made at work (Allan et al., 2014). The previously conducted studies on the effects of stress on work performance among nurses, as mentioned above, have demonstrated a negative linear relationship between the two constructs. Also, research into the impact of stress on work performance among nurses is scarce and mainly derived from quantitative studies. Therefore, the aim of the current study is to understand and provide more clarity on the nature of the stress-performance relationship among nurses who work for the UK NHS by adopting a mixed-methodological (both quantitative and qualitative approaches of data collection and analysis). In addition, given the significance of EI among nurses as mentioned above, there is an urgent need to further explore the role of EI as a moderator and/or a mediator in the relationship between stress and work performance among NHS nurse employees. Furthermore, considering evidence that coping strategies play a crucial role in work stress, wellbeing, and work satisfaction (Jones et al, 1996), there is a need to enhance coping strategies among nurses to minimize psychological distress and improve work performance. Hence, this study will aim to obtain further information regarding what coping strategies are adopted by nurses when dealing with stress.

4.2 Methods

4.2.1 Study design

The study design will involve the recruitment of nurses working in the Nottingham University Hospitals, from three sites: the Queen's Medical Centre, City Hospital and Ropewalk House; and the Nottinghamshire Healthcare Foundation Trust. A mixed methods design will be employed, where the quantitative measures of data collection will include an online survey (JISC Online Survey) involving the completion of 5 questionnaires plus a demographic form. The questionnaires will collect data on stress, work performance, absenteeism/presenteeism, job satisfaction and EI among nurses. Since the study was exploratory, no hypotheses has been given. The questionnaire completion will be followed by semi-structured interviews for those participants who wish to take part. These interviews will collect in-dept information on aspects related to the nurses' stress levels, work performance and satisfaction, coping strategies, and wellbeing support offered by the NHS to help them cope with stress.

4.2.2 Participants

The sample size for the quantitative part of Study 1 was determined using the method of G* power calculation. By using a 5% margin of error (e), 95% confidence level (α), a medium effect size of 0.15 (f^2), and two predictors (stress and emotional intelligence) the minimum sample size detected was 107. Therefore, the sample size for the questionnaire completion was estimated to be $n = 107$ nurses. For the qualitative part of the study (semi-structured interviews), approximately 45 nurses needed to be recruited. This number was estimated according to previous protocols and study protocols employing thematic analysis (Braun and Clarke, 2006). The main eligibility criteria for this study included nurses (between the age of 25-65 years) working in the Nottingham University Hospitals (Queen's Medical Centre, City Hospital, and Ropewalk House), and the Nottinghamshire Healthcare Foundation Trust.

4.2.3 Procedure

After receiving approval from the Research Ethics Committee (REC), the NHS, the HRA, and the RandD department, a study flyer was circulated inviting nurses to participate in this study (please see attached flyer in the appendices, p.402). Due to lockdown restrictions, the researcher could not physically go to the hospitals and display the flyer on noticeboards; rather relied on the gatekeeper and the COMMS team to help with the poster circulation. The data collection commenced in December 2019, over 5 recruitment waves, and ended in March 2022. Interested participants could access the survey link from the flyer itself, which

would direct them to the online platform for questionnaire completion (JISC Online Surveys). A participant information sheet was provided for the in-depth details of the study via the JISC online platform itself. Informed consent was taken from all participants prior to the questionnaire completion; participants also denoted their interest for a follow-up interview by checking the corresponding box within the consent form itself. Participants who agreed to be contacted for an interview were reached out to by the researcher to set up a date/time depending on their convenience. The study flyer also mentioned that a £50 Amazon Gift Voucher will be given to one participants from the lucky draw; no other stipend or convenience allowance was offered.

Given that the study commenced in early March 2020, the global pandemic also started at the same period. Due to the nurses' heavy workload from caring for a large volume of patients at once, this caused some delays in the recruitment of participants. In addition, due to the lockdown situation and researcher's need to follow social distance standards, it was impossible to directly contact participants; the researcher had to rely on the COMMS team for the distribution of the study flyer to encourage participation. Additionally, studies directly related to COVID-19 received higher priority at the same time, while other studies were put on hold. However, the researcher broadened the possibilities for participant recruitment by contacting them via social media sites (such as Facebook and twitter). This made it easier to recruit more people to participate in the study. Additionally, the researcher broadened the pool of participants by hiring nurses from the Nottinghamshire Healthcare Foundation Trust.

4.2.4 Measures

Quantitative Part

- i. Demographic Form – Demographic information was collected on age, gender, number of years nursing, nursing certification, sector/unit of service, length of employment in hospital/unit, work status, marital status, no of children, and ethnicity
- ii. Nursing Stress Scale (NSS) - The NSS is a 34-item scale which have been categorised into seven areas of work-related stress (Factor 1=7 items, Factor 2=5 items, Factor 3=3 items, Factor 4=3 items, Factor 5=5 items, Factor 6=6 items, Factor 7=5 items) measuring the “Physical Environment” (workload); the “Psychological Environment”

(death and suffering, lack of staff support, inadequate training, and uncertainty about treatments) and the “Social Environment” (conflict with physicians and other nurses) (Escribà et al., 1999). This questionnaire is based on a 4-point Likert scale (Never=0, Sometimes=1, Frequently=2, Very Frequently=3). The sum of scores obtained range from 0=102, where a higher score indicates higher levels of stress. This instrument has demonstrated a Cronbach’s alpha coefficient of 0.92 for the total scale (Escribà et al., 1999).

- iii. Nurse Work Functioning Questionnaire (NWFQ) - The NWFQ is a 50-item self-report questionnaire measuring impaired work functioning among nurses and allied health professionals. It consists of seven sub scales, namely, “Cognitive Aspects of Task Execution and General Incidents”, “Impaired Decision-Making”, “Causing Incidents at Work”. “Avoidance Behaviour”. “Conflicts and Annoyances with Colleagues”. “Impaired Contact with Patients and their Family”, “Lack of Energy and Motivation”. The format of responses vary between 5-category and 7-category scales; the responses vary between Likert-type scales (0= “totally disagree” to 6= “totally agree”, 0= “disagree” to 4= “agree”, 0= “no difficulty” to 6= “great difficulty”), absolute frequency categories (0= “not once” to 6= “in general more than once”), and relative frequency category (0= “almost never” to 6= “almost always” and 0= “almost never” to 4= “almost always”). The sum of scores ranges from 0-100 with higher scores indicating higher impaired work performance. All sub-scales of this instruments have good or acceptable internal consistency, as assessed by Cronbach’s Alpha (α), ranging between 0.70 to 0.94 (Gärtner et al., 2011)
- iv. Work Productivity and Activity Impairment: General Health (WPAI:GH) - The WPAI: GH is an instrument to measure work impairments among participants. It consists of 6 questions (1= “currently employed”, 2= “hours missed due to health issues”, 3= “hours missed due to other reasons”, 4= “hours actually worked”, 5= “degree of health affecting productivity while working”, 6= “degree of health affecting productivity in regular activities other than work”). Four main outcomes are generated from this instrument, namely, “percent of work time miseducating due to health” for currently employed participants, “percent impairment while working due to health” for those who worked in the last 7 days, “percent overall work impairment

due to health” for currently employed participants, “percent activity impairment due to health” for all respondents (Zhang et al., 2010). The internal consistency of this questionnaire, as assessed by Cronbach’s Alpha (α) is 0.74 (Ciconelli et al., 2006).

- v. Job Satisfaction Survey (JSS) – The JSS is a 36-item scale measuring 9 facets of job satisfaction (Pay, Promotion, Supervision, Fringe Benefits, Contingent Rewards, Operating Conditions, Coworkers, Nature of Work and Communication) along with the total satisfaction score ranging between 36 to 216; higher score represents higher job satisfaction (Spector, 1997). The reverse score items include 2, 4, 6, 8, 10, 12, 14, 16, 18, 19, 21, 23, 24, 26, 29, 31, 32, 34, 36. This instrument is based on a 6-point scale (1= “disagree very much” to 6= “agree very much”); it has demonstrated a good internal consistency as assessed by Cronbach’s Alpha (α) of 0.91 (van Saane et al., 2003)

- vi. The Schutte Self-Report EI Test (SSEIT) – The SSEIT is a self-report questionnaire measuring four factors of EI (Understanding One’s Emotions, Understanding Other’s Emotions, Regulation of Emotions and Utilization of Emotions). It is a 33-item instrument where the responses are scored on a 5-point Likert scale (1= “strongly disagree” to 5= “strongly agree”). The reverse score items include 5, 28 and 33. This instrument yields a total score ranging from 33 to 165 where higher scores indicate higher levels of EI; it has shown a good internal consistency as assessed by Cronbach’s Alpha (α) of 0.90 (Schutte et al., 1998).

Qualitative part

Interview: The semi-structured interview guide consisted of 10 questions, which aimed to collect in-depth information from nurses on aspects related to stress levels, work performance and satisfaction, coping strategies, and wellbeing interventions offered by the NHS to help them cope with stress. Given the current circumstances of COVID-19, interviews were held over Microsoft Teams, depending on the participant’s convenience. The interview commenced with building a rapport between the researcher and participants, to ensure they feel comfortable. The structure of the interview included some open-ended questions to begin with, e.g., “what is your experience of being a nurse”, followed by more close-ended questions, e.g.,

“how does stress affect your wellbeing” (please see the complete “interview guide” in the Appendices, p.403). Each interview lasted between 20-30 minutes; audio/videos were transcribed within MS Teams itself to generate the transcriptions. It was explained to the participants that entry into the study was entirely voluntary and that participation in the first part of the study (questionnaires) will not necessitate their participation in the second part of the study (interviews). Participants were also ensured that they could withdraw at any point, or not feel obligated to answer any questions if they were not comfortable doing so. In case any participant felt upset during the interview, the researcher would stop the interview and suggest that participants see their GP.

4.2.5 Data analysis

For the quantitative part of Study 1, raw scores from the questionnaire data were tabulated and entered into a statistical package (SPSS version 28). The data was screened for any missing values and outliers. Descriptive statistics in terms of nurses’ age, gender, marital status, ethnicity, work sector/unit, and years of nursing experience were highlighted. Regression analysis was adopted to determine the relationship between stress, work performance, absenteeism, work satisfaction, and EI among nurses. Furthermore, hierarchical multiple regression was used to determine the moderating and mediating role of EI between stress and work performance. For the qualitative data (semi-structured interviews), the approach of thematic analysis was utilized. Following the 6-step process of thematic analysis by Braun and Clarke (2006), transcripts were generated and coded in the NVivo software (Version 12); after which the relevant themes and sub-themes were formulated.

4.3 Results

4.3.1 Quantitative results

4.3.1.1 Overview

This section will provide a detailed analysis of the results obtained for the quantitative part of Study 1. As mentioned, 5 questionnaires were administered to nurses working for the NHS which measured stress, work performance, absenteeism, work satisfaction, and EI. The raw data was extracted from JISC online surveys into excel sheet where scores were computed. Data was screened for missing values and reverse scores were obtained for the Job

Satisfaction Survey on items 2, 4, 6, 8, 10, 12, 14, 16, 18, 19, 21, 23, 24, 26, 29, 31, 32, 34, 36; for the Schutte Self Report EI Test, reverse scores were obtained for items 5, 28, and 33. A total of n= 134 participants completed the survey over several recruitment waves (n=5) which commenced in December 2019 and ended by March 2022. The respondents were 90.3% female nurses (n=121) and 9.7% male nurses (n=13). On the other hand, n=33 nurses responded and took part in the interview. The outcomes produced will highlight the following:

- (1) *The relationship between stress and aspects of work performance.*
 - (a) *The relationship between stress and work satisfaction*
 - (b) *The relationship between stress and absenteeism*
- (2) The role of EI as a moderator and/or mediator in the relationship between stress and work performance.
 - (a) *The role of EI as a moderator in the stress-performance relationship among nurses.*
 - (b) *The role of EI as a mediator in the stress-performance relationship among nurses.*

4.3.1.2 Demographic details

The table below highlights the demographic characteristics of the participants (nurses working in the NHS) including their age, gender, work-status, marital status, and ethnicity (n=134).

Table 3: Demographic details

Demographics	N	Percentage	Mean	SD
<i>Age</i>	134		40.7	10.26
<i>Gender</i>				
Female	121	90.3%		
Male	13	9.7%		

Work-Status

Full-Time	94	70.1%
Part-Time	34	25.4%
Agency	1	0.7%

Marital Status

Married	67	50%
Divorced	8	6%
In a Relationship	35	26.1%
Single	19	14.2%

Ethnicity

White, Not Hispanic	115	85.8%
Hispanic	1	0.7%
White, Hispanic	3	2.2%
Black, Not Hispanic	5	3.7%
Hispanic	2	1.5%
Asian	2	1.5%
Filipino	2	1.5%
Other		
Don't Know		

4.3.1.3 Descriptive statistics

The table below highlights the descriptive statistics of all questionnaires administered to nurses (n=134) depicting the *Mean, Standard Deviation (SD), Variance, and Range*.

Table 4: Descriptive Statistics

Questionnaire	Mean	Std. Deviation	Skewness	Kurtosis
Stress (Nursing Stress Scale)	40.99	13.96	-.204	-.315

Work Performance (Nurse Work Functioning Questionnaire)	176.63	95.29	.960	2.186
Absenteeism (Work Productivity and Activity Impairment: General Health)				
<i>Outcome 1 (Work-Time Missed due to Health)</i>	3.65	13.81	4.910	26.884
<i>Outcome 2 (Impairment while Working due to Health)</i>	24.10	25.70	.797	-.544
<i>Outcome 3 (Overall Work Impairment due to Health)</i>	25.59	27.22	-2.001	55.640
<i>Outcome 4 (Activity Impairment due to Health)</i>	29.33	29.23	.588	-.988
Work Satisfaction (Job Satisfaction Scale)	131.87	24.124	.280	.288
EI (Schutte Self-Report EI Test)	121.72	13.5	-.150	.409

4.3.1.4 Normality of data

To analyze the distribution of the data, the Kolmogorov-Smirnov test was used. The reason for choosing this test is due to a large sample size (n=134). Results on the variables were noted: stress = .060, $p > .200$; work performance = .077, $p > .049$; outcome 1 (work-time missed due to health) = .492, $p < 0.001$; outcome 2 (impairment at work) = .200, $p < 0.001$; outcome 3 (overall work impairment) = .463, $p < 0.001$; outcome 4 (activity impairment) =

.193, $p < 0.001$; work satisfaction = .058, $p > .200$; and EI = .070, $p > .200$. The results reported indicate that data for variables (stress, work performance, work satisfaction, and emotional intelligence) is normally distributed; barring the four outcomes of the absenteeism/presenteeism scale. Based on this outcome, also bearing in mind the inspection of q-q plots and histograms (see appendices, figures 22-29, p.404), simple linear regression model was adopted to assess the effect of stress on aspects of work performance.

4.3.1.5 Regression analysis between stress, work performance, work satisfaction, and absenteeism/presenteeism

Relationship between stress and work performance among nurses: As mentioned in the description of NSS (stress) scale above, the total score ranges between 0 – 103 with higher scores indicating higher stress levels. The results of this study indicated that moderate levels of stress was reported among nurses depicted in terms of average raw score ($M = 40.99$, $SD = 13.96$), with maximum stress depicted in “workload” ($M = 11.6$, $SD = 2.81$); followed by “death and dying” ($M = 7.99$, $SD = 4.36$); “conflict with physician” ($M = 5.21$, $SD = 3.19$); “uncertainty concerning treatment” ($M = 5.01$, $SD = 3.53$); “conflict with other nurses” ($M = 4.69$, $SD = 3.06$); “inadequate preparation” ($M = 3.42$, $SD = 2.12$); and “lack of staff support” ($M = 3.07$, $SD = 2.42$). With respect to work performance, the scores of each sub-scale (seven sub-scales in total) ranges between 0 – 100, with higher scores indicating higher impaired functioning. The average score on the final total score reported was $M = 176.63$ ($SD = 95.29$) indicating mild to moderate impairment in work performance, with “cognitive aspects” as the highest area of performance affected ($M = 36.12$, $SD = 21.23$); followed by “lack of energy and motivation” ($M = 34.07$, $SD = 26.78$); “conflicts and irritations with colleagues” ($M = 31.03$, $SD = 22.93$); “impaired decision-making” ($M = 24.99$, $SD = 26.75$); “impaired contacts with patients and their families” ($M = 21.91$, $SD = 18.82$); “avoidance behavior” ($M = 20.49$, $SD = 16.54$); and “causing incidents at work” ($M = 7.99$, $SD = 11.06$). Simple linear regression was conducted to understand whether the predictor variable (stress) had an impact on the dependent variable (work performance) among nurses. The fitted regression model was: $\text{Work Performance} = 26.123 + 3.672 * (\text{Stress})$. A regression equation was found [$F(1, 132) = 54.332$, $p < 0.001$], with an R-Square of 0.292. The value of R-Square showed that the effect of stress on impaired work performance is explained by 29.2%. The results indicated that stress had a significant positive impact on impaired work performance among nurses ($\beta = 3.672$, $p < 0.001$).

Figure 7: Model Summary

Regression Statistics	
R	0.540
R Square	0.292
Adjusted R Square	0.286
Standard Error	80.514
Observations	134

Predictors: Stress (NSS Total)

Dependent Variable: Work Performance (NWFQ Total)

ANOVA					
	<i>Sum of Squares</i>	<i>DF</i>	<i>Mean Square</i>	<i>F</i>	<i>Significance</i>
Regression	352210.781	1	352210.781	54.332	0.001
Residual	855704.233	132	6482.608		
Total	1207915.01	133			

Predictors: Stress (NSS Total)

Dependent Variable: Work Performance (NWFQ Total)

Coefficients							
	<i>UnStd Coefficient</i>	<i>Standard Error</i>	<i>Std Coefficient Beta</i>	<i>T Stat</i>	<i>P-Value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
(Constant)	26.123	21.511		1.211	0.228	-16.546	68.793
Stress Total	3.672	0.498	0.540	7.371	0.001	2.686	4.675

Dependent Variable: Work Performance (NWFQ Total)

Relationship between stress and work satisfaction among nurses: Given that the total score ranges between 36 – 216, participants reported moderate levels of work satisfaction depicted in average scores (M = 131.87, SD= 24.124). The highest area of satisfaction depicted was “supervision” (M = 19.50, SD = 4.89); followed by “nature of work” (M = 17.97, SD = 4.26);

“co-workers” (M = 16.71, SD = 3.75); “communication” (M = 15.41, SD = 3.68); “promotion” (M = 13.99, SD = 4.08); “contingent awards” (M = 13.49, SD = 4.63); “fringe benefits” (M = 11.9, SD = 4.39); and “operating conditions” (M = 11.63, SD = 3.63). The area of least satisfaction reported by the participants was “pay” (M = 11.28, SD = 4.84). Simple linear regression was conducted to understand whether the predictor variable (stress) had an impact on the dependent variable (work satisfaction) among nurses. The fitted regression model was: Work Satisfaction = 163.902 + (-0.781)* (Stress). A regression equation was found [F (1, 132) = 34.264, p < 0.001], with an R-Square of 0.200. The value of R- Square showed that the effect of stress on work satisfaction can be explained by 20%. The results indicated that stress had a negative impact on the work satisfaction among nurses ($\beta = - 0.781, p < 0.001$).

Figure 8: Model Summary

Regression Statistics	
R	0.454
R Square	0.206
Adjusted R Square	0.200
Standard Error	21.576
Observations	134
<i>Predictors: Stress (NSS Total)</i>	
<i>Dependent Variable: Work Satisfaction (JSS Total)</i>	

ANOVA					
	<i>Sum of Squares</i>	<i>DF</i>	<i>Mean Square</i>	<i>F</i>	<i>Significance</i>
Regression	15950.423	1	15950.423	34.264	0.001
Residual	61448.421	132	465.518		
Total	77398.843	133			
<i>Predictors: Stress (NSS Total)</i>					
<i>Dependent Variable: Work Satisfaction (JSS Total)</i>					

Coefficients

	<i>Unstd. Coefficient</i>	<i>Std Error</i>	<i>Std Coefficient Beta</i>	<i>T Stat</i>	<i>P-Value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
(Constant)	163.902	5.781		28.354	0.001	152.468	175.337
Stress Total	-0.781	0.133	-0.454	-5.854	0.001	-1.045	-0.517

Dependent Variable: Work Satisfaction (JSS Total)

Relationship between stress and absenteeism and presenteeism among nurses: Out of 134 participants, n=128 (95.5%) participants were working for pay whereas n=4 (3%) were not working for pay in the NHS. N=15 participants reported missing work due to health-related problems, accounting for 11% of absenteeism. The average working hours of the participants reported was 35.10 (SD=16.18). Regarding presenteeism, n= 67 (50%) participants reported mild impairment at work due to health issues; n= 20 (14.9%) participants reported moderate to high impairment at work; and n=44 (32.8%) participants reported no impairment at work. Also, n=87 participants (65%) reported impairment in overall daily activities outside of work, whereas n=47 (35%) reported no impairment in daily regular activities. Simple linear regression was conducted to understand whether the predictor variable (stress) had an impact on the dependent variable (absenteeism/presenteeism) among nurses. The results reported were insignificant, i.e., there was no significant relationship between stress and absenteeism and/or presenteeism among nurses. However, a significant relationship was reported between stress and overall impairment in daily activities (outside of work). The fitted regression model was: Output 4 = 0.140 + (0.004)* (Stress). A regression equation was found [F (1, 132) = 4.356, p < 0.039], with an R-Square of 0.32. The value of R- Square showed that the effect of stress on overall activity impairment can be explained by 32%. The results noted that stress had a positive impact on the overall activity impairment (output 4) among nurses ($\beta=0.004$, p < 0.039).

Figure 9: The figure below highlights the significance level of each of the four outputs of absenteeism and presenteeism in relation with stress.

Impact of Stress	Significance Level			
	Work-Time Missed (Outcome 1)	Impairment while Working (Outcome 2)	Overall Work Impairment (Outcome 3)	Activity Impairment (Outcome 4)

	P > 0.801	P > 0.111	P > 0.184	P < 0.039
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Figure 10: Model Summary

Regression Statistics	
R	0.179
R Square	0.032
Adjusted R Square	0.025
Standard Error	0.288
Observations	134

Predictors: Stress (NSS Total)

Dependent Variable: Overall Activity Impairment (Outcome 4)

ANOVA					
	Sum of Squares	DF	Mean Square	F	Significance
Regression	0.363	1	0.363	4.356	p>0.039
Residual	11.001	132	0.083		
Total	11.364	133			

Predictors: Stress (NSS Total)

Dependent Variable: Overall Activity Impairment (Outcome 4)

Coefficients							
	Unstd. Coefficient	Std Error	Std Coefficient Beta	T Stat	P-Value	Lower 95%	Upper 95%
(Constant)	0.140	0.077		1.816	0.072	- 0.013	0.293
Stress Total	0.004	0.002	0.179	2.087	0.039	0.000	0.007

Dependent Variable: Overall Activity Impairment (Outcome 4)

4.3.1.6 The role of EI as a moderator and/or mediator in the relationship between stress and work performance

Moderation: The role of EI as a moderator in the relationship between stress and work performance among nurses: The total score, as mentioned above, ranges between 33 – 165 wherein higher scores indicate higher EI. The average score obtained by participants is 121.72 (SD = 13.5), indicating moderate levels of EI. Highest scores were obtained on

“perception of emotion” (M = 40.67, SD = 5.13); followed by “managing one’s own emotions” (M = 20.13, SD = 3.86); “managing others’ emotions (M = 19.66, SD = 2.55); and finally “utilization of emotions” (M = 15.30, SD = 2.22). In order to understand the role of EI as a moderator (W) in the relationship between stress (X) and work performance (Y), the method of hierarchical multiple regression analysis was adopted. This method was used as it enables the assessment of contribution of different independent variables (stress and EI), for determining the dependent variable (work performance). In the first step, two variables were included (stress and EI), which accounted for a significant amount of variance in the work performance, $R\text{-Square} = 0.350$, $F(2,131) = 35.287$, $p < 0.001$. In order to avoid to problem of high multicollinearity, an interaction term between the two variables (stress and EI) was created. In the next step, this interaction term between stress and EI was then added to the regression model. Results reported that the interaction variable (INT) was non-significant; ($\beta = -11.534$, $p > 0.066$). The findings, therefore, indicate that EI **does not** play a moderating role in the relationship between stress and work performance among nurses.

Figure 11: Model illustration of EI (w) affecting the relationship between stress (x) and work performance (y)

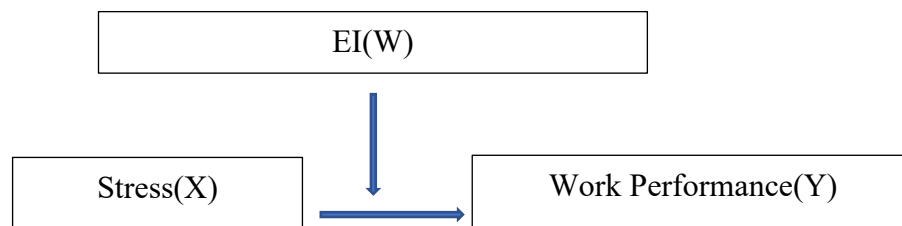


Figure 12: Model Summary

Model Summary				
Mod	R	Adjusted R	Std. Error	
el	R	Square	Square	of the Estimate
1	.592 ^a	.350	.340	77.41063
2	.606 ^b	.367	.352	76.70096

a. Predictors: (Constant), EI, STRESS

b. Predictors: (Constant), EI, STRESS, INT

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	422909.829	2	211454.915	35.287	<.001 ^b
	Residual	785005.185	131	5992.406		
	Total	1207915.014	133			
2	Regression	443120.174	3	147706.725	25.107	<.001 ^c
	Residual	764794.840	130	5883.037		
	Total	1207915.014	133			

a. Dependent Variable: PERFORM

b. Predictors: (Constant), EI, STRESS

c. Predictors: (Constant), EI, STRESS, INT

Coefficients							
	Unstd. Coefficient	Std Error	Std Coefficient Beta	T Stat	P-Value	Lower 95%	Upper 95%
(Constant)	258.810	68.602		3.761	0.001	122.308	393.749
Stress	3.335	0.485	0.490	6.876	0.001	2.375	4.294
EI	- 1.811	0.505	- 0.257	- 3.589	0.001	- 2. 810	-0.813
Interaction	- 11.534	6.223	- 0.130	- 1.853	0.066.	-23.845	0. 777

Dependent Variable: Work Performance

Mediation: The role of EI as a mediator in the relationship between stress and work performance among nurses:

To understand the role of EI as a mediator (M) in the relationship between stress (X) and work performance (Y), mediation analysis was conducted using PROCESS Version 4.1 (Andrew F. Hayes). Results revealed that the total effect of stress (x) on work performance (y), ignoring the mediator, was positive and significant (B= 3.672, se= 0.498, t= 7.371, p < 0.001). With the inclusion of the mediating variable (EI), the direct effect of stress on work performance was also significant (B= 3.323, se= 0.490, t= 6.788, p<0.001). In addition, the indirect effect of stress on work performance, through EI, was found significant (b= 0.349; 95% CI= 0.044, 0.748). Given that the total effect and the indirect effect were both significant, it can be said that EI does play a **partial** mediating role in the relationship between stress and work performance among nurses.

Figure 13: Model illustration of EI (m) as a mediator in the relationship between stress (x)

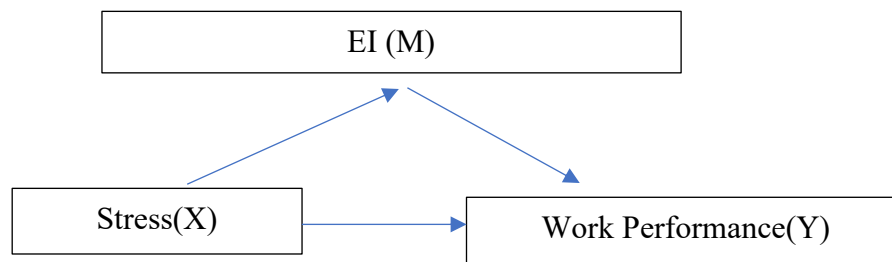


Figure 14: Model Summary

Total, Direct and Indirect Effects of Stress (X) on Work Performance (Y)						
	Effect	se	t	p	LLCI	ULCI
<i>Total Effect of X on Y</i>	3.672	0.498	7.371	0.000	2.686	4.657
<i>Direct Effect of X on Y</i>						
Y	3.323	0.490	6.788	0.000	2.355	4.291
<i>Indirect Effect of X on Y</i>						
	Effect	BootSE	BootLLCI	BootULCI		
EI	0.349	0.180	0.044	0.748		

4.3.2 Qualitative results

4.3.2.1 Overview

This section will highlight the findings of the semi-structured interviews conducted among nurses working in the NHS. The purpose of conducting interviews were to gain an in-depth perspective of the various challenges and stressors which nurses are exposed to in their day-to-day lives; how this stress has impacted their wellbeing and work performance; the coping strategies adopted by nurses in order to overcome or deal with such stressors; and their opinions regarding the wellbeing interventions and other forms of support offered to them by the NHS. The method of thematic analysis was adopted to analyse interview data. The reason for adopting this method for analysis has been mentioned in the ‘Methodology’ Chapter (Chapter 3) of this thesis. Interview data was gathered from 31 nurses working in the NHS in order to address the issues mentioned; leading to the generation of themes (and related sub-themes) pertinent to the subject matter.

4.3.2.2 Demographic details

Thirty-one (n=31) semi-structured interviews were conducted among nurses working in the NHS, until thematic saturation was achieved. Out of 31 participants, n=7 participants worked part-time and n=24 were full-time nurses. The participants interviewed comprised of n=4 male nurses and n=27 female nurses in the age range of 24-63 (M=39.93; SD=12.09). The years of nursing experience ranged between 1 and 36 years. In terms of sector/unit of service, n = 5 participants are based in general nursing; n = 4 in surgery; n = 2 in emergency; n = 2 in dermatology; n = 2 in HCOP; n = 2 in medicine; n = 2 in clinical support’ n = 1 in Ward D35; n = 1 in family health; n = 1 in stroke; n = 1 in ambulatory care; n = 1 in urology triage; n = 1 in oncology; n = 1 in renal; n = 1 in elderly healthcare; n = 1 in ophthalmic theatres; n = 1 in adult mental health crisis; n = 1 in Children’s’ care; and n = 1 in CAMHS.

Table 5: Demographic characteristics of nurses interviewed (n=31)

Participant	Age (Years)	Gender	Nursing Experience (Years)	Work- Status	Sector
1	47	Female	21	Full-Time	Nursing

2	25	Female	3.5	Full-Time	Corporate/Clinical Support
3	42	Female	10	Full-Time	Cardiology/Medicine
4	24	Female	2	Full-Time	Vascular Surgery
5	27	Female	6	Full-Time	Ward D35
6	27	Female	5	Part-Time	Family Health
7	53	Female	35	Full-Time	Nursing
8	24	Female	2	Full-Time	HCOP
9	32	Male	5	Full-Time	HCOP
10	60	Female	36	Full-Time	Ambulatory Care
11	32	Female	4	Full-Time	Dermatology
12	45	Female	10	Part-Time	Dermatology
13	27	Female	5	Full-Time	Stroke Nursing
14	44	Female	24	Part-Time	Clinical Support
15	31	Female	5	Full-Time	Acute General Surgery
16	32	Female	9	Full-Time	Emergency
17	56	Female	6	Part-Time	Nursing
18	53	Female		Full-Time	Urology Triage
19	44	Female	17	Part-Time	Oxton Unit
20	31	Female	3	Full-Time	Nursing
21	63	Male	34	Part-Time	Renal
22	47	Female	9	Part-Time	Oncology
23	24	Female	3	Full-Time	Emergency Surgery
24	33	Female	6	Full-Time	Elderly Healthcare
25	31	Female	8	Full-Time	Surgery
26	60	Female	30	Full-Time	CAMHS
27	47	Female	26	Full-Time	Children
28	49	Female	14	Full-Time	Nursing
29	53	Male	18	Full-Time	Ophthalmic Theatres
30	40	Female		Full-Time	Adult Mental Health
31	35	Male	1	Full-Time	Acute Medicine

4.3.2.3 Thematic analysis findings

The themes emerging from interviews were divided into six broad categories, which were further divided into relevant sub-themes. The first category was divided into two sub-categories informing the stressors participants experienced in their nursing profession; the first sub-category highlighted stressors experienced before the global pandemic commenced (five themes and related sub-themes), and the second sub-category highlighted stressors experienced during the global pandemic (three themes and related sub-themes). The second category shed light on the impact of stress on participants' wellbeing (two themes and related sub-themes). The third category noted the impact of stress on work performance among participants (four themes and related sub-themes). The fourth category explained the various coping strategies adopted by participants in order to tackle the daily stressors (two themes and related sub-themes). Category five highlighted participants' thoughts and opinions regarding the NHS work environment (three themes and related sub-themes). Finally, category 6 pointed out participants' perceptions regarding the wellbeing services offered to them by the NHS (four themes and related sub-themes). By following the streamline process, certain themes noted were not deemed as important; hence they were omitted in order to have fewer and concise themes that are more related to the research question (please find attached codebook in the appendices, p.412).

Table 6: Overarching themes and related sub-themes of the total sample (n=31) interviewed.

Categories and Sub-Categories	Themes	Sub-Themes
Category 1: Stressors and/or challenges encountered on a daily basis	Theme 1: High workload on a daily basis	Sub-Theme 1.1: Increased pressure due to shortage of staff and having to deal with large number of patients
Sub-Category 1.1 : Stressors experienced		Sub-Theme 1.2: Having to provide training and support to junior staff

before the global

pandemic of COVID-19

Theme 2: Having to deal with uncertainty regarding each working day

Theme 3: Problems experienced due to patient demands

Sub-Theme 3.1 : The challenging implications of dealing with patients and their relatives

Sub-Theme 3.2: Lack of space in the hospital due to overcrowding

Theme 4: Experiencing bullying at work from peers or seniors

Theme 5: The constant feeling of needing to do more to cater to patients' needs

Sub-Category 1.2:
Stressors experienced during the global pandemic of COVID-19

Theme 6: Experiencing extreme shortage of staff

Sub-Theme 6.1: Facing shortage of staff due to staff falling sick

Sub-Theme 6.2: Staff getting redeployed to other departments

Theme 7: The changing nature of work processes and

Sub-Theme 7.1: Stress of having to keep up with

	environment during the pandemic	<p>changing rules and regulations during work</p> <p>Sub-Theme 7.2: Having the fear of infecting patients and families with the virus</p> <p>Sub-Theme 7.3: Additional pressure of keeping up with patient demands during the crisis</p>
	Theme 8: Experiencing higher workload during the pandemic as compared to before	
Category 2: Perceived impact of stress on overall wellbeing	Theme 9 : Work-related pressures had an adverse impact on mood and stress levels	<p>Sub-Theme 9.1 : Mood on a daily basis was adversely affected by work stressors</p> <p>Sub-Theme 9.2: Experiencing lack of motivation and difficulty going back to work owing to stress</p> <p>Sub-Theme 9.3: Work stress reaching a clinical threshold of depression and anxiety</p>
	Theme 10: Notable lifestyle changes were experienced as a result of high stress levels at work	Sub-Theme 10.1: Sleep difficulties due to constant exposure to stressors

		Sub-Theme 10.2: Facing changes in appetite due to constant worrying
		Sub-Theme 10.3: Bringing work back home affecting one's personal life
Category 3: Perceived impact of stress on work performance	Theme 11: Nurses' cognitive abilities were compromised due to stress at work	Sub-Theme 11.1: Struggling to concentrate on multiple tasks during work
		Sub-Theme 11.2: Having a short attention span leading to errors at work
		Sub-Theme 11.3: Feeling mentally drained as a result of stress due to high workload
		Sub-Theme 11.4: Facing difficulties in carrying out certain tasks and duties
	Theme 12: Increased stress levels were predominantly associated with perceived low self-efficacy	Sub-Theme 12.1: Feeling incapable of displaying appropriate compassion towards patients
		Sub-Theme 12.2: Not prioritising effectively due to challenges at work

Sub-Theme 12.3: Feeling less confident in being capable of performing tasks to perfection

Theme 13: Stress served as a facilitator for higher levels of work performance in nurses who believed they had good coping potential

Sub-Theme 14.1: Comparing oneself to other colleagues created more tension in peer relationships at work

Theme 14: Stress influenced adversely the relationship with colleagues at work

Sub-Theme 14.2: Feelings of frustration toward colleagues were commonly experienced

Category 4: Coping strategies adopted for dealing with stress

Theme 15: Problem-focused and avoidance coping in dealing with stress at work

Sub-Theme 15.1: Seeking support from colleagues in handling work stressors, particularly in dealing with patients and patients' families and handling conflicts

Sub-Theme 15.2: Trying to show empathy and resolve conflict with patients and patients' families

Sub-Theme 15.3: Offering full support to patients and their families

Sub-Theme 15.4: Having regular breaks in order to deal with a hectic work environment

Sub-Theme 15.5: Coming up with a day planner to organise the upcoming work challenges

Sub-Theme 15.6: Avoiding confronting conflict with colleagues or taking a step back in order to understand their perspective

Theme 16: Coping approaches adopted outside the workplace in order to alleviate work-induced stress

Sub-Theme 16.1: Engaging in various forms of physical activity to reduce stress levels

Sub-Theme 16.2: Finding joy in leisure activities

Sub-Theme 16.3: Engaging in relaxation techniques to wind down after a stressful work day

Sub-Theme 16.4: Seeking social support from one's personal/close environment

Sub-Theme 16.5: Seeking professional support for dealing with work as well as personal issues causing stress

Category 5: Perceptions regarding the NHS work environment

Theme 17: Despite the challenges, the majority of nurses considered their overall experience in their job satisfactory and rewarding

Theme 18: Organisational support by the NHS environment was perceived to be inadequate

Theme 19: Recommendations offered for improving the NHS work environment

Sub-Theme 19.1: The need for better communication, awareness and engagement by the higher management

Sub-Theme 19.2: The need for more resources to enable smooth organisational functioning

Category 6: Perceptions regarding the NHS

Theme 20 a. : Half of the nurses were aware of different

wellbeing support
provision

interventions available at work
but did not feel the need to
take them up

Theme 20 b. : The other half
of the nurses took up
interventions at work in order
to deal with stress

Theme 21: Nurses felt
comfortable approaching their
line managers for discussing
wellbeing issues

Theme 22: Accessibility issues
were reported as major barriers
to taking up wellbeing
interventions at work

Sub-Theme 22.1: Being
unable to make time for
taking up any wellbeing
intervention at work

Sub-Theme 22.2: Not
knowing how to access
certain interventions or being
hindered by long waiting
lists

Sub-Theme 22.3: Lack of
awareness regarding the
availability of the various
wellbeing interventions
offered at work while
support resources were

generally perceived to be
lacking

Category 1 : Stressors and/or challenges encountered on a daily basis

Sub-Category 1.1 : Stressors experienced before the global pandemic of COVID-19

Theme 1: High workload on a daily basis

Nurses reported stress due to heavy workload and delivering several tasks within a short frame of time. Some reported being unable to take regular breaks given the lack of time and managing everything from all directions.

Sub-Theme 1.1: Increased pressure due to shortage of staff and having to deal with large number of patients

Issues related to lack staff support was reported as one of the major stressors. Nurses found it difficult to cope with large number of patients with less staff on the ward. Other issues reported with regard to staffing issues included last minute sickness absences, and more number of nurses going on maternity leaves without any replacements.

“Um, I think the main stress has been lack of staffing. Um, that's probably the thing that I find most stressful because when you've not got enough staff, it puts quite a lot of time pressure on you, um, to get everything done” P2, Female, 25 years old

“So although we might have five nurses on a shift, and that actually is technically we're up to our full staffing that we're supposed to be at the moment, you know, um, we're still rushing around and, um, we've got loads of IVs and very sick patients and things like that. Um, we're just expected to look after, because we're the specialist unit and actually. If you really consented the safety of the patients and the acuity of them, we would require more staff” P6, Female, 27 years old

Sub-Theme 1.2: Having to provide training and support to junior staff

Having to coordinate everything from all directions and also undertaking the responsibility of training new staff members along with supporting other staff members was additional stressor experienced by nurses.

“So, um, especially as a Band six, where I'm coordinating everything. Just having tabs on what everyone is doing all the time. If you've got people that are confident in what they're doing, you know, you can leave them to it. But if you've got quite junior staff or new starters that need a lot of support, you've kind of got to think what I need to do and what they need to do, make sure they're okay. Constantly check that they're okay. Which is quite stressful” ”
P15, Female, 31 years old

Theme 2: Having to deal with uncertainty regarding each working day

Dealing with uncertainty during work is another major stressor experienced by nurses. This uncertainty revolved around not knowing what the next working day would look like; staff were not prepared of where they would be placed or what kind of patients they will be dealing with.

“And that used to be one of the biggest stresses. Like where will I be working today? Would I be working where I want to work? And then when you found out you weren't moving, is that sort of sigh of relief. Okay. Get on with my day now and certain isn't it. Then that uncertainty can be very frustrating, very frustrated” ”
P14, Female, 44 years old

“Um, you know, pushed us well outside of our comfort zone. We don't know where we're working. Um, because obviously I work with in critical care. So we don't know where we're working from one day to the next, and that is a little bit worrying. Um, because when you work with people, you know who they are, you know, their strengths and weaknesses, they know your strengths and weaknesses, but when you work in an area that they're not used to you, um, and you're not used to them, it's quite a bit of an unknown, you know? Yeah. So that, that has caused some stress”
P17, Female, 56 years old

Theme 3: Problems experienced due to patient demands

Sub-Theme 3.1 : The challenging implications of dealing with patients and their relatives

Having to deal with patients and their families can take a toll on nurses' mental health. Stress was reported in terms of dealing with patients who are rude, death of patients one has been looking after, taking care of severely ill patients whilst dealing with their relatives, or even getting emotionally attached to patients.

“In my ward area, because it's a very specialist area, children's cancer, there's a lot of pressures. And, you know, we're giving chemotherapy to children, blood transfusions, loads of really high risk, um, procedures and things like that. Um, So there's a lot of, I mean, obviously I'm not saying that not all nurses have a lot of responsibility on their heads, but, um, there's just, there's a lot of responsibility” ” P6, Female, 27 years old

“So on the previous board that I worked on, it was, so it was an admissions world. Um, it would be challenged with a type of patient, so people would come in with, um, issues due to substance misuse. Um, you'd have people come in and they just deteriorate so quickly. If we didn't have the staff. Um, so I know I had one night where two patients who shouldn't have been on my ward, they should have been on a higher acuity area. So it was balancing out trying to literally stop these people from dying and then looking after the other four patients” ” P23, Female, 24 years old

Sub-Theme 3.2: Lack of space in the hospital due to overcrowding

Having to deal with high number of patients on a day-to-day basis was deemed as overwhelming and challenging for the nurses. The overcrowding of patients led to other organisational issues such as lack of beds in the hospital. Maintaining the flow of the hospital is one big responsibility for nurses; with several patients getting discharged and new patients coming in, nurses felt stressed for ensuring a smooth flow.

“Yeah, of course. So in the emergency department, um, our main stress was, has always been patient numbers and overcrowding, and, um, we would frequently experience more patients in department than we have space for” ” P19, Female, 44 years old

“The main challenges I think we face as nurses is the pressure to create capacity in the hospital for more patients” ” P24, Female, 33 years old

Theme 4: Experiencing bullying at work from peers or seniors

Given the high levels of stress experienced by nurses, it has consequently impacted their working relations with other colleagues. Some nurses reported being bullied by their co-workers; some reported feelings of frustration towards other colleagues; inability to support other staff members due to high pressure; and some reported worry towards staff mental health and wellbeing.

“So I've have been bullied quite extensively for a long time in my working career, by a manager. Um, and it was quite difficult because when you're being threatened and bullied and undermined and feeling, not in control, just not in control of things, I'm fearful of this person. It makes your working life very difficult, very difficult” ” P26, Female, 60 years old

“I found it really difficult and actually found quite a bit of bullying and quite negative. So I actually left because of that. Uh, and then I came back here. Um, funnily enough, actually the bully is still here, but she's moved on to, and then she's chilled out a little bit, actually. I think I've grown up as well. And you know, you do learn to become a bit more resilient” P12, Female, 45 years old

Theme 5: The constant feeling of needing to do more to cater to patients' needs

Nurses reported feelings of dissatisfaction regarding their own performance. Given the high stressful work environment, they felt overwhelmed, which made them feel like they are not being able to cater to patients' needs or provide high quality of care that patients deserve.

“But during really stressful days, um, you sort of, you walk away feeling like you've not done your job as a nurse. Um, you know, you've done your basic things. You've done your meds, you've done your assessments. Um, but it doesn't feel like you've done proper, not cared for the patient as well as you could've done” P23, Female, 24 years old

Sub-Category 1.2: Stressors experienced during the global pandemic of COVID-19

Theme 6: Experiencing extreme shortage of staff

Sub-Theme 6.1: Facing shortage of staff due to staff falling sick

Nurses reported an extreme shortage of staff during the pandemic, as employees were either on sick leave, or they had to shield due to coming in contact with a sick relative which in turn increased their workload.

“And then, um, we had staff leaving, obviously staff got COVID. So our staffing was awful. We had endless outbreaks of COVID on the wards. So our patients were sick. Our staff were sick, our staff relatives were sick” P15, Female, 31 years old

“One particular reason I find work stress high at the moment is you never know until you turn up for your shift that how many staff members you have for that day. So like, cause everyone's ringing in because they've suddenly got symptoms or they have to isolate because of contact with somebody else. There's no consistency. And then we sort of go into panic mode and we have to think right when I pull a staff member from here and, you know” P4, Female, 24 years old

Sub-Theme 6.2: Staff getting redeployed to other departments

A large number of employees were redeployed to other departments during the pandemic. Nurses reported stress due to working in unfamiliar settings and the uncertainty around working with different staff members; or undertaking responsibilities out of one's comfort zone.

“So, one of the big challenge at the moment is we have had our departments taken over by the vaccination team. So we will be kicked out of the department. Well, not, we haven't been kicked out. We've been asked to vacate the department to allow the COVID vaccination team in. Um, and so setting up our, um, department in another area has been a challenge. And then following that, the team who then set up that new department in that new area were then

pulled to go and work in the critical care department. So that has, um, been, uh, originally big stress on, on the team. The team have worked really well, um, have been pulled and pushed in every direction. Um, so bouncing from one department to another, this is quite stressful” P7, Female, 53 years old

Theme 7: The changing nature of work processes and environment during the pandemic

Sub-Theme 7.1: Stress of having to keep up with changing rules and regulations during work

These stressors involved keeping up with new upcoming rules and regulations due to the pandemic, e.g. the stress of wearing PPE and masks at all times, not allowing relatives to meet patients, etc. which came across as a barrier for smooth functioning of work related tasks or even dealing with patients. Some also reported stress for not allowing visitors to visit the sick patient, or communicating with patients and families face to face given the fear of contracting the virus.

“Um, we have the stress of having to change the rules around visiting for parents, which has been really difficult because as you can probably imagine, you know, parents want to be with their children when they're in hospital. And we were having to say, no, we can only have one visitor at a time. And every time I came on to shift, there was a new rule in place. This had changed that had changed. Um, and I found that very stressful, the unknown of what was going to come next” P6, Female, 27 years old

“We have additional stress of wearing all the PPE before, before and after each patient's changing, those were time consuming” P19, Female, 44 years old

Sub-Theme 7.2: Having the fear of infecting patients and families with the virus

Nurses reported increased stress of contracting the virus and infecting patients who are already sick and deteriorating whilst fulfilling nursing duties. Some also reported fear of having to isolate.

“We had, um, stress because we are working with the patients. When we come home we are worried about, uh, spreading the infection to kids and family members” P19, Female, 44 years old

“But what I found stressful at the beginning was that, um, the world was changing and my job was changing every day. I was coming into work and being still expected to care for the full patient case load of children who were having chemotherapy, et cetera.. But then I was also having to, you know, think about protecting myself from current virus, protecting the children from coronavirus and the parents” P6, Female, 27 years old

Sub-Theme 7.3: Additional pressure of keeping up with patient demands during the crisis

Dealing with patients during this time also became extremely stressful for nurses; especially dealing with severally ill or dying patients due to the virus, or dealing with aggressive patients and relatives during this time. There were also times when patients would recover but fall more sick and get admitted again.

“And then obviously the relatives call in. So they're on the phone all the time, just constantly on the phone asking what's happening. Why is everything taking so long? And you try and explain, like there's a global pandemic on we're really busy” P15, Female, 31 years old

Theme 8: Experiencing higher workload during the pandemic as compared to before

With increasing patient demands during the pandemic, workload became twice as much for nurses as compared to before the pandemic commenced. This included increase in paperwork, taking extra precautions during work such as swab tests, handling admissions in the emergency department, etc.

“We do have a higher workload now because there's more checks be carried out” P6, Female, 27 years old

“And because of COVID, they made me put all these patients in one area so that my other area could be utilized elsewhere. So after the pandemic, when the numbers of patients started to increase, I am expected to look after two groups of patients” P28, Female, 49 years old

Category 2: Perceived impact of stress on wellbeing and mental health

Theme 9 : Work-related pressures had an adverse impact on mood and stress levels

Sub-Theme 9.1 : Mood on a daily basis was adversely affected by work stressors

Nurses reported several changes in their mood as a consequence of increased stress, such as feelings of frustration, irritability, lack of patience, mood swings, and facing difficulties in switching off. Given that some nurses tend to get attached to patients, participants reported having emotional breakdowns after seeing patients pass away or become severely ill, consequently taking a toll on their mental health. Also, feeling grumpy and experiencing ongoing negative thoughts were reported by participants.

“Um, and I think sometimes it impacts on me before shift as well. I noticed that the day before I'm going in, I'm just more stressed about things I'm more grumpy about things and just generally have a lower mood” P2, Female, 25 years old

“Like if I've had a particularly stressful shift, then I come home and just the constant thoughts, the thoughts are just going on and on and on in your head. And it's really difficult sometimes to turn those off” P16, Female, 32 years old

“It's been ongoing and it's been like harder to get out of a row. So like I had a patient who passed away and like normally I'd have like a little cry cause I'm an emotional person. Anyway. I always have been, so I have a little cry and that was it. But like, I'd be thinking about it for days and days afterwards” P8, Female, 24 years old

Sub-Theme 9.2: Experiencing lack of motivation and difficulty going back to work

Increased stress levels led to nurses facing difficulties going back to work. Some even reported thoughts of giving up or quitting their job and finding alternate careers which are not related to the medical field. After a hectic work day, nurses also reported difficulties to

engage in other activities outside work, and felt the need to shut off from everyone due to constant worrying about work.

“You know, if you're really stressed by work, then although I've said, I really enjoy my job. When I'm feeling really stressed by work, it makes me not enjoy my job and sort of dread going in” P6, Female, 27 years old

“I know personally I'm very I have a very strong will but yeah it feels like I want to quit the job. These days it's quite evident that I always thinking of I should leave this position. I should find something else. I want to just get off this hospital and go you know” P31, Male, 35 years old

Sub-Theme 9.3: Work stress reaching a clinical threshold of depression and anxiety

Increased depression and anxiety, to a point where participants felt the need to seek professional help or even take medications, was reported as a consequence of high work-related stress.

“I've been getting more and more stressed to a point like where I have gone to my GP and I am now on antidepressants because of the stress at work” P8, Female, 24 years old

“Like I've never felt anxious in my life and I do now like, definitely” P15, Female, 31 years old

Theme 10: Notable lifestyle changes were experienced as a result of high stress levels at work

Several changes in terms of lifestyle were reported as a consequence of stress. These changes revolved around aspects of “sleep”, “appetite”, “ill health”, and “the need for more holidays”.

Sub-Theme 10.1: Sleep difficulties due to constant exposure to stressors

Nurses reported a negative impact on their sleep cycle as a result of work-related stress. They faced difficulty switching off from work even after returning home. Some reported

experiencing constant worry about unfinished work, which resulted in terms of disrupted sleep or waking up in the middle of the night.

“I'll wake up at two o'clock in the morning, like, oh my God, did I fill in the fluid chart? And I'll be like, no, go back to sleep” P8, Female, 24 years old

I don't sleep very well and that's definitely connected to work. Um, because if I went on annual leave after a couple of days, I can sleep fine but on a day when I'm at work and certainly on a Sunday night, I wake up several times in the night and I'm usually awake at four o'clock in the morning. So, you know, so definitely. And that's definitely work-related and it's definitely stress-related” P1, Female, 47 years old

Sub-Theme 10.2: Facing changes in appetite due to constant worrying

Some nurses reported either loss of appetite or binge eating as a consequence of stress.

“I wasn't eating properly. I lost a lot of weight and cause I just couldn't be bothered to eat” P8, Female, 24 years old

“If I'm really stressed, I can't sleep and start overeating rubbish” P26, Female, 60 years old

Sub-Theme 10.3: Bringing work back home affecting one's personal life

Worrying about patients and worrying about not fulfilling all duties during work would tend to interfere with nurses' personal lives. Family members start to notice one being in a low mood which can also affect personal relations at home.

“Um, when I am stressed at work, I do tend to take this home and my family notices that I am in a low mood. Even though I try to forget about work once I reach home but sometimes it's hard to hide your emotions” P2, Female, 25 years old

“You think about things you haven't done or you needed to do. So it's more difficult to switch off” P13, Female, 27 years old

Category 3: Perceived impact of stress on work performance

Theme 11: Nurses' cognitive abilities were compromised due to stress at work

The impact of stress on work performance among HCPs has been previously discussed. In this study too, some nurses reported a negative effect of stress on their concentration levels during work, their decision-making skills, carrying out tasks efficiently and effectively, and their energy levels as well.

Sub-Theme 11.1: Struggling to concentrate on multiple tasks during work

Given the demanding nature of the work environment, some nurses faced difficulties in focussing on a given task at hand, and reported the inability to multitask. Some even reported getting dazed during work and struggling to focus.

“And I feel I've noticed a difference in me, before like multitasking was like, just what you do, like 10 things you do at once. And I definitely can't really do that anymore” P15, Female, 31 years old

Sub-Theme 11.2: Having a short attention span leading to errors at work

Nurses experienced a negative impact on their memory or forgetting important tasks due to handling so many responsibilities during work as a result of high stress. They also reported making more errors on things like medications or patient's paperwork given the high level of workload and pressure they experience on a daily basis.

“Probably some times where I've missed some things. Um, if you feel quite stressed about everything that you've got to do, and you've got to do like a medication round or, um, there are things that you need to pick up with your patient that maybe you missed, and someone else comes along and points out and then you think, Oh yeah, I knew that. So probably those kinds of situations are affected by stress” P2, Female, 25 years old

“I think there's a higher risk of making mistakes as well. Um, because with so much pressure and everything being rushed or because there are new patients coming in or because these

patients need go home so we can have new patients. So everything is sometimes is a bit rushed. So, um, I feel like there has been lots of mistakes later” P25, Female, 31 years old

Sub-Theme 11.3: Feeling mentally drained as a result of stress due to high workload

Feeling mentally and physically drained due to a hectic work day and high levels of stress was a common issue experienced by nurses. Due to this reason, several reported having low energy during work.

“You are physically and mentally really drained these days, and I never used to be this tired” P31, Male, 35 years old

Sub-Theme 11.4: Facing difficulties in carrying out certain tasks and duties

Some nurses reported not fulfilling their duties effectively or being unable to take on longer shifts to an extent where they feel dissatisfied with their performance. Some also reported lagging behind with their work and missing important deadlines for when things need to be moving at a flow as a result feeling overwhelmed and stressed.

“Or I'm having to stay later off the shifts because I've not been able to do all my tasks during the shift we pulled up and slower, like for example, um, I'm still there after the shift, back to work working clinically, I was staying late to writing my documentation because I've got a headache” P5, Female, 27 years old

“Um, there has been times where I don't feel that I've met and things in time. So like when you push to do a discharge or something like that, sometimes yeah. Maybe I haven't always met the deadlines for things when they, when things need to be moving by” P2, Female, 25 years old

Theme 12: Increased stress levels were predominantly associated with perceived low self-efficacy

Sub-Theme 12.1: Feeling incapable of displaying appropriate compassion towards patients

Due to the hectic work environment, nurses reported feeling less compassionate when dealing with their patients especially when there are various other tasks which need to be fulfilled. It gets difficult to balance things out during work when one is trying to save lives whilst maintaining their own mental wellbeing.

“The patients get upset as well, because you're not giving them the attention and they get upset with you. And then you, I I've had days where I felt like I've not been able to give somebody the, I don't know the emotional attention they would've needed because I've literally been trying to stop somebody from dying” P23, Female, 24 years old

“Just not dealing with patients with the same level of compassion, because you know, you've got 20 other jobs that you need to be doing” P16, Female, 32 years old

Sub-Theme 12.2: Not prioritizing effectively due to challenges at work

Feeling of letting down patients due to taking care of other tasks at hand given the hectic work environment and being short-staffed. For example, some nurses reported catering to other severely ill patients and sometimes forgetting the needs of other, less critical, patients on the ward.

“ So in particular I feel that some of my patients are very clinically ill and require a lot of intervention. I then feel like I forget about my other patients, even the basics of nursing care for them seem to go out the window because you have to prioritize it in a better way. And I do feel like I let the other ones down at that point. Um, but again, you, you only have so much time and so many, you know, things you can do” P4, Female, 24 years old

“Yeah, so I think that when I am stressed, my mind sort of goes into panic mode and I'm more likely to forget things. I struggle more to prioritize. If things are really stressful, let's say we're short staffed on a day shift and the, the whole environment is more stressful” P6, Female, 27 years old

Sub-Theme 12.3: Feeling less confident in being capable of performing tasks to perfection

Feeling stressed about not being good enough at one's job. Some reported experiencing immense pressure especially when performing a task for the first time, thereby affecting one's confidence level. Also, stress was induced because nurses felt they need to do a thorough job and not let anyone down.

"That night I felt that everybody was looking at me to know what to do, but I haven't actually had a situation like that before, so I didn't feel confident because it was the first time I was doing it, and so then I started having a bit of anxiety that I didn't feel that I was good enough" P30, Female, 40 years old

"So I tried not to let it affect my performance. Um, And that is quite an effort to do that. Um, so I'm a bit of a perfectionist with things. I think I stress myself more by not allowing it to affect my performance with the patients. So I stress myself out to make sure everything's done and things like that" P2, Female, 25 years old

Theme 13: Stress served as a facilitator for higher levels of work performance in nurses who believed they had good coping potential

Some nurses reported high resilience despite the stressful work environment; they felt they could perform better and not let stress get in the way of fulfilling the required tasks and duties. For nurses who are perfectionists, they feel that nothing should stop them from performing as it is their job at the end of the day and they feel the need to get everything done in the correct manner instead of making any errors.

"Um, I'd say my work performance is probably the only thing that's like stayed balanced because like I can control that. And I think I am a bit of a control freak, and I like to be in control" P8, Female, 24 years old

"I keep saying, You have a job, you have tasks. Doesn't matter. It's like, if you want to be a carpenter, you have to work under the rain and during the snow" P9, Female, 32 years old

Theme 14: Stress influenced adversely the relationship with colleagues at work

As important as it is to maintain a good working relation with co-workers, sometimes working in a stressful environment can jeopardise one's relationship others.

Sub-Theme 14.1: Comparing oneself to other colleagues created more tension in peer relationships at work

Given the lack of confidence in some circumstances, nurses felt the need to compare themselves to their co-workers which consequently made them feel that their performance was not as good as the other nurses, thereby causing further stress.

“If I see one of my colleagues having done something really good, my first instinct will be, oh, I wish I was as good as them. And I wish I had done things like that. And then I just make more of a conscious effort to be better at that” P6, Female, 27 years old

Sub-Theme 14.2: Feelings of frustration toward colleagues were commonly experienced

Nurses reported getting short and snappy with people around them, e.g. their co-workers, or sometimes even patients for even little things as a result of high stress levels.

“It's like, if they come to me and I've got a patient there and I've things to do, I snap at them. And then afterwards, when I'm home, I think God, you shouldn't have spoken to them like that” P10, Female, 60 years old

Category 4: Coping strategies adopted for dealing with stress

Theme 15: Problem-focused and avoidance coping in dealing with stress at work

Having effective coping mechanisms in place can help reducing one's stress level. Nurses reported making use of different coping strategies when dealing with difficult situations be it generally, or in terms of handling patients, and handling conflicts with colleagues/supervisors.

Sub-Theme 15.1: Seeking support from colleagues in handling work stressors, particularly in dealing with patients and patients' families and handling conflicts

Socializing with other colleagues helped encouraging one another during a stressful working day. It provided a sense of working together as a team. Also, several nurses seek advice from their managers and co-workers to help resolve the issues when dealing with patients and their relatives as someone with more experience can help guide them better in a difficult situation.

“Sometimes I deal with stress by talking to people around me about the things that I'm worried about for the day. Um, so I talk to my colleagues” P2, Female, 25 years old

“The best solution is to like talk to people around to colleagues, offload, you know, try and, you know, have a bit of fun, enlightened the situation” P3, Female, 42 years old

Sub-Theme 15.2: Trying to show empathy and resolve conflict with patients and patients' families

Having empathy towards patients and their relatives is one major aspect of the nursing role. According to nurses, it was important to have good communication and listening skills, and also apologise when necessary in order to dissolve the difficult situation.

“So because I'm the ward manager, I think, um, I probably have dealt with many situations over the last couple of years like this, but how I would deal with it, you have to be really sensitive. Your approach has to be sensitive. Um, you have to show, you know, a lot of empathy and you have to just sit and listen to start off with” P24, Female, 33 years old

“I like to ask the patient or the relatives kind of what they know is going on so far and let them talk first, just so that they can try and get their concerns out first, because then if I know what their concerns are, I can address those a lot more easily” P16, Female, 32 years old

Sub-Theme 15.3: Offering full support to patients and their families

Nurses believed in providing full support to the patients and their families by guiding them to right place, giving all the information they require, being honest with them about the situation, encouraging feedback from patients in case of any complaints they might have, making sure someone is there for the patients at all times, and following up when necessary.

“I try to fully inform myself before I go and approach them really. So I've made sure that I know about all of the, the reasons why the patient was here, any kind of backstory. All of their investigations and things so that when I go and speak to, to them, I, I feel prepared. Um, I find that definitely calms my stress a little, and I feel as though I be able to answer any questions they might have or, you know, be able to deal with the matter a bit better” P16, Female, 32 years old

“Um, and if it's like something that they want to put in a complaint or something, we've got the leaflets that we can give them. And I always say, yeah, please do express this because this is the only way we can address any problems or change” P4, Female, 24 years old

Sub-Theme 15.4: Having regular breaks in order to deal with a hectic work environment

In order to deal with a hectic work environment nurses tend to take regular breaks, some in the form of getting fresh air, or even a cigarette break. They also prefer taking a step back in order to reflect on the difficult situation and rationalise before going back to the ward. Some also prefer taking time off from work.

“Uhm, I don't smoke outside of work, but I do smoke at work and I think that's again something to do it stress levels and it's become a habit. Like when you're on the ward you just want a reason to have 5 minutes out” P30, Female, 40 years old

“Or just have a re um, a bit of a re-evaluation of your workload and try and just be calm and collected. I'm quite lucky. It just taking a deep breath at the time. I'm okay at sorting out the problem at the time” P24, Female, 33 years old

Sub-Theme 15.5: Coming up with a day planner to organise the upcoming work challenges

Some nurses prefer to make notes of all the tasks that need to be fulfilled. It helps them feel more prepared and organised during work.

“So I make lists, I, uh, have everything put down. And it doesn't matter, like I don't put it down in any particular order, but I look at what needs to be done and then I will work my way through it in order of priority” P14, Female, 44 years old

Sub-Theme 15.6: Avoiding confronting conflict with colleagues or taking a step back in order to understand their perspective

Some nurses resort to avoidance behaviours; in terms of avoiding problems, or confrontations, or even keeping things to oneself. They also believed in being empathetic in a given situation and understanding others' point of view in order to resolve the conflict. Whereas some nurses reported feeling worried when faced with a conflict; some even tend to avoid the person they have faced issues with.

“I just walk away because it's easier” P20, Female, 56 years old

“I tend to avoid the confrontations” P17, Female, 32 years old

Theme 16: Coping approaches adopted outside the workplace in order to alleviate work-induced stress

Several other coping strategies were adopted by nurses outside of their workplace, such as engaging in other fun activities, which helped them disengage from work-related stress.

Sub-Theme 16.1: Engaging in various forms of physical activity to reduce stress levels

Engaging in regular workout such as cycling, walking, yoga, or even sports helped nurses distract them from the hectic work environment and divert their attention to taking care of their physical health.

“Even if I'm not sort of buying anything, just getting out of the house is often quite helpful to relax me, like taking some long walks or something” P13, Female, 27 years old

“I do quite a lot of exercise. I do like to go running and stuff like that. And, um, that definitely helps to alleviate stress and that kind of thing” P1, Female, 47 years old

Sub-Theme 16.2: Finding joy in leisure activities

Nurses reported engaging in other forms of leisure activities such as reading, baking, gardening, socialising with friends, etc.

“I just get involved in hobbies like gardening” P19, Female, 44 years old

“I like reading and to get lost in a book sort of thing” P30, Female, 40 years old

Sub-Theme 16.3: Engaging in relaxation techniques to wind down after a stressful work day

In order to disengage from a hectic and stressful day at work, several nurses adopted the techniques of breathing exercises and mediation. Some made use of mindfulness apps and headspace particularly at night which helped them switch off and sleep peacefully. Some even reported taking their dogs for a walk as they find it quite therapeutic; or making use of essential oils to help relax.

“I do breathing exercises, if I'm feeling particularly stressed” P7, Female, 53 years old

“I also in the past have done quite a lot of mindfulness. I will say I haven't done much for the last couple of months really, but I've got a mindfulness app, and I've got headspace. And so I listened to it quite a lot, particularly at night, I'll do that, some of their sleep things” P1, Female, 47 years old

Sub-Theme 16.4: Seeking social support from one's personal/close environment

Some nurses found comfort in venting to someone close, e.g. talking to a relative or significant other.

“So, um, quite often when it's like difficult conversations or things that have upset me a little bit, um, if patients have complained or something like that, um, usually my first port of call is to go home and tell my partner about it” P2, Female, 25 years old

“I ring my husband when I'm driving because. I have to do the motorway and I vent on the phone, literally tell him everything that's happened” P28, Female, 49 years old

Sub-Theme 16.5: Seeking professional support for dealing with work as well as personal issues causing stress

Nurses preferred to reach out to professionals in order to help them cope with their daily challenges at work and in their personal lives. These include taking medications such as antidepressants, or taking therapy for dealing with stress.

“When I noticed it was getting bad I went back to my GP, um, I took therapy” P11, Female, 32 years old

Category 5: Perceptions regarding the NHS work environment

Theme 17: Despite the challenges, the majority of nurses considered their overall experience in their job satisfactory and rewarding

Despite the heavy workload and daily challenges nurses encounter, participants reported feeling happy and satisfied with their current job and their co-workers. They found the nursing profession as very rewarding, especially in terms of helping and caring for patients, or contributing towards society.

“Yeah, definitely. I mean, you know it's rewarding because I managed to get through the emails that have been sent. Sometimes it's rewarding because, you know, I'll help somebody, uh, get onto a course they want to do, or it'll be rewarding because, um, you know, I might be, um, helping somebody more junior feel confident at work or it might be rewarding. So I've seen patients and made a difference to patients” P1, Female, 47 years old

“And the role that I'm working in currently, uh, where I'm seeing patients and treating them and coming up with plans and things. Um, I feel my experience as a nurse is really helpful. Um, and I can give better experiences to patients with that nursing background” P16, Female, 32 years old

Theme 18: Organisational support by the NHS environment was perceived to be inadequate

Some nurses reported negative views in terms of support received from the higher management, including the occupational health. It was noted that the organisation has been unable to resolve most issues which were stress-related. Some even worried that their issues could be misunderstood or underestimated, so they try to find solutions themselves instead of reaching out for help.

“I don't think the organization is very supportive. And I think the organization's too big to have a personal interest, um, in, in people, you know, there's 16,000 staff. It's not built to be that kind of a model” P10, Female, 60 years old

“Um, if you complained about it, you were told by management to get on with it. It was your fault. It was your poor time management. Um, if you went home late while you were doing something wrong, if you went through your lunch, you were doing something wrong” P14, Female, 44 years old

Theme 19: Recommendations offered for improving the NHS work environment

Several suggestions were made by nurses which they perceived would be helpful for the future of NHS as an organisation.

Sub-Theme 19.1: The need for better communication, awareness and engagement by the higher management

Nurses felt that their hard work was not getting acknowledged; at times they reported feeling neglected. A strong need for communication was addressed by nurses which would help in the smooth functioning of carrying out different tasks. They hoped that the high management should make more effort to get to know them and understand their roles.

“I think it just be nice to just to say, we know you've worked really hard” P14, Female, 44 years old

“And, you know, so we give ourselves to that because we love the job so much, but I think there's things that people can do in the trust. And that simply. When we receive phone calls to the ward, instructing us to do something, maybe move patients or send a patient here or send a patient there. I think we need to see more, more senior management and having the opportunity to speak” P24, Female, 33 years old

Sub-Theme 19.2: The need for more resources to enable smooth organisational functioning

Some suggestions made by nurses included the need for more resources such as more funding, better parking facilities, more trained staff on the ward, and the need for more beds in order to avoid space issues in the ward. Some even recommended to increase the salaries of nurses so they can afford some luxuries of life given how much they are contributing towards the society whilst compromising their own mental health.

“I feel really guilty a lot of the times that a lot of the people that I'm working with there, I watched them work so hard and be really dedicated to what they're doing and that they can't afford to do things outside work, all the things that take the edge off, you know, that makes life easier. It's just, they can't afford to pay for the basics for their family. You know? So it's happening when you're working directly for the government. That's ridiculous” P27, Female, 47 years old

“I was just saying that I think there's some things that the hospital and the organization could do to support staff more, but I feel that they're also constrained by resources and things, and it's not always possible” P2, Female, 25 years old

Category 6: Perceptions regarding the NHS wellbeing support provision

Theme 20 a. : Half of the nurses were aware of different interventions available at work but did not feel the need to take them up

Most nurses felt they did not feel the need to take part in any interventions as they felt more comfortable talking to their colleagues or relatives regarding the stress they experience. Also, some perceived these interventions as not very helpful. Some also claimed for managing their issues on their own instead of seeking help.

“At the moment, I'm able to deal with it myself, with friends and talking it through. So I think if it got to that stage where I felt like I was not able to do my job or it was really affecting my patients, then I would go and seek out” P15, Female, 31 years old

“I will approach them if I have problem, but at the moment I'm doing fine” P19, Female, 44 years old

Theme 20 b. : The other half of the nurses took up interventions at work in order to deal with stress

Nurses made use of several wellbeing interventions/resources in order to help them cope with stress. These included CBT, mindfulness, staff wellbeing rooms, EAP, stress management workshops, therapy, counselling, etc.

“I've had to go on a course of CBT as well. Um, just because everything, it just, it just got overwhelming to be honest” P23, Female, 24 years old

“I've used the counselling service at work on at least three or four separate occasions over the years that I've worked there” P27, Female, 47 years old

Theme 21: Nurses felt comfortable approaching their line managers for discussing wellbeing issues

In case of any issues, whether work-related or even personal life, nurses felt comfortable taking advice from their line managers. Nurses perceived their line managers as extremely helpful and approachable who offered them immense support and empathy during difficult times. They also reported feeling encouraged and engaged in their work after speaking to their line managers.

“She's just, um, helpful in that she listens and you can talk to her and you know, that she'll do everything. She can support you. So, you know, if you do need time off or anything like that, like she'll understand” P11, Female, 32 years old

“So I have my appraisal every year and my manager's amazing. So she's always giving us feedback and yeah, she's really supportive” P15, Female, 31 years old

Theme 22: Accessibility issues were reported as major barriers to taking up wellbeing interventions at work

Sub-Theme 22.1: Being unable to make time for taking up any wellbeing intervention at work

Lack of time to take part in wellbeing interventions given one's hectic work schedule was one major barrier reported by nurses. Some displayed preference for spending their free time with family and friends instead of being a part of any wellbeing programmes.

“But all the other things that they offer are just not plausible for the shifts that nurses work” P20, Female, 31 years old

“But again, you haven't got protected time, you don't get time to do it” P28, Female, 49 years old

Sub-Theme 22.2: Not knowing how to access certain interventions or being hindered by long waiting lists

Certain issues pertaining to accessing these interventions were also reported by nurses, e.g., lack of computers to take part in any intervention, or long waiting lists for over six months in order to receive help and support, or simply not having the knowledge of how to access an intervention.

“There's a lack of, you know, resources, there's a lack of computers and devices for people to actually log onto these things” P28, Female, 49 years old

“Um, but again, for me say there is, uh, there's a course that was put up for managers to help that staff through the stressful period. Um, and I thought it was brilliant as I'll go on that. Um, But there's 10 places on the course, the 16,000 staff of which, how many are managers? So you might be able to get on it in June, July, August” P10, Female, 60 years old

Sub-Theme 22.3: Lack of awareness regarding the availability of the various wellbeing interventions offered at work while support resources were generally perceived to be lacking

Being aware of what wellbeing interventions are offered to the employees is an important aspect of engaging in these interventions. Some nurses reported not being completely aware of what interventions were out there to help them cope with stress.

“I think other than that, before that I wasn't completely aware of what there really was out there. Um, and it wasn't until much later that I found the, um, internet resources and things” P2, Female, 25 years old

“So, uh, I think there's lack of awareness. I would say when it comes to, you know, uh, what is available out there for employees to make use of” P26, Female, 60 years old

4.4 Summary of findings

As discussed previously (Chapter 1), nurses form the largest employee group within the UK National Health Service (Johnson, Croghan, and Crawford, 2003). Given the demanding nature of the nursing profession, it is not surprising that NHS nurse employees are continuously exposed to a variety of stressors on a daily basis, thereby impacting their psychological wellbeing and work performance (RCN, 2020). However, literature on the impact of stress on work performance among NHS nurse employees is scarce; prior literature between stress-performance relationship among nurses has revealed results mostly derived from quantitative studies. Therefore, one of the aims of the current study was to understand the relationship between stress and aspects of work performance among nurses who work for the NHS, using mixed methodology. The current study has also considered the role of EI, as a moderator and mediator, in the relationship between stress and work performance among NHS nurses. From a qualitative perspective, the study gathered in-depth data (through semi-

structured interviews) on the effects of stress on the psychological wellbeing of nurses; coping strategies adopted on order to deal with stress; and opinions regarding the wellbeing interventions and other forms of support offered to them by the NHS organisation. Data was collected from participants working in Nottingham University Hospitals (Queen's Medical Centre, City Hospital, and Ropewalk House); and the Nottinghamshire Healthcare Foundation Trust.

Quantitative data was derived using regression analysis, along with moderation/mediation analysis via SPSS (Version 28). Regression analysis demonstrated a significant positive relationship between stress and impaired work performance ($\beta = 3.672$, $p < 0.001$). In other words, stress appears to be negatively associated with work performance among nurses. These findings are consistent with prior literature (Westman and Eden, 1996; Jamal, 1984; Levek and Jones, 1996; Motowidlo et al., 1986; AbuAlRub and Al-Zaru, 2008; Coffey et al., 1987; Machado et al., 2018; Happell et al., 2013). Also, results of the regression analysis conducted to understand the effects of stress on work satisfaction, indicated a negative linear relationship between the two ($\beta = - 0.781$, $p < 0.001$). In other words, the presence of stress led to reduced work satisfaction among nurses in the current study. The findings are also consistent with previous literature highlighting the negative linear relationship between stress and work satisfaction among nurses (Joshua et al., 2020; Labrague et al., 2016; Jones et al., 2003). In terms of absenteeism and presenteeism no significant relationship was found between stress and absenteeism, or between stress and presenteeism. However, a significant positive relationship was found between stress and activity impairment ($\beta=0.004$, $p < 0.039$). In other words, the presence of stress among nurses caused impairment in overall daily activities outside the workplace. The findings are consistent with prior literature indicating a negative impact of stress on work-life balance (Schneiderman et al., 2005); poor quality of life (Celmece and Menekay, 2020); and loss of interest in other activities (Portman, 2009). With regard to role of EI as a moderator and mediator in the relationship between stress and work performance, results of the current study revealed that EI did not moderate the relationship between stress and work performance among nurses. But EI partially mediated the relationship between the two constructs. Results reported that the total effect of stress on work performance, ignoring the mediator, was positive and significant ($B= 3.672$, $se= 0.498$, $t= 7.371$, $p < 0.001$). With the inclusion of the mediating variable (EI), the direct effect of stress on work performance was also significant ($B= 3.323$, $se= 0.490$, $t= 6.788$, $p<0.001$). In addition, the indirect effect of stress on work performance, through EI, was also found

significant ($b = 0.349$; 95% CI = 0.044, 0.748). In other words, the strength of the relationship between stress and work performance did not depend on the presence of EI (moderation); however, EI does partially explain how stress affects work performance (mediation), but also implies there may be other factors beyond EI which can contribute to the relationship between stress and work performance. The findings are consistent with previous research where EI plays significant mediating role (Zhang et al., 2016; Kang and Bae, 2015; MacCann et al., 2011; Montes-Berges and Augusto 2007).

The qualitative findings, through semi-structured interviews, were derived using the method of thematic analysis (Braun and Clarke, 2006). As mentioned above, the themes emerging from interviews were divided into six broad categories, after which relevant sub-themes were formulated. The first category highlighted various stressors experienced by nurses on a daily basis. As the global pandemic commenced in 2020, the category was further divided into two sub-categories, differentiating between stressors experienced before the pandemic and during/post the pandemic. One the main stressors experienced by majority of nurses, as reported in the findings, was heavy workload (Theme 1). The reasons mentioned for high workload by participants were related but not limited to delivering various tasks in a short span of time, having irregular or less breaks during work, and lack of time for managing everything from all directions. Previous studies on nurses have also mentioned high workload as a common stressor experienced by nurses globally (Halpin et al., 2017; Li and Lambert, 2008). A related sub-theme captured issues related to shortage of staff. Dealing with a large number of patients with less staff on duty came across as extremely stressful. Reasons for shortage of staff included last minute sickness absences, and nurses going on maternity leaves without replacements, thereby adding more pressure.

Findings are consistent with prior research, highlighting shortage of staff as a major challenge experienced by nurses (Naholi et al., 2015; Dall'Ora et al., 2015). Taking responsibility for training and supporting new staff members on wards, whilst coordinating everything from all directions put additional stress on the nurses, as reported in the interviews. Participants reported being pushed out of their comfort zone and working on wards they were not familiar with, thereby causing feelings of frustration (Theme 2). This could be attributed to the fact that nurses felt comfortable when working in one particular ward; they got used to caring for the same patients and having an emotional connect with them, before being placed in an unfamiliar environment with a new set of patients.

Experiencing high patient demand was considered an everyday challenge for nurses (Theme 3). Various theories, as mentioned in Chapter 1 (Introduction), have highlighted that high job demands can lead to burnout (Job Demands - Resources Theory by Bakker, 2007 and Demerouti, 2017); higher job demands can cause psychological strain leading to reduced work performance (Demands-Control Model of Stress by Lang et al., 2007). A related sub-theme shed light on the challenging implications of dealing with patients' relatives of patients. Participants reported catering to patients' needs, caring for them when they're severely unwell, witnessing deaths of patients, getting attached to patients, or even the constant feeling of needing to do more for patients (Theme 5), causing a major toll on the participants, both physically and emotionally. The findings are consistent with previous research, where dealing with patients and their relatives can be extremely taxing on nurses providing care (McGrath, Reid, and Boore, 2003). Another related sub-theme was overcrowding of hospitals due to lack of space. Nurses reported feeling overwhelmed dealing with high number of patients every day, leading to organisational issues such as lack of beds. This was particularly the case for participants who worked in the emergency department, where nurses felt responsible for maintaining the flow of the hospital whilst creating a capacity to cater to all new and old patients. Findings are consistent with previous research where overcrowding is deemed as a stressor for nurses (Gibbens, 2007). Workplace bullying is known to cause severe psychological distress among nurses, as highlighted in previous research (Hayashino et al., 2012; Demerouti et al., 2001; Bakker and Demerouti, 2017). The current study too reported participants experiencing bullying by co-workers, thereby impacting working relations with colleagues, worrying about mental health, and feeling stressed (Theme 4). Once the global pandemic commenced, participants reported similar stressors as they experienced before the pandemic; however, the same stressors mentioned were further escalated to include a variety of new challenges. For instance, high workload was a stressor even before the pandemic; however, the workload became two-fold during the pandemic (Theme 8) as it involved nurses to carry out more checks (e.g., swab tests), taking extra precautions, and experiencing higher patient demand particularly in the emergency department. Similarly, shortage of staff was an issue experienced before the pandemic; however, participants reported shortage of staff (Theme 6) due to other reasons such as falling sick or encountering someone who contracted the virus, thereby putting more pressure on nurses. A related sub-theme included staff getting redeployed during the pandemic. Another major theme revolved around the changing nature of work environment during the pandemic (Theme 7). Participants reported stress of keeping up with the changing rules and

regulation, e.g., wearing masks/PPE, or inability to communicate with patients and relatives face-to-face. A related sub-theme highlighted participants' fear of contracting the virus, or fear of infecting loved ones with the virus. Another related sub-theme included dealing with severely ill patients or death of patients due to the virus, thereby causing more distress among nurses. These findings are consistent with literature highlighting stressors experienced by nurses during the pandemic (Neto et al., 2020; Jackson et al., 2020; Maben and Bridges, 2020; Sun et al., 2020; Liu et al., 2020; Mo et al., 2020; Şanlıtürk, 2021).

The second category shed light on the impact of stressors, as mentioned above, on the mental health and psychological wellbeing of nurses working in the NHS. Findings reported adverse effects of stress on participants' mood (Theme 9); feelings of frustration, irritability, mood swings, feeling impatient, and difficulty switching off was commonly reported by nurses. A related sub-theme included lack of motivation, experiencing difficulties going back to work, or even having thoughts of quitting and giving up. Issues related to anxiety and depression were also noted during the study; where participants felt the need to seek professional help or rely on medications as consequence of high work stress. Furthermore, several changes in lifestyle were mentioned by participants (Theme 10). The related sub-themes included sleeping difficulties, due to constant worrying about work; appetite changes, such as loss of appetite or binge eating; and negative work-life balance. Findings are consistent with previous literature, taking into account the impact of stress on psychological wellbeing among nurses (Schneiderman et al., 2005; Portman, 2009; O'Donovan et al., 2013; Wiegand and Funk, 2012; Wan et al., 2020; Guixia and Hui, 2020; Kisa, 2020; Sahin et al., 2020).

The third category discussed the effects of stress on the work performance of nurses working in the NHS. The quantitative results revealed a significant positive relationship between stress and impaired work performance. However, the interviews helped gain further knowledge on nurses' perceptions of their work performance, after experiencing extreme distress during work. A relevant theme under this category mentioned compromised cognitive abilities due to stress (Theme 11); in terms of effectiveness and efficiency in executing tasks, poor decision-making skills, including lack of energy. The related sub-themes tapped on concentration difficulties and ability to multitask; limited attention span, leading to making more errors at work; experiencing physical and mental exhaustion. Given the demanding nature of the nursing profession and overwhelming workload, nurses struggled to focus on tasks; some reported feeling dazed during work, making more errors in

terms of paperwork, forgetting important information, missing deadlines, and inability to work longer shifts due to exhaustion. These findings are consistent with the above literature (Jones et al., 2003; O'Donovan et al., 2013). Another important theme noted was associated with perceived low self-efficacy among nurses (Theme 12). Related sub-themes highlighted feeling less compassionate towards patients, because high workload acted as a barrier for nurses to connect with their patients; inability to prioritise tasks, such as focusing more on ill patients while forgetting the needs of other less critical patients; lack of confidence in performing tasks, as nurses reported feelings of not being good enough in their jobs and experiencing fear of letting people down. Previous literature has also revealed similar results (Schneiderman et al., 2005; Portman, 2009). For some participants, stress facilitated better work performance (Theme 13); this is because nurses believed in carrying out required tasks and not letting stress get in the way. Some reported high resilience; some displayed perfectionism and ensured no errors were made during work. Finally, relationship with colleagues at work was also adversely affected due to the presence of high stress (Theme 14). Participants reported comparing themselves to other colleagues; and feeling frustrated towards people around them as a result of stress. Prior literature denoted similar results, where high stress levels caused feelings of frustration with colleagues and seniors (Labrague et al., 2016).

As mentioned previously, the use of effective coping strategies allows one to deal with stress and its consequences on psychological wellbeing and work performance (Lim and Bogossian, 2010). Therefore, the fourth category investigated what coping mechanisms nurses adopt in order to deal with stress. The use of problem-focused and avoidance strategies was highlighted as an important theme (Theme 15) in order to deal with stress, handle conflicts with colleagues/seniors, and in terms of handling patients. The most predominant sub-theme formulated was seeking social support, as majority of participants reported socialising with colleagues and taking advice from seniors deemed as helpful when resolving issues at work or even when dealing with patients. Seeking social support has been regarded as an important coping mechanism among nurses even in previous studies (Constable and Russell, 1986; Dick, 1986; Hare, Pratt, and Anderaws, 1988; Paredes, 1982; Abualrab, 2004; Hall, 2007; Drach-Zahavy, 2004). When dealing with patients and families, participants believed in showing empathy; being apologetic when required and having good communication skills in order to dissolve the stressful situation. They also believed in providing support to patients and families by giving them proper information, guiding them to the right place and

encouraging feedback from them in order to improve their quality of care. Other problem-focused coping strategies mentioned by participants included taking regular breaks, in order to feel calm; and making notes to feel more organised at work. Some participants resorted to avoidance strategies as well for dealing with stressful situations; they experienced feelings of worry and anxiety when faced with a conflicting situation and preferred avoiding confrontations, or even keeping things to oneself. Prior literature has too highlighted avoidance coping as a means for dealing with stress among nurses (Laranjeria, 2011; Parikh et al., 2004; Beh and Loo, 2012). Participants reported the use of various other coping strategies outside the workplace, in order to alleviate work stress (Theme 16). Related sub-themes included engaging in physical activity such as yoga, sports, etc; engaging in hobbies in order to distract oneself, such as reading, baking, gardening, etc; adopting relaxation techniques, such as breathing exercises or mediations which helped participants to switch off and have a peaceful sleep; seeking emotional support from family or loved ones; and finally seeking professional help in the form of therapies or medications.

Participants' were asked to give their opinions regarding the NHS work environment, which then emerged as the fifth category of the analysis. The majority of the participants reported feeling satisfied and rewarded in their profession (Theme 17). They felt happy in their current role and while caring for patients. However, participants believed that that support from the organisation was inadequate (Theme 18). They felt it was difficult reaching out to the higher manager and the occupational health for issues related to stress. This led to participants offering recommendations for improving the NHS work environment (Theme 19). The related sub-themes included a strong need for better communication and awareness by the higher management. Participants felt their efforts were not recognised and their needs were neglected. Another related sub-theme highlighted the need for more resources in order to ensure smooth functioning of the organisation; these resources included more funding, better parking facilities, the need for more trained staff, and more beds in order to avoid hospital overcrowding.

As depicted in Chapter 2 (Scoping Review), there is an urgent need to promote the psychological wellbeing of NHS employees in order to create a resident work environment (Youssef and Luthans, 2007). This can only be possible by planning and implementing appropriate and effective wellbeing interventions so healthcare employees feel better equipped to deal with stress and enhance their psychological wellbeing. Even though the

scoping review (Chapter 2) highlighted several psychological wellbeing interventions in place, the current study also took into account the nurses' opinions regarding the wellbeing support offered to them by the NHS, which was then deemed as category six for the analysis. An important theme noted in this category was the uptake of wellbeing interventions offered to nurses (Theme 20), where half of participants were aware of different interventions but did not feel the need to use them. This was because participants reported feeling more comfortable venting to their co-workers, or resolving the issue by themselves. Some also believed that interventions were not very helpful. On the other hand, half of the participants made use of different interventions offered to them, e.g. CBT, counselling, EAP, mindfulness, etc. Some nurses also reported feeling comfortable approaching their line managers/supervisors in order to discuss stressful events or wellbeing issues (Theme 21). Majority of participants felt their line managers were very approachable and supportive during difficult times; they were empathetic and encouraging which made nurses feel comfortable when opening up to them. However, issues pertaining to accessing wellbeing interventions was noted during the interviews (Theme 22). Related sub-themes included lack of time for taking part in any interventions, given the heavy workload; long waiting list or not knowing how to access the interventions also acted as a barrier; some even reported lack of awareness regarding the existence of such interventions available to them.

4.5 Integration of findings and implications

The aim of the current study was to understand the impact of stress on the psychological wellbeing and aspects of work performance among nurses working in the UK NHS, along with understanding the role of EI as a moderator and mediator in the relationship between stress and work performance. Adopting mixed methodology for data collection and analysis helped in understanding a more holistic picture and helped adding depth and breadth to the study. As mentioned previously, prior results on the relationship between stress and aspects of work performance among nurses were mostly derived from quantitative methods of data collection. Evidence has highlighted that the presence of mixed-method studies in nursing is only 1.9%, despite the benefits of adopting mixed-methods (Younas et al., 2019). In addition, the systematic reviews on nursing-related literature comprising of 20 papers (Aronowitz et al., 2020), and 16 papers (Ma et al., 2021), identified only one mixed-method paper. Furthermore, two mixed-methods reviews by Jarva et al. (2021) and Singh et al. (2020) revealed that out of 48 papers, not a single mixed-method paper was found on nursing related

research. This clearly highlights an urgent need to understand research questions from both perspectives in order to add more depth to the existing data (Creswell, 2014), which this study took into account.

The quantitative results derived from regression analysis indicated a marginally significant positive relationship between stress and impaired work performance; the presence of stress led to impaired work performance among nurses working in the NHS. Similarly, a significant negative relationship was reported between stress and work satisfaction; stress led to reduced work satisfaction among nurses. Previous quantitative studies have highlighted a significant negative relationship between stress and work performance, where higher stress led to reduced work performance (Westman and Eden, 1996; Jamal, 1984; Levek and Jones, 1996; Motowidlo et al., 1986; AbuAlRub and Al-Zaru, 2008; Coffey et al., 1987; Machado et al., 2018; Happell et al., 2013). Also, prior literature has demonstrated a negative linear relationship between stress and work satisfaction among nurses (Joshua et al., 2020; Labrague et al., 2016; Jones et al., 2003; Dielman et al., 2003; Cartledge, 2001; Jones et al., 1996). Therefore, findings of the current study are consistent with prior literature. Findings reported no significant relationship between stress and absenteeism/presenteeism; however, a significant relationship was found between stress and overall activity impairment outside work. This could be attributed to the fact that stress has adverse consequences in maintaining a positive work-life balance, in addition to loss of interest in activities that once felt enjoyable (Schneiderman et al., 2005; Portman, 2009). Therefore it is imperative to take into account the personal commitments of nurses, beyond their accountability towards patients and other organisational duties (Poulose and Sudarsan, 2017). Upon conducting moderation/mediation analysis, it was found that EI did not moderate the relationship between stress and work performance with respect to the current sample. However, EI partially mediated the relationship; which denoted that EI might account for the relationship between partially between stress and work performance in nurses.

The added qualitative findings derived from semi-structured interviews, helped tapping on aspects that were not covered via the quantitative method of data collection. As the current study commenced in the midst of the global pandemic, the questionnaires did not take into account stressors related to COVID-19. However, information gathered through interviews helped gain further insight to the various stressors and challenges that nurses experienced on a daily basis, whilst forming a clear distinction between stressors experienced before and

during/post COVID-19. In addition, although the findings above indicated a significant positive relationship between stress and impaired work performance among nurses, further investigation through interviews gathered data on the minute aspects of how stress impacted the work performance of nurses, e.g. reduced concentration, poor memory, making errors, poor decision-making, inability to multitask, low energy levels, limited attention span, feeling dazed and exhausted, feeling less compassionate towards patients, difficulties prioritising tasks, feelings of frustration with other colleagues or comparing oneself to others, missing important deadlines, and forgetting relevant information related to patients. Also, the qualitative findings took into account not just the impact of stress on work performance, but also the effects of stress on aspects related to the psychological wellbeing of nurses, e.g. adverse effects on mood, thoughts of quitting, depression and anxiety, issues related to sleep and appetite, and difficulties switching off. Furthermore, given that stress is inevitable in the nursing profession, and given the adverse effects of stress on the psychological wellbeing and work performance among nurses, it is crucial to understand the importance of coping strategies (Lim and Bogossian, 2010; [Ahangarzadeh Rezaei, Shams, and Saghi Zadeh, 2008](#)). As mentioned previously, coping mechanisms play a pivotal role when dealing with stressful situations; therefore, the current study gathered in-depth data (through interviews) on what coping mechanisms nurses adopted in order to deal with stress. Findings revealed a variety of coping strategies used by nurses, e.g. seeking social support, offering support and empathy, taking regular breaks, having a day planner, engaging in physical activities and hobbies, venting, relaxation techniques, seeking professional help, medications, avoiding confrontation, avoiding difficult people at work, worrying about the situation, and keeping things to oneself. Results reported that majority of participants preferred seeking support from colleagues and seniors when dealing with professional or even personal issues. This is because nurses felt that taking support from seniors or colleagues helped them overcome various work-related challenges; given that the senior nurses would have more expertise in the area and therefore provide the correct advice. Similar findings have been noted in previous literature where social support has been a common strategy used by many nurses for dealing with stress (Jahanshahi et al., 2014; Callaghan, Tak-Ying, and Wyatt, 2000; Makie, 2003; Lambert et al., 2004; Chang et al., 2006; Beh and Loo, 2012). These findings indicate an urgent need for creating a healthy work environment, wherein factors contributing to stress are reduced and the use of effective coping mechanisms are enhanced. This can be achieved through appropriate policies and procedures in place by nurse administrators;

educators can also contribute towards increasing nurses' awareness regarding strategies for reducing stress and adopting effective coping behaviours.

An important aspect derived from qualitative findings, thereby contributing to the existing body of literature, are the thoughts and opinions of nurses regarding the NHS work environment. While nurses reported that they perceived their current job as rewarding and satisfactory; however, results also revealed lack of perceived organisational support. Prior literature has demonstrated a positive impact of organisational support on the work satisfaction of nurses (Chevalier et al., [2017](#); Shao, Zhang, and Chen, [2016](#); Sharif, Ahadzadeh, and Nia, [2018](#)). This is because organisational support allows nurses to perceive a strong sense of security and belonging, where they feel valued and respected for their contributions (Eisenberger, Armeli, Rexwinkel, Lynch, and Rhoades, [2001](#)). Given that nurses are exposed to high levels of stress due to overwhelming workload, they require appropriate support from the management, and the society. Therefore, perceived organisational support helps nurses feel accepted by the organisation; they also feel motivated and devoted to their work and not look for alternative career opportunities (Liu and Liu, [2016](#)). Another important factor taken into consideration were nurses' opinions regarding the provision of wellbeing interventions offered by the NHS. The qualitative findings revealed certain barriers for the uptake of interventions; this included lack of time given the hectic work schedule of nurses, lack of awareness on the availability of such interventions, perceiving these interventions as unhelpful when dealing with stress, long waiting lists, uncertainty on how to access the interventions, or displaying preference for approaching line managers for discussing professional and personal issues.

The above findings, from both the quantitative and qualitative data, can further be correlated with the Job-Demands - Resources Theory (Bakker and Demerouti, 2011) as discussed previously. Bearing in the mind the findings of Study 1, HCPs and nurses in particular, undergo several job demands on a daily basis such as high workload, shortage of staff, high patient demand coupled with the emotional demands of dealing with ill patients; along with certain other organisational challenges, for instance lack of space, noisy environment, overcrowding, redeployment; and not to forget the added stress of COVID-19 as mentioned above. As noted in the quantitative results, such stressors (or demands) can lead to impaired work performance along with reduced work satisfaction. The added qualitative findings also demonstrated how such demands can influence one's overall psychological wellbeing (in

terms of low moods, of frustration, difficulty switching off, anxiety, depression, lifestyle changes, and negative work-life balance); along with aspects related to impaired work performance (in terms of inefficient delivery of tasks, poor decision making skills, concentration difficulties, limited attention span, increased errors, forgetting important information, and feelings of frustration towards other colleagues). Given the crucial role of personal resources, this study highlighted the importance of coping strategies for dealing with the negative consequences of job demands, and improving one's psychological wellbeing and work performance. As mentioned above, nurses adopted a variety of coping mechanisms to deal with stress (in terms of seeking social support, having good communication with patients and relatives, taking regular breaks, making notes to feel more organised, and engaging in physical and leisure activities). Further, given that EI is an important aspect of coping, and a crucial personal resource according to the JD-R model (Bakker and de Vries, 2020); results demonstrated how EI mediated the buffering effects of stress on the work performance in nurses, confirming the significance of personal resources. In addition to personal resources, it is equally important to consider job resources, as it is the foundation of the JD-R model. With regard to job resources, as highlighted in the study findings, some participants reported receiving adequate support from line managers and the organisation as a whole. However, some reported not receiving enough recognition or support from the higher management; some felt the need for further resources in place (in terms of better communication, increased job recognition, more beds, and increased funding).

Therefore, findings of the current study have considered the practical implications in terms of enhancing the work performance and psychological wellbeing of NHS nurse employees. There is a crucial need for protective measures at both individual and organisational levels; at the individual level, use of effective coping strategies are important focal points of intervention in order to mitigate the adverse effects of stress on aspects of work performance and psychological wellbeing. At the organisational level, providing optimal support by the higher management, particularly during unforeseen circumstances such as COVID-19, can help nurses remain motivated. This support can also be provided in the form of appropriate wellbeing interventions, thereby allowing nurses to feel better equipped to deal with stress and also improve their psychological wellbeing. Furthermore, certain recommendations were offered by nurses in the current study, which could potentially contribute towards a healthy work environment. First, there is a highlighted need for better communication between the

higher management and employees, thereby fostering a climate of trust. Second, there is an urgent requirement for additional resources in order to ensure smooth functioning of the hospitals., e.g., more funding, more beds to avoid overcrowding, and more trained staff on wards. Finally, nurses need to feel more recognised for their contributions towards their patients and society. Prior literature has highlighted that job recognition is a major source of stress for nurses (Stacciarini and Troccoli, 2004). Studies have also demonstrated that nurses who feel recognised for their work feel less stressed and consequently perform better at various tasks (AbuAlRub and Al-Zaru, 2008; Dielman et al., 2003).

4.6 Strengths and limitations of the study

The current study is one of the first few to examine the impact of stress on aspects of psychological wellbeing and work performance among nurses working for the NHS UK. As opposed to previous studies, which mostly examined this relationship through quantitative methods of data collection, the current study adopted a mixed-method approach in order to gain an in-depth understanding and analysis of results from a both quantitative and qualitative perspective. This study also sheds light on the significance of coping strategies to help nurses deal with stress; along with a need for training nurses with EI given its benefits in terms of reducing stress and improving one's work performance. Furthermore, this study acknowledged nurses' thoughts and opinions regarding the NHS work environment, thereby offering appropriate recommendations to ensure the smooth functioning of the organisation and improve the psychological wellbeing of nurses and NHS healthcare employees generally. Finally, the presence of high stress among NHS nurse employees, bearing in mind the unfortunate circumstances of COVID-19, the study highlighted an urgent need for providing appropriate and effective psychological wellbeing interventions by the NHS organisation.

Despite the valuable contributions of the current study, certain limitations have also been acknowledged. First, the research population of this study was confined to nurses working in the Nottingham University Hospitals and the Nottinghamshire Healthcare Foundation Trust. Therefore, findings of the study cannot be generalised to a larger nurse population working in other hospitals across the country. Second, the study adopted a cross-sectional design, thereby making it difficult to derive the cause-effect relationship among variables given that the data is captured at a single point in time. Third, the scope of this study comprised the general nurse population and did not distinguish between nurses working in different sectors and departments within the hospital. Fourth, the quantitative results obtained via the online survey platform cannot be generalised, as participants are limited to those who display high

enthusiasm to participate voluntarily. Fifth, the demographic characteristics of participants were not included as variables in the study. For example, differences in age, gender, years of nursing experience, marital status, or ethnicity were not taken into consideration when conducting the analysis. Sixth, the current study focused on the psychological impact of stress, while neglecting aspects of physical wellbeing among nurses.

4.7 Future directions

The findings of the current study can pave way for future researchers to investigate the presence of stress, and its consequences on psychological wellbeing and work performance, among different cohorts of nurses within the NHS. Additionally, more mixed-method studies are required on a wider sample; expanding the scope to general healthcare employees, and not limited to the nursing population. Furthermore, there is a need for more intervention studies to reduce the psychological effects of stress among nurses working in the NHS.

4.8 Conclusions

Given that the NHS is the largest employer in the UK providing free healthcare to all citizens of the country, the presence of high stress levels among employees is inevitable. This is particularly true for nurses, providing frontline care to patients even during high-pressure conditions such as COVID-19. After looking into the negative effects of stress on the psychological wellbeing and work performance among NHS nurses, there is a continual need for raising awareness regarding these issues, and for the NHS organisation to address them in a proactive manner. Training nurses with EI and effective coping behaviours are deemed as a crucial requirement to mitigate the negative effects of stress. Also, this study calls for an urgent need to develop and implement effective psychological wellbeing interventions, along with increasing nurses' awareness regarding the availability of such interventions offered to them. After all, nurses are the most important resource to any healthcare organisation; therefore, maintaining and supporting their mental health and psychological wellbeing is vital to ensure the continuous delivery of high quality of care to patients.

CHAPTER 5: MINDFULNESS-BASED COGNITIVE THERAPY AS A WELLBEING INTERVENTION FOR NHS STAFF: A MIXED-METHOD STUDY (STUDY 2)

5.1 Background

Within the NHS, there is a rapidly developing crisis with regard to employees' mental health and psychological wellbeing (West et al., 2018). Dealing with large number of patients, working for long hours, and ongoing organisational changes places heavy demands on the healthcare employees. Such conditions have devastating consequences in terms of increased stress levels and burnout among HCPs, consequently impacting the quality of care (Montgomery et al., 2019). This crisis has been further exacerbated given the current circumstances of COVID-19 as healthcare employees have to work in the frontline (Bohlken et al., 2020). The impact of the pandemic on mental health and psychological wellbeing among HCPs highlights an urgent need to find effective, accessible and acceptable means of supporting these employees in order to build their resilience and prioritise self-care (Bohlken et al., 2020). However, a promising means by which the HCPs working in the NHS can help themselves is by adopting mindfulness skills (West et al., 2018), as they provide an effective, accessible and acceptable means for reducing stress, and improving psychological wellbeing (Strauss et al., 2021). There is a growing body of knowledge on MBIs which play a crucial role in reducing staff stress and burnout; along with improving one's quality of life and psychological wellbeing (Mistry, 2019). Here, mindfulness refers to the "quality of consciousness or awareness which is a result of attending to the present moment in a non-judgemental and accepting manner" (Kabat-Zinn, 1994, p. 4). The recent popularity of mindfulness in psychology is largely due to the widespread application of interventions based on mindfulness (MBIs). Such interventions combine the traditional mindfulness practices with contemporary psychological practices for improving overall wellbeing and psychological functioning (Gu et al., 2015).

Referring back to the JD-R theory, people vary in the personal resources they use to deal with challenging work situations; these personal resources are unique individual attributes which reflect how people use job resources to deal with job demands (Bakker and Demerouti, 2007; Demerouti et al., 2001; Xanthopoulou, Bakker, Demerouti, and Schaufeli, 2011).

Mindfulness has emerged as a novel and significant personal resource in the JD-R context as it influences how people perceive job demands and reply resources, thereby affecting the degree of stress experienced (Grover et al., 2016). Mindful individuals are better able to focus on immediate job demands, which enhances their capabilities of utilising appropriate job resources; whereas less mindful individuals tend to focus less on the present, which diverts the attention to problems and possibilities in the distant future, or even in the past (Grover et al., 2016).

One of the most extensively employed and evaluated MBIs is mindfulness-based cognitive therapy (MBCT), which is a group-based therapy where individuals are taught mindfulness skills through various formal and informal practices over the course of eight weeks (Segal et al., 2002). MBCT incorporates elements of cognitive therapy which include awareness of negative thoughts and understanding them, and connection between thoughts, actions and emotions. Instead of examining the evidence for and against these thoughts as in cognitive therapy (Beck et al., 1979), MBCT involves metacognitive awareness to thoughts, perceiving them as passing events (Segal et al., 2013). Originally, MBCT was designed as a relapse prevention programme for individuals who had more than three episodes of depression (Ma and Teasdale, 2004; Segal et al., 2013). It is grounded in mindfulness-based stress reduction (MBSR; Kabat-Zinn, 2013), which is an intervention used to help individuals suffering from pain and anxiety. Therefore, healthcare professionals need to be aware of wellbeing interventions like MBCT, which can be adopted to improve their overall quality of life. Given that MBCT emphasises practising self-care techniques and improving quality of life, this intervention can be useful in reducing negative symptomatology of stress and fatigue among HCPs (Wood et al., 2014). In addition, because MBCT takes place in a group setting, it allows HCPs a chance to share their difficult experiences thereby increasing their coping mechanisms in order to decrease symptoms of stress, anxiety, and depression (Wood et al., 2014).

As depicted in the scoping review (Chapter 2) of this thesis, several studies have taken place with regard to MBIs aimed at NHS healthcare professionals, before and during the COVID-19 pandemic. Various personal and organisational outcomes have been highlighted as a result of undertaking these interventions. Results from a study by Turner (2013) reported an increase in self-compassion, increased awareness of one's emotions and the surrounding environment, focus on the here and now, and increased patient satisfaction as a result of MBSR. Another study based on a 6-week workplace-adapted mindfulness course by Krusege et al. (2019), reported increased mindfulness and decreased stress levels. Results from a feasibility study by Banerjee et al. (2017) revealed that stress reduction techniques, increased sense of control of thoughts, and engaging in shorter exercises were some of the key facilitators for participants to undertake mindfulness-based self-help. A more recent study by Strauss et al. (2021) demonstrated the effectiveness of MBCT-L; results revealed a significant reduction in stress, depression and anxiety, improved wellbeing, along with high

acceptability rates among NHS healthcare employees. With regard to MBCT per se, studies reported reduced perceived stress, increased self-compassion and ability to cope with stress, improved physical and emotional health and quality of work life; along with high levels of feasibility and acceptability was noted in a study by Marx et al. (2014). Another study by Graham (2014) reported reductions in sickness absence, stress, anxiety and depression among HCPs. Similarly, better decision-making abilities, increased mindfulness and improved wellbeing were highlighted in a study by Moorhead et al. (2016); reduced burnout and increased compassion towards patients were also reported (Jones, 2018). In addition, feeling relaxed, and the ability to work well under pressure were some other outcomes (West et al., 2018).

Since the onset of COVID-19, digital interventions have become increasingly popular offering several advantages such as increased accessibility, personalisation, anonymity, and higher efficacy (Bossi et al., 2022). A meta-analysis study by Spijkerman and Bohlmeijer (2016), conducted 15 randomisation trials, by comparing web-based mindfulness with control participants. The results found that internet-based MBI has a significant moderate impact on mental health. Another study by (Fish, Brimson and Lynch, 2016) reviewed technology-based mindfulness interventions, and its effectiveness in terms of stress, depression, and anxiety. Toivonen et al (2017) reviewed 16 web-based MBI and its effectiveness on the physiological symptoms and found that majority of the studies had a positive outcome in terms of pain acceptance, coping mechanism, and depression, as compared to the traditional treatments. Also, Sevilla-Llewellyn-Jones et al (2018) reviewed 12 studies on internet-based MBI for mental health and reported that these interventions were effective in reducing the symptoms of anxiety and depression, and enhancing the quality of life with increased mindfulness skills. Therefore, there is convincing evidence to show the effectiveness of digital interventions on psychological wellbeing, however, the evidence for effectively delivering such digital-based interventions to employees within the workplace is still unclear (Lehr et al., 2020). More research is required to determine the effectiveness and acceptability of digital interventions in terms of improved psychological wellbeing, and exploring the associations with a wider range of psychological and organisational outcomes (Holman, Johnson, O'Conner, 2018), particularly within the NHS workforce.

Given the importance of MBCT as a psychological wellbeing intervention for HCPs, particularly for NHS workforce, there are several gaps in the literature in terms of its

effectiveness, service satisfaction and delivery from the NHS employees' perspective. Further, literature on the effects of MBCT on the employees' and work performance is also scarce. In order to address these gaps, the current study evaluated the potential benefits of an eight-week MBCT programme in terms of psychological wellbeing, and work performance targeting NHS employees. Also, since this study adopted a mixed-method design, further information was obtained from the participants regarding their views of the mindfulness service and its delivery which helped in improving the future implementation of this programme. In addition, bearing in the mind the lockdown restrictions and social distancing protocols due to COVID-19, this programme was delivered remotely via Microsoft Teams.

5.2 Methods

5.2.1 Aims and hypotheses of the present study

The current study aims to evaluate the effectiveness of an eight-week MBCT programme offered to NHS employees using a mixed-method approach; wherein the quantitative aspect looks at the differences post-MBCT versus baseline in psychological wellbeing (stress, depression, mindfulness, and quality of life) through the administration of a pre/post set of questionnaires, while the qualitative aspect is intended to offer an in-depth understanding of the staff acceptability of the programme including its impact on the work performance of employees, through semi-structured interviews. The descriptive statistics; including the differences in scores for stress, depression, mindfulness, and quality of life will be presented in order to understand the effectiveness of the MBCT programme. Therefore, the hypotheses to be tested (for the quantitative analysis) are as follows:

- H1 – There will be a significant beneficial change in depression post the MBCT programme in NHS employees, as compared to baseline (before the programme commenced).
- H2 – There will be a significant beneficial change in perceived stress post the MBCT programme in NHS employees, as compared to baseline (before the programme commenced)

- H3 – There will be a significant increase in the level of mindfulness post the MBCT programme in NHS employees, as opposed to baseline (before the programme commenced).
- H4 – There will be a significant increase in the quality of life post the MBCT programme in NHS employees.

The research question (for the qualitative analysis) is:

- What is the perceived impact and acceptability of the MBCT programme?

5.2.2 Study design

This study adopted a mixed-method design for data collection and analysis. The quantitative part involved completing a set of self-report questionnaires (four questionnaires) conducted at baseline and post-intervention via JISC Online Surveys. These questionnaires measured aspects of wellbeing, including levels of mood, perceived stress, dispositional mindfulness, and quality of life. This was followed semi-structured interviews, which comprised the qualitative part of the study. Given the nature of the MBCT course and the number of participants that MS Teams platform can accommodate, this study was divided into groups (n=6) which commenced in May 2020 with the first group, and ended in March 2022 with the sixth group.

5.2.3 Participants

The study was carried out within the Nottinghamshire Healthcare Foundation Trust and the Institute of Mental Health. The sample size was pre-set; a total number of six groups were employed for the intervention over a period of two years during peak national lockdown (2020-2022). Also, the size of each group was pre-set with a maximum capacity of 15 participants, since the intervention took place online, via Microsoft Teams. The participants of this study included healthcare staff working in varied sectors within the above-mentioned locations. These healthcare employees were recruited independently of the current research on the MBCT programme after they had sought help with their wellbeing by accessing the Nottinghamshire Healthcare Foundation Trust ‘staff wellbeing hub’. This is an integrated care service, offered freely to staff in the healthcare and social care sectors through the Trust,

and delivered by specially trained MBCT therapists working in the Trust. Healthcare staff who registered for participating in the programme were approached (n=6 groups) via a study flyer. In total, n = 54 participants across all six groups were contacted (group 1 = 9 participants; group 2 = 9 participants; group 3 = 12 participants; group 4 = 10 participants; group 5 = 8 participants; group 6 = 6 participants).

5.2.4 Procedure

Recruitment for the study took place via a study poster which was handed out to participants on the MBCT ‘Taster’ session, before the first session commenced. Interested participants contacted the Chief Investigator in order to partake in the upcoming MBCT sessions. Participants were then contacted by the researcher via email; the email included a link to direct participants to the online survey platform (JISC Online Surveys) for questionnaire completion. The survey link included the ‘Participant Information Sheet’, to provide participants with in-depth details about the programme and study, followed by the ‘Consent Form’ before they could proceed to the questionnaire completion. All consented participants were requested to submit the questionnaire responses before the first day of the MBCT programme via the JISC Online Survey platform. The same set of questionnaires were then administered on participants upon completion of the MBCT programme, i.e. after completion of Session 8, questionnaire completion was repeated at follow-up. All participants who took part in the MBCT programme were then contacted again by the researcher to schedule a date/time for a short follow-up interview (regardless of whether they completed the pre-post set of questionnaires), which took place via Microsoft Teams. This study commenced on May 2020 with the first group of the MBCT programme, and ended in March 2022 with 6 MBCT groups in total. No stipend was offered to the participants to partake in this study.

5.2.5 Measures

Quantitative data

- i. Demographic Form: Demographic information was collected on age, gender, work status, marital status, and ethnicity.

- ii. Patient Health Questionnaire (PHQ-9): The PHQ-9 is a 9-item self-administered instrument which scores each of 9 items using a 4-point Likert scale from “0” (not at all) to “3” (nearly every day). This instrument is used for the diagnosis of depressive and other mental disorders which are commonly encountered in primary care (Kroenke, Spitzer and Williams, 2001). The internal consistency as assessed by Cronbach’s Alpha (α) is 0.83 (Hummash et al., 2013)
- iii. Perceived Stress Scale (PSS): The PSS is a 14-item questionnaire to measure the degree to which one’s life situations are appraised as stressful. This instrument shows high reliability and validity (Cohen, Kamarck and Mermelstein, 1983). The reverse scores items include 4, 5, 6, 7, 9, 10, and 13. This questionnaire measures the degree to which individuals perceive their life as uncontrollable, and unpredictable, and also displays high internal consistency measured by Cronbach’s Alpha (α) of 0.70 (Andreou et al., 2011). The score ranges from 0 (no stress) to 56 (high stress) with higher scores indicating higher stress.
- iv. The Five-Facet Mindfulness Questionnaire (FFMQ): The FFMQ is a 39-item instrument which measures five factors such as “observing” (noticing or attending to internal experiences, for example, sensations, cognitions, sounds and smells), “describing” (which involves labelling internal experiences with words), “acting with awareness” (which involves attending to the activity of the moment), “non-judging of inner experiences” (which involves evaluating thoughts and feelings in a non-judgmental manner), and “nonreactivity to inner experience” (which allows attending to thoughts and feelings without getting carried away by them) (Baer et al., 2008). The reverse score items include 3, 5, 8, 10, 12, 13, 14, 16, 17, 18, 22, 23, 25, 28, 30, 34, 35, 38, 39. This questionnaire displays high internal consistency measured by Cronbach’s Alpha (α) in the range between 0.73 – 0.91 (Choi, 2015).
- v. The World Health Organisation Quality of Life (WHOQOL-BREF): The WHOQOL questionnaire is administered to measure four domains of quality of life which includes physical health, psychological health, social

relationships, and environment; and one facet which measures the overall general health (THE WHOQOL GROUP, 1998). This instrument demonstrates good internal consistency measured by Cronbach's Alpha (α) in the range between 0.775 – 0.82 .

(Qualitative data)

Interview: The questionnaire completion was followed by a semi-structured interview for all participants enrolled in the MBCT programme; 24 participants agreed to take part in the interview. Given the current circumstances of COVID-19, interviews were held over Microsoft Teams, depending on the participants' convenience; each interview lasted between 20-30 minutes per participant. The interview commenced with building a rapport between the researcher and participants, in order to ensure they feel comfortable. The structure of the interview included some open-ended questions to begin with, e.g. "what did you like about the MBCT programme", followed by more close ended questions, e.g. "what aspects of MBCT training did you find the most useful and why" (please see the complete "interview guide" in the Appendices, p.419). It was explained to the participants that entry into the study was entirely voluntary and that participation in the first part of the study (questionnaires) will not necessitate their participation in the second part of the study (interviews). Participants were also reassured that they could withdraw at any point, or not feel obligated to answer any questions if they were not comfortable to do so. In case any participant felt upset during the interview, the researcher would stop the interview and suggest that participants see their GP.

5.2.6 Data analysis

The quantitative data gathered from the questionnaires was scored and tabulated on excel spreadsheets. This data was then analysed using SPSS V.28 software (using Wilcoxon Signed-Rank test). For the qualitative part of the study, interview audio/videos were transcribed automatically via the transcription facility embedded into the online platform. Data was analysed using the 6-step procedure of thematic analysis by Braun and Clarke (2006). See Methodology (Chapter 3) for further details.

5.2.7 Ethical considerations

Consent was taken electronically through JISC Online Surveys for both the questionnaire and interview completion. All participants, regardless of the questionnaire completion, were contacted for a follow-up interview. Participants who responded to the email and displayed interest in the interview, were allotted a date/time as per their convenience. Given that the online, remote MBCT version was newly introduced for use in this population, if participants felt (throughout or upon completion of the programme) that the online mode was not suitable for them, they could choose to withdraw from the programme and subsequently from either or both parts of the study (questionnaire completion and interviews).

5.3 Results

5.3.1 Quantitative results

Questionnaire data was collected via JISC online survey. Out of 54, n= 43 participants in total (from all six groups) consented to take part in the study. Also, n = 3 participants dropped out of the MBCT programme (group 1 = 1 participant; group 5 = 1 participants; group 6 = 1 participant). Further, n = 12 participants did not complete the pre/post set of questionnaires and were, therefore, excluded from the final analyses (group 1 = 2 participants; group 2 = 1 participant; group 3 = 2 participants; group 4 = 4 participants; group 5 = 3 participants). In total, n = 28 participants (across all six groups) took part in the intervention, and completed the pre and post set of questionnaires (group 1 = 6 participants; group 2 = 6 participants; group 3 = 7 participants; group 4 = 5 participants; group 5 = 1 participant; group 6 = 3 participants). The raw scores of all 4 questionnaires (both pre and post) were extracted from the online survey platform to Microsoft Excel for scoring purposes. Reverse scores were obtained for questionnaire PSS-14 (stress) on items 4, 5, 6, 7, 9, 10, and 13; FFMQ (mindfulness) on items 3, 5, 8, 12, 13, 16, 18, 23, 28, 34, 38, 22, 10, 14, 17, 25, 30, 35, and 39; WHOQOL (quality of life) on items 3, 4, and 26.

5.3.1.1 Demographic details

The table below highlights the demographic characteristics of the participants including their age, gender, work-status, marital status and ethnicity (n=28).

Table 7: Demographic characteristics

Demographics	N	Percentage	Mean	SD
<i>Age</i>	28		39.93	10.94
<i>Gender</i>				
Female	23	82.1%		
Male	5	17.9%		
<i>Work-Status</i>				
Full-Time	20	71.4%		
Part-Time	8	28.6%		
<i>Marital Status</i>				
Married	15	53.6%		
Divorced	1	3.6%		
In a Relationship	8	28.6%		
Single	4	14.3%		
<i>Ethnicity</i>				
White, Not Hispanic	25	89.3%		
Black, Not Hispanic	1	3.6%		
Asian	1	3.6%		

5.3.1.2 Descriptive statistics

The table below highlights the descriptive statistics of all variables (pre and post) used to measure quantitative data – Depression (PHQ-9), Stress (PSS-14), Mindfulness (FFMQ), and Quality of Life (WHOQOL).

Table 8: Descriptive Statistics

Questionnaire	Mean	Median	Std. Deviation	Skewness	Kurtosis
Patient-Health Questionnaire 9 (Pre)	9.79	9	5.97	0.441	0.858
Patient-Health Questionnaire 9 (Post)	5.75	4	4.29	0.975	0.211
Perceived Stress Scale – 14 (Pre)	29.43	29	7.75	- 1.230	5.109
Perceived Stress Scale – 14 (Post)	21	20	8.16	0.298	0.333
Five Facet Mindfulness Questionnaire (Pre)	108.50	104	14.77	0.713	- 0.060
Five Facet Mindfulness Questionnaire (Post)	136.29	141	16.83	- 0.091	0.210
World Health Organisation Quality of Life Brief (Pre)	90.36	89	13.39	- 0.716	1.691
World Health Organisation Quality of Life Brief (Post)	100.57	103.50	13.11	- 1.158	1.909

5.3.1.3 Normality of data

In order to analyze the distribution of the data, the Shapiro-Wilk test was used. The reason for choosing this test is due to the small sample size ($n > 28$). Results on the variables of PHQ-9 (Pre) = .95, $p < 0.193$; PHQ-9 (Post) = .891, $p > 0.007$; PSS-14 (Pre) = .877, $p > 0.004$; PSS-14 (Post) = .976, $p < 0.734$; FFMQ (Pre) = .938, $p < 0.096$; FFMQ (Post) = .943, $p < 0.128$; WHOQOL (Pre) = .949, $p < 0.192$; WHOQOL (Post) = .910, $p > 0.020$. The above results indicate that data for some variables are fairly normally distributed (Pre PHQ-9;

Post PSS-14; Pre FFMQ; Post FFMQ; and Pre WHOQOL). However, data on other variables indicated deviation from the normal distribution (Post PHQ-9; Pre PSS-14; and Post WHOQOL). Based on this outcome, also bearing in mind the inspection of q-q plots and histograms (please refer to appendices for the histograms and qq-plots, figures 32-35, p.420), a non-parametric test was adopted (Wilcoxon Signed-Ranks Test) to carry out the analytical procedures, in order to test the aforementioned hypotheses.

5.3.1.4 Nonparametric tests for assessing pre/post questionnaire data

By using the Wilcoxon Signed-Ranks Test, results indicated that the median post-test scores of depression (Mdn = 4) were significantly lower than the pre-test scores (Mdn = 9; $Z = 17$; $p < 0.001$) as reported in the table below. In other words, participants' level of depression decreased post the MBCT programme, thereby supporting hypothesis 1 (there will be a significant change in depression post the MBCT programme in NHS employees, as compared to before the programme commenced).

Figure 14: PHQ-9 Pre/Post
Related-Samples Wilcoxon Signed Rank Test
Summary

Total N	28
Test Statistic	17.000
Standard Error	32.833
Standardized Test Statistic	-3.685
Asymptotic Sig.(2- sided test)	<.001

Similarly, the median post-test scores of stress (Mdn = 20) were significantly lower than the pre-test scores (Mdn = 29; $Z = 6.500$; $p < 0.001$) as reported in the table below. In other words, participants' level of stress decreased post the MBCT programme, thereby supporting hypothesis 2 (there will be a significant difference in perceived stress post the MBCT programme in NHS employees).

Figure 15: PSS-14 Pre/Post Related-Samples Wilcoxon Signed Rank Test Summary

Total N	28
Test Statistic	6.500
Standard Error	39.346
Standardized Test Statistic	-4.295
Asymptotic Sig.(2-sided test)	<.001

The median post-test scores of mindfulness (Mdn = 141) were significantly higher than the pre-test scores (Mdn = 104; $Z = 406.00$; $p < 0.001$) as reported in the table below. In other words, participants' level of mindfulness increased post the MBCT programme, thereby supporting hypothesis 3 (there will be a significant increase in the level of mindfulness post the MBCT programme in NHS employees).

Figure 16: PSS-14 Pre/Post Related-Samples Wilcoxon Signed Rank Test Summary

Total N	28
Test Statistic	406.000
Standard Error	43.903
Standardized Test Statistic	4.624
Asymptotic Sig.(2-sided test)	<.001

Similarly, the median post-test scores of quality of life (Mdn = 103) were significantly higher than the pre-test scores (Mdn = 89; $Z = 330.00$; $p < 0.001$) as reported in the table below. In other words, participants' quality of life increased post the MBCT programme, thereby supporting hypothesis 4 (there will be a significant increase in the quality of life post the MBCT programme in NHS employees).

Figure 17: FFMQ Pre/Post Related-Samples Wilcoxon Signed Rank Test Summary

Total N	28
Test Statistic	330.000
Standard Error	39.341
Standardized Test Statistic	3.927
Asymptotic Sig.(2-sided test)	<.001

5.3.2 Qualitative results

All participants (regardless of whether they completed the questionnaires) were contacted for a follow up interview by the researcher; a total of 24 participants took part in the interview, which was again conducted over MS Teams.

5.3.2.1 Demographic details

Twenty-four (n=24) semi-structured interviews were conducted among participants working in the NHS, until thematic saturation was achieved. Out of 24 participants, n= 7 participants worked part-time and n= 16 were full-time employees. The participants interviewed comprised of n= 4 male employees and n= 20 female employees in the age range of (M= 40.59; SD=11.304).

Table 9: Demographic characteristics of participants interviewed (n=24)

Participant	Age (Years)	Gender	Work-Status	Sector	Interview ID
1	28	Female	Full-Time	Forensic Psychologist	Group 1 Participant 4

2	36	Female	Part-Time	Mental Health Facilitator	Group 1 Participant 8
3	50-55	Male	Full-Time	Applied Information Manager	Group 1 Participant 2
4	28	Male	Full-Time	Trainee Clinical Psychologist	Group 1 Participant 3
5	35	Female	Full-Time	Trainee Nursing Associate	Group 1 Participant 5
6	29	Female	Full-Time	Occupational Therapist	Group 1 Participant 7
7	58	Female	Full-Time	Practice Development Lead	Group 2 Participant 5
8	27	Female	Part-Time	Speech and Language Therapist	Group 2 Participant 4
9	43	Female	Full-Time	Debtors Assistant	Group 2 Participant 1
10	60	Female	Full-Time	PA to Area Manager	Group 2 Participant 2
11	47	Female	Part-Time	Employment Specialist	Group 2 Participant 3

12	52	Female	Part-Time	Peer and Family Worker	Group 2 Participant 6
13	25	Female	Full-Time	Assistant Psychologist	Group 3 Participant 3
14	34	Female	Full-Time	Physiotherapist	Group 3 Participant 2
15	46	Female	Full-Time	Assistant Practitioner	Group 3 Participant 1
16	50	Female	Full-Time	Community Psychiatric Nurse	Group 3 Participant 4
17		Female			Group 1 Participant 1
18	55	Female	Full-Time	Assistant Community Practitioner	Group 1 Participant 6
19	53	Male	Full-Time	Clinical Academic Physiotherapist	Group 4 Participant 3
20	39	Female	Part-Time	Education Mental Health Practitioner	Group 4 Participant 4
21	30	Male	Full-Time	Community Psychiatric Nurse	Group 4 Participant 1

22	49	Female	Part-Time	Personal Secretary	Group 4 Participant 2
23	27	Female	Full-Time	Senior Physiotherapist	Group 6 Participant 2
24	42	Female	Part-Time	Mental Health Practitioner	Group 6 Participant 1

5.3.2.2 Thematic analysis findings

The themes emerging from interviews were divided into three broad categories, which were further divided into relevant sub-themes. The first category highlighted the thoughts and perceptions of participants regarding the delivery of the MBCT programme (nine themes and related sub-themes). The second category shed light on the perceived impact of the MBCT programme on the wellbeing and work performance of participants (four themes and related sub-themes). The third category noted the recommendations offered by participants for improving the MBCT delivery (two themes and related sub-themes). By following the streamlined process, certain themes noted were not deemed as important; hence they were omitted in order to have fewer and more concise themes that are more related to the research question (please find the attached codebook in the appendices, p.424).

Table 10: Overarching themes and related sub-themes emerged from the data of the total sample (n=24) interviewed.

Categories	Themes	Sub-Themes
Category 1: Perceived thoughts on the delivery of the MBCT programme	Theme 1: The efficient delivery of information during the course encouraged engagement from participants	
	Theme 2: The therapist's approach towards the	Sub-Theme 2.1: The manner and teaching style adopted

efficient delivery of the MBCT programme played a crucial role in building a rapport with participants

by the therapist made participants feel welcome to the programme

Theme 3: Participants' views on the remote delivery of the MBCT course via Microsoft Teams were mixed

Sub-Theme 3.1 : Preference for undertaking the course in a physical environment than online

Sub-Theme 3.2 : Feeling connected to one another even though the sessions were conducted online

Theme 4: Adopting varied techniques during the MBCT training deemed as extremely beneficial

Sub-theme 4.1: The body scan technique was perceived as means for improving one's overall wellbeing

Sub-Theme 4.2: Mindfulness with movement was another popular and beneficial technique which helped with relaxation

Sub-Theme 4.3: Feeling relaxed after adopting the breathing exercises on a daily basis

	Sub-Theme 4.4: Displaying a strong preference for sitting mediation techniques
Theme 5: The pressure to open up to other group members caused hesitation to share experiences	Sub-Theme 5.1: Participants feeling disappointed due to lack of commitment towards the programme by other group members
Theme 6: Feeling comfortable being a part of the group, thereby allowing a smooth flow of interaction among participants during sessions	Sub-Theme 6.1: Given the reasonable size of the group, participants felt more engaged as compared to if the group was larger or smaller
Theme 7a : Given one's hectic work schedule, lack of commitment towards homework was noted	
Theme 7b: Homework was perceived to be helpful and manageable	
Theme 8: Various issues being reported with regard to the nature of training	Sub-Theme 8.1: Participants displaying a preference for shorter exercises than the longer ones

		<p>Sub-Theme 8.2: The length of the sessions made it difficult to sit through, thereby affecting one's concentration</p> <p>Sub-Theme 8.3: Exhibiting dissatisfaction towards the timing of the sessions</p>
	<p>Theme 9: Having a safe space to work upon oneself during and after the sessions allowed participants to have an overall positive view about the programme</p>	<p>Sub-Theme 9.1: Being introduced to different practices and techniques helped feel engaged with the programme</p>
<p>Category 2: Perceived impact of the MBCT programme on overall wellbeing and work performance</p>	<p>Theme 10: Significant reductions in stress levels as a consequence of increased awareness</p>	<p>Sub-Theme 10.1: Feeling calm and relaxed resulting in better mood and improved personal wellbeing</p> <p>Sub-Theme 10.2: Experiencing a positive work-life balance post MBCT training</p>
	<p>Theme 11: The MBCT sessions served as an essential tool for improving one's work performance</p>	<p>Sub-Theme 11.1: Increased concentration and efficient delivery of tasks at work served as a crucial outcome of the programme</p>

Sub-Theme 11.2: Enhanced organisational skills and ability to manage the workload

Theme 12: The MBCT programme played a fundamental role as a coping strategy for participants to deal with the daily stressors

Sub-Theme 12.1: Having increased awareness of oneself and the surroundings enabling participants to switch off from auto-pilot

Sub-Theme 12.2: Appreciating the moment helped in diverting one's mind during stressful situations

Sub-Theme 12.3: Improved ability to handle difficult circumstances

Sub-Theme 12.4: Increased mindfulness leading to having a positive outlook to life

Theme 13: MBCT training helped cope with the pressures pertinent to COVID-19

Category 3: Recommendations offered for improving the delivery of MBCT programme	Theme 14a: Alterations required in certain aspects of the MBCT delivery	Sub-Theme 14.1a: Requires increased awareness regarding committing to the programme
	Theme 14b: Participants reporting no suggestions for improving the programme	
	Theme 15: Upon feedback, all participants reported recommending the MBCT programme to other co-workers	

Category 1: Perceived thoughts on the delivery of the MBCT programme

Theme 1: The efficient delivery of information during the course encouraged engagement from participants

Participants appreciated the structure of the MBCT programme along with the presentation style; they like the fact that the content provided to them was varied and useful. The material provided to them before each session was well written and not too wordy which made it easily readable. Also, the interactions amongst everyone was very engaging.

“Um, I think what I liked was the range within the course, um, like the eight sessions, it felt like the content within it was like quite varied and applied to different areas of life, which could be utilized in different ways. So there's some short kind of drop-in things, and then there's like the longer meditations that you could do and kind of plan into your week as well. So yeah having the variety of things going along was helpful” G1, P7, Female, 29 Years

“Um, but yeah, it was interactive and we had lots of discussions, so yeah. Enjoyed like the discussion side of it” G2, P3, Female, 47 Years

Theme 2: The therapist's approach towards the efficient delivery of the MBCT programme played a crucial role in building a rapport with participants

Given that the therapist/facilitator plays a crucial role on the efficient delivery of the MBCT programme; all participants reported positive feelings and opinions towards their therapist who conducted the programme each week.

Sub-Theme 2.1: The manner and teaching style adopted by the therapist made participants feel welcome to the programme

Participants reported that the therapist was very mindful and had a calm personality which helped in building a good rapport formation during the sessions. Their knowledge and experience regarding MBCT encouraged the participants to remain engaged with the programme. They also found the facilitators very approachable and compassionate towards all members of the group.

"I think the facilitators, I think they were so like, compassionate in how they kind of approached everyone and, and sort of really took the time to, like, make sure that everybody understood and like, they understood everyone, and just was so kind of, like nice and welcoming" G3, P3, Female, 25 Years

"I really like the main facilitator, I felt that he was really just sort of really easy to sort of speak to and, um, came across really authentically and made you kind of want to invest. He seems extremely mindful. So kind of make you think, Oh, if I do it for years, maybe I can, I can come across as calm as he does" G1, P1, Female

Theme 3: Participants' views on the remote delivery of the MBCT course via Microsoft Teams were mixed

Given the current circumstances of COVID-19, and bearing in mind the social distancing protocols, the delivery of the MBCT course took place via Microsoft Teams (MS Teams). Half of the participants reported they were comfortable using MS teams and found it more convenient, whereas the other half preferred being in a classroom setting for undertaking the MBCT programme rather than online.

Sub-Theme 3.1 : Preference for undertaking the course in a physical environment than online

Several reasons were pointed out for preferring a physical environment rather than taking it online via MS Teams. This is because some participants felt conscious of the camera, some did not feel comfortable with breakout rooms over teams, and sometimes connectivity was an issue which came in the way of interacting with other participants.

“Using teams was challenging sometimes because obviously it meant that we couldn't have sort of small group discussions or, or say anything to anybody that. You wouldn't say to everybody, if that makes sense” G1, P1, Female

“I didn't feel like I could talk as much because the one time that I tried, I don't know if it was my connection or my accent or what, but it was really difficult to make her understand what I was saying” G2, P1, Female, 43 Years

Sub-Theme 3.2 : Feeling connected to one another even though the sessions were conducted online

Due to hectic work schedule of participants, some participants exhibited preference for taking the course online. Also, participants felt that they were less conscious as they were in the comfort of their own homes while taking the course, as compared to being in face-to-face environment with everyone. For some, commuting was also an issue since they lived away from Nottingham, and therefore liked the remote delivery of the course.

“I like that it was remote. So I because I know that before COVID, this used to be brought in like group sessions. But I very much like the privacy that it allows you to do it remotely because you do a lot long duration, maybe 40 minute duration, mindful body scans, and you sit there with your eyes shut, and you do your deep breathing. If I'd have to do this in a big room, I'd been a lot more self-conscious of what I looked like and if I was breathing too loud, and I don't think I would have been able to fully immerse myself in what they wanted you to do in the session. Whereas when you did it through the laptop in that capacity, you know, you could just turn the video off just while you're doing those guided talks from the

teachers. And then just quickly press it back on within a second once you've done it" G3, P2, Female, 34 Years

"You know, because obviously in some ways it's much easier to do it via computer. I don't need to get somewhere for a certain time or worry about parking, and also it's more convenient if it's over a video call. So you can do it from any place you are and it's at your own comfort zone" G1, P1, Female,

Theme 4: Adopting varied techniques during the MBCT training deemed as extremely beneficial

The core aspect of a mindfulness programme involves training participants with different techniques. Here, participants reported being exposed to a variety of practices and techniques which they found extremely beneficial.

Sub-theme 4.1: The body scan technique was perceived as means for improving one's overall wellbeing

Majority of the participants perceived the body scan technique as the most useful practice, enabling them to feel kinder to oneself and eliminating any negative thoughts. It also helped in switching off from a hectic day at work, and feel relaxed.

"The body scans were good. They were they were, they were quite good for helping like any for me to get rid of any like negative inner monologue sort of thing, and to be a bit kinder to yourself, and to allow yourself to have some time, and then that will be beneficial in the long run" G3, P2, Female, 34 Years

"The body scans, a lot of people in my group were using them to relax before they went to sleep" G4, P2, Female, 49 Years

Sub-Theme 4.2: Mindfulness with movement was another popular and beneficial technique which helped with relaxation

A lot of participants enjoyed mindfulness with movement particularly yoga and walking, including walking their dog. They preferred to move around instead of adopting the sitting exercises; they also felt that mindfulness with movement was easier to implement and incorporate in one's busy schedule.

"The mindfulness walk was nice. When I was walking the dog, I found that quite useful. Um, so more of the movement type stuff I found useful rather than the sitting exercises" G2, P5, Female, 58 Years

"I started to turn it into mindful yoga. So now I've found a free online course, which is, like mindfully based, but it's mindful yoga. So I try and do mindful movement when I'm out and about" G3, P2, Female, 34 Years

Sub-Theme 4.3: Feeling relaxed after adopting the breathing exercises on a daily basis

The three-minute breathing exercise helped participants to focus on the here and now. It helped them break the pattern of spiralling into negative thoughts, and found it easier to implement at any point during the day, as compared to the body scan technique which requires lying down in a quiet room. It is also a short technique which involves three minutes of one's time as compared to other exercises involved in mindfulness.

"I think yeah, definitely the breathing one where we have to do it three times a day. So before I start my work, I do the breathing exercise, and then at lunchtime before I start work on the wards and stuff, I do it again. So the three minute one was brilliant, you know, I found that I really engaged in that" G3, P1, Female, 46 Years

"Part of the reason for going on the course is that I do my thoughts do spiral and they do go to the worst case scenario. And I've been using the breathing space to bring myself back to that moment in time and not to allow that to happen" G2, P5, Female, 58 Years

Sub-Theme 4.4: Displaying a strong preference for sitting mediation techniques

Few participants reported sitting meditations as a useful technique which helped them feel refreshed after a hectic day.

“Probably the next one would have been some of the sitting meditation. So, um, I think there was a 10 minute and a 35 minute, maybe those ones just to kind of, I guess, break up the day a bit or, or a short amount of time that you can kind of spend on yourself and feel a bit refreshed” G1, P1, Female

Theme 5: The pressure to open up to other group members caused hesitation to share experiences

Similar to other mindfulness training sessions, this programme also involved a group setting where healthcare workers from different fields came together to be a part of this course. Given that it is difficult to read body language of others over MS teams as compared to a physical environment, some participants felt reluctant to open up. Some also reported feeling pressured to discuss their thoughts and feelings, or giving feedback. Some members of the group felt shy and were not as chatty, thereby making it challenging for other participants to speak up.

“You just feel like, well, somebody's got to say something it's not fair on the group leaders who delivering this course, that nobody is saying anything. But there were times that I wanted to be quiet and sit back and listen to others. But, um, yeah, so there was, that was the challenging” G1, P8, Female, 36 Years

Group 6, Participant 2: “So although the practices and things were really helpful, sitting, discussing them was anxiety inducing, like there was a pressure to open up” G6, P2, Female, 27 Years

Sub-Theme 5.1: Participants feeling disappointed due to lack of commitment towards the programme by other group members

Participants felt surprised and disappointment as other group members backed out of the 8-week course. They felt disappointed to not see familiar faces in the subsequent sessions; only very few members stuck to the programme. Participants noted that some group members

would also show up late for the sessions, or leave their audio on which caused a lot of distraction.

“I was surprised about the people that didn't show up, I know when people's situations are different and their schedules and whatnot, but it bothered me that they didn't make the effort, but it's out of your control” G2, P1, Female, 43 Years

Theme 6: Feeling comfortable being a part of the group, thereby allowing a smooth flow of interaction during sessions

Participants reported feeling comfortable to share their experiences as they felt part of a friendly and supportive environment. Participants felt that they were not the ones suffering from work stress; they felt nice to hear other group members share similar experiences and enjoyed getting to know one another. They did not feel pressured to open up and share if they did wish to, instead they enjoyed listening to others.

“So if you'd had a bit of a bad week, where you just kind of wanted to listen and not necessarily join in, you didn't feel under pressure that you had to share your story. But I think, after a week or two of getting to know people and feeling more comfortable, I think there wasn't really anybody that didn't join in, you know, I think somebody along the line contributed” G3, P1, Female, 46 Years

Sub-Theme 6.1: Given the reasonable size of the group, participants felt more engaged as compared to if the group was larger or smaller

Most participants felt that the group size could not have been any bigger or smaller than what it was. They felt the group involved the right number of people from different professions. Had it been any larger, confusion in terms of interaction would then become inevitable.

“It wasn't too bad. I don't think it needed to be any bigger because then I think you get kind of lost. If the group is too big and everyone is contributing, then you'd never get anything done. So I think it was a nice size” G3, P1, Female, 46 Years

“I think it was just the right amount, actually” G1, P7, Female, 29 Years

Theme 7a : Given one's hectic work schedule, lack of commitment towards homework was noted

Homework was assigned to all participants post every session. Majority admitted not complying to the homework tasks every day. Too much homework led to participants facing challenges to incorporate it in their daily lives. Several participants also reported feeling uncomfortable attending the next session knowing they have not done the homework.

“Oh gosh, I've got to lie down for a 40 minute body scan. I don't have time. So I think the time factor acted as a barrier. Plus, if you've got a busy work schedule, getting the time to practice your homework can be a bit challenging and time consuming as well” G1, P1, Female

“I think the amount of homework given was quite huge each week. There could be few people who do the homework, but I think the majority of people could probably fit in a few practices a week or perhaps no practices at all. And then it could be quite difficult coming back knowing you have not done what was asked to do” G1, P4, Female, 28 Years

Theme 7b: Homework was perceived to be helpful and manageable

On the other hand, some participants reported making time to do the homework and finding it helpful, which is why they made a conscious effort to fit it in their daily routine. Even though the homework was huge, they felt they could incorporate at least one exercise throughout the day. For some, it also felt easier to do the homework as they did not need to attend to any family members post work.

“I don't have a family. I don't have young kids. We're in lockdown. So I could fully throw myself into it. I don't look after anybody else. It's just me and my partner. So for me, I can make my time and my commitments my own. So for me, it was fine” G3, P2, Female, 34 Years

“I didn't do a breathing space three times a day. I might have done a breathing space once or twice, and then I would have done the body scan later on. So sometimes it was a quite a lot to do in one day but I definitely did something every day” G6, P2, Female, 27 Years

Theme 8: Various issues being reported with regard to the nature of training

Sub-Theme 8.1: Participants displaying a preference for shorter exercises than the longer ones

Participants found it challenging to incorporate longer exercises due to time constraints. They found techniques like body scan too long, and preferred exercises which were more to the point and can be used at any point of the day.

“Definitely the shorter ones, I did struggle a bit with some of the longer fitting some of the longer like meditations then. Yeah, just because of time, really” G2, P3, Female, 47 Years

“I mean, the only thing I could think of, and this is not a criticism and it's not an improvement, because I think there's nothing to improve as it is excellent, is maybe whether there could be other things to do like with the three minute breathing. Something that's quite short, and to the point” G3, P1, Female, 46 Years

Sub-Theme 8.2: The length of the sessions made it difficult to sit through, thereby affecting one's concentration

Participants reported difficulty to start and zone in to the session. Given that each session was for a duration of two hours, some felt it was too lengthy and found it challenging to remain focussed. Some even reported difficulties sitting still throughout the session, making them more restless.

“Um, I, the only thing I, I can say is the. It felt really long. Two hours felt like a long time, you just don't want to spend those two hours right after work and doing a, you know, a mind fullness. So at times I found it very difficult to get into it straight away after a very busy day at work” G1, P3, Male, 28 Years

“I think the time that it takes to do the sessions is quite tough. So I think, um, if I, you know, from four to six, every Wednesday to organize that with my line manager, to make sure I

could do it. And often there were times at work where I couldn't get out on time and that was quite stressful” G1, P4, Female, 28 Years

Sub-Theme 8.3: Exhibiting dissatisfaction towards the timing of the sessions

The time each session took place seemed inconvenient for some participants. They reported feeling tired after a hectic work day, and preferred relaxing back at home than attend a two-hour long session mid-week.

“Um, for me is the time of the session only because, you know, I tend to work eight till four, by the time that as soon as I logged off work, I was straight into this and I didn't have that minute to switch off from work to jump into this ” G2, P1, Female, 43 Years

Theme 9: Having a safe space to work upon oneself during and after the sessions allowed participants to have an overall positive view about the programme

Sub-Theme 9.1: Being introduced to different practices helped feel engaged with the programme

The practice element of mindfulness helped participants understand the purpose of the programme, thereby allowing participants to feel more engaged towards the course. Some came with the preconceived notion that mindfulness is all about meditation. However, they were surprised to see the variety of techniques and different practices which were introduced to them.

“There were different variations of options. With regard to mindfulness, I'd always thought of mindfulness being like a lie in practice, sort of like the meditation style. But then we looked at different options like the three-minute breathing ones which sort of increased my overall view of what the options are, and gave you a variety to choose from. So that was good” G3, P4, Female, 50 Years

Category 2: Perceived impact of the MBCT programme on overall wellbeing and work performance

Theme 10: Significant reductions in stress levels as a consequence of increased awareness

Sub-Theme 10.1: Feeling calm and relaxed resulting in better mood and improved personal wellbeing

Being a part of the mindfulness course benefitted participants in terms of improvement in their overall wellbeing. Participants reported managing their stress and anxiety levels in a much better way as compared to before they joined the programme. Also, they felt being able to take a step back and reflect on the stressful situation before dealing with everything at once. Having the space and time away from work to relax and meditate enabled one to feel calmer.

“I get less stressed because my, my, like, my main issue before was like anxiety. So my anxiety would sit a lot around work, and kind of self-worth at work. So now I find myself in a bit more of a flow like state” G3, P2, Female, 34 Years

“This programme has been great in terms of teaching me more about how I can be mindful and I think my stress levels have gone down” G1, P4, Female, 28 Years

“I would say that, uh, some things have improved for me. So, um, my overall level of my mood has been more positive now than it was before I joined the course” G1, P2, Male, 50-55 Years

Sub-Theme 10.2: Experiencing a positive work-life balance post MBCT training

Participants reported being able to switch off from work and not let it interfere in their personal and family time.

“I’ve noticed I’ve been able to switch off between work and home better” G2, P2, Female, 60 Years

Theme 11: The MBCT sessions served as an essential tool for improving one’s work performance

Participants reported improvements in several aspects of their work performance post the MBCT programme.

Sub-Theme 11.1: Increased concentration and efficient delivery of tasks at work served as an essential outcome of the MBCT programme

Instead of feeling overwhelmed, participants are now allowing themselves to take more breaks and reflect. This helped in getting back to work feeling more focussed and positive. They also allowed themselves the time and space for all paperwork instead of rushing about. Some also felt being more efficient at work as compared to before the programme.

“And it also helps me concentrate for longer. So sometimes I would feel quite overwhelmed at work and feel like there's more and more happening throughout the day and not sure how I can finish all these jobs, but by having that regular timeout, um, it just helps you come back fresher. So I think I'm actually doing more” G2, P4, Female, 27 Years

“I wouldn't say so much in my work performance, but I, I think I've probably more effective because I don't get as stressed over things” G1, P3, Male, 28 Years

Sub-Theme 11.2: Enhanced organisational skills and ability to manage the workload

Participants reported feeling less self-critical and feeling happier at work. This helped them in terms of managing their tasks better than before. Also, they felt they could manage their workload better.

“I suppose it's similar because I don't ever feel like I've struggled with like achieving things or getting things done beforehand, it was more like just the added layer of like putting pressure on yourself to do it and like criticising yourself for it. So I feel like that's definitely gone down” G3, P3, Female, 25 Years

“I almost feel like just turn up and do my job and not have all of that extra in the background. So yeah, I feel a lot happier at work” G3, P2, Female, 34 Years

Theme 12: The MBCT programme played a fundamental role as a coping strategy for participants to deal with the daily stressors

Participants felt better equipped to cope with the daily challenges in work or personal life post the MBCT programme.

Sub-Theme 12.1: Having increased awareness of oneself and the surroundings enabled participants to switch off from auto-pilot

Participants reported having more awareness of their own self, their thoughts, the different sensations in their body, and their surroundings. They noticed them taking out more time to observe the environment, and sharing their experiences with others.

“I do tend to notice things a bit more, whether that be feelings within myself or, um, you know, using my senses to, to notice things around me” G1, P7, Female

“I think it's just being aware of my thoughts more. You know what we talked about and how they can impact, you know, when the way you feel” G6, P1, Female, 42 Years

“And I drink a cup of tea more mindfully, or just listen to the sounds around me more mindfully. And it really does kind of end up taking you out of your head and just bring you to the present moment. I think it's really changed my outlook” G3, P3, Female, 25 Years

Sub-Theme 12.2: Appreciating the moment helped in diverting one's mind during stressful situations

Appreciating little things about life and oneself, despite one's hectic work schedule, helped participants feel better about themselves and their surroundings. They feel more aware of their internal experiences when faced with a difficult situation, and bring their attention back to manage the situation.

“So, um, yeah, it's kind of like stopping and smelling the flowers. You take notice of nice things and appreciate them and it distracts you from negative thoughts all the way you might be feeling” G4, P2, Female, 49 Years

“I've really enjoyed posting pictures of, you know, roses and telling people to smell them and the sights and the sounds, and especially in lockdown, because you know, it's been challenging. Um, I don't know. It's just the little things, but they've been big things for me. Um, also, my reaction, not being in automatic pilot all the time and, and, and trying to be in the moment and, um, you know, enjoy the moment” G2, P6, Female, 52 Years

Sub-Theme 12.3: Improved ability to handle difficult circumstances

Post the MBCT programme participants felt more in control over ongoing negative thoughts and breaking away from auto-pilot, which also helped in terms of making the right choices during difficult times.

“And I think whereas before, perhaps with my fight or flight, it was just a flight and panic which was quite stressful, whereas now I think I'm being more aware of to take that time”
G6, P2, Female, 27 Years

“I can't say it waved a magic wand and everything's gone away completely. But I think it's sort of given us the chance to use some of these techniques. And, you know, if you find that things are getting a little out of control, and you're getting quite stressed, then it gives you those skills to be able to just stop and ponder, evaluate things a little bit better than you did”
G3, P1, Female, 46 Years

Sub-Theme 12.4: Increased mindfulness leading to having a positive outlook to life

Participants allowed themselves the time and space to take a step back and reflect in order to cope with different stressful situations post the programme.

“Because you kind of get a sense of stepping back from the day to day and getting a sense of space from it. And it just allows you to not get so caught up in daily things that might be stressing you out” G2, P4, Female, 27 Years

“But I think going forward, it's kind of created that idea of like, you should do this more regularly. You know, take a step back, focus on yourself, like, prioritise your well-being” G3, P3, Female, 25 Years

Theme 13: MBCT training helped cope with the pressures pertinent to COVID-19

As the global pandemic commenced, it induced extreme levels of stress and anxiety particularly among healthcare employees. Also, given the lockdown situation, many employees had to work from home, which created a stressful atmosphere as the work life interfered with one's personal life. However, being a part of the MBCT programme, participants reported feeling better equipped to deal with such stressors during COVID-19; some also reported feeling more settled and positive during the lockdown.

“I would say the first few weeks of the COVID period were much more stressful. So yeah, definitely the course helped me to manage those. Um, I wouldn't say, you know, worry free, but, um, I've certainly been able to manage the stress better” G1, P2, Male, 50-55 Years

“Earlier I used to go to the gym a lot, but can't now because obviously they're shut due to restrictions. But, um, it's been helpful to kind of have something that's going on each week. I can rely on which perhaps brings my stress levels down. Like the gym used to do” G1, P4, Female, 28 Years

Category 3: Recommendations for improving the delivery of MBCT programme

Theme 14a: Alterations required in certain aspects of the MBCT delivery

Participants made suggestions/recommendations on several aspects of the MBCT programme for further improvement.

Sub-Theme 14.1a: Requires more awareness regarding committing to the programme

As mentioned previously, several participants found homework tasks as challenging due to lack of time and inability to commit to it. Therefore, one suggestion made by a few participants involved reducing the homework in order to feel less guilty for not completing it.

Also, because participants were unaware of how much time needs to be allocated for this course, another suggestion included spreading awareness regarding commitment towards the programme.

“If I can say anything then it would probably be the homework, but that was a very minor thing. And there was no pressure for us to finish the homework and you wouldn't get told off if you didn't so it. But some of the amounts was quite big and its quite a bit commitment. So if some of that could be reduced a little bit just because of the time commitment factor” G2, P3, Female, 47 Years

“You think you can do it, but I didn't take it on board as to how much commitment it requires, particularly timewise” G2, P2, Female, 60 Years

Theme 14b: Participants reporting no suggestions for improving the programme

Most of the participants reported that the programme needed no such changes; they could not point on any negative aspect, and overall enjoyed being a part of this course.

“I don't really know. I mean, I think I don't know if there's more practices that haven't been done, but we've done quite a lot of variety of them, which I think was really good. And I and you know, did a lot of practice as well as some theory behind each thing. So I think it was a good, a good balance really” G6, P1, Female, 42 Years

“I don't think so. I don't know enough about it to understand, to comment or judge on how it was done cause it was completely a new learning experience for me, but it was totally worth it and it was so good” G2, P1, Female, 43 Years

Theme 15: Upon feedback, all participants reported recommending the MBCT programme to other co-workers

Each and every participant interviewed reported that they will, or they already have recommended the programme to other colleagues as they really enjoyed the experience.

“Yes, I would, I would. And it was recommended to me by a colleague. Um, I think, and, and I did recommend it to another colleague that has also been on the course” G2, P5, Female, 58 Years

5.4 Summary of findings

As discussed previously, the prevalence of high stress levels among the NHS workforce calls for a crucial need to develop and implement effective psychological wellbeing interventions. Given that MBIs have been frequently cited in prior literature; more specifically, the impact of MBCT has shown high significance in terms of improved personal and organisational outcomes, there are still gaps in the literature to analyse the effects of MBCT on the work performance of NHS employees. Also, there is a lack of mixed-method research with regard to MBCT; understanding its effectiveness and acceptability from both quantitative and qualitative perspectives among NHS employees. Therefore, the current study aimed to evaluate the potential benefits of an eight-week MBCT programme and measure outcomes in terms of improved psychological wellbeing, and work performance using mixed-methods of data collection and analysis. By adopting the pre/post design, quantitative data was derived from questionnaires via JISC Online Survey before commencing the first MBCT session (pre), followed by conducting the same set of questionnaires after attending the last session (post). The questionnaire completion (both pre and post) was then followed by semi-structured interviews, wherein all participants were invited regardless of whether they completed the questionnaires. The purpose of these interviews was to gain in-depth information from participants regarding their thoughts and feelings about the mindfulness service and its delivery. Questionnaire data (both pre and post) was collected from 28 NHS healthcare employees out of which $n = 23$ comprised of female participants and $n = 5$ were male; $n = 20$ were full-time workers in the NHS and $n = 8$ worked part-time. The mean age of participants was 39.93 (SD = 10.94). On the other hand, qualitative data was derived from 24 participants, out of which $n = 20$ were female employees and $n = 4$ comprised of male employees; $n = 16$ were full-time NHS workers and $n = 7$ worked part-time. The average age depicted was 40.59 (SD= 11.304).

The quantitative results derived from questionnaires, before the MBCT programme commenced, revealed the prevalence of moderate levels of depression ($M = 9.79$, $SD = 5.97$), high levels of perceived stress ($M = 29.43$, $SD = 7.75$). The overall mindfulness levels

of participants, as depicted in the Five-Facet Mindfulness Questionnaire, was $M=108.5$ ($SD=14.77$), with the highest scores obtained on 'description', which involves labelling and expressing one's experiences to oneself and others ($M=24.36$, $SD= 6.401$); followed by 'observation', which involves a perception of the internal and external stimuli ($M= 22.32$, $SD= 6.319$); 'non-judgemental', which involves displaying empathy and acceptance to oneself and others ($M=22.04$, $SD=6.31$); 'acting with awareness', which focuses on the present moment and diverting away from 'autopilot' thinking ($M=21.86$, $SD= 4.892$); and finally 'non-reactivity', measuring detachment from negative thoughts and emotions ($M= 17.93$, $SD = 4.578$). The overall score for quality of life, as depicted in World Health Organisation- Quality of Life Bref, was 90.36 ($SD = 13.39$); with highest scores obtained on 'environment', which covers issues related to finance, safety, living physical environment ($M=67.629$, $SD= 14.39$); followed by 'physical health', which involves items related to energy, pain, sleep, and daily activities ($M=65.808$, $SD= 15.56$); 'social relations', involving questions related to social support, personal relations and sex life ($M= 61.6$, $SD=18.75$); 'general quality of life' ($M= 58.482$, $SD=22.06$); and 'psychological', which measures negative thoughts, self-esteem, self-image, positive attitudes, and mental status ($M= 50.45$, $SD= 18.65$). Upon conducting the eight-week MBCT programme, the post-set of questionnaire results revealed mild depression among participants ($M=5.75$, $SD=4.29$); and mild levels of stress ($M=21$, $SD= 8.16$). The overall score for mindfulness was 136.29 ($SD= 16.83$), with highest scores obtained on 'non-judgmental' ($M=29$, $SD=6.47$); 'description' ($M=28.57$, $SD=6.602$); 'observation' ($M=28.54$, $SD=3.18$); 'acting with awareness' ($M=28.04$, $SD= 4.25$); 'non-reactivity' ($M=22.14$, $SD= 4.42$). A non-parametric test (Wilcoxon Signed Rank Test) was carried out to understand the differences in scores on the four variables (depression, stress, mindfulness, and quality of life) before and post the MBCT programme. Results revealed a significant reduction in depression ($Z=17$, $p=0.001$), which supported Hypothesis 1; and significant reductions in stress levels ($Z= 6.5$, $p=0.001$), thereby supporting Hypothesis 2. Significant increases in mindfulness levels were reported ($Z= 406$, $p=0.001$); similarly, quality of life was significantly increased among participants ($Z=330$, $p=0.001$), as compared to before the MBCT programme, thereby supporting Hypothesis 3 and Hypothesis 4 respectively. These findings are consistent with prior literature, demonstrating the impact of MBCT on stress, anxiety, depression, increased mindfulness, and improved quality of life among NHS workers (Marx et al., 2014; Graham, 2014 Moorhead et al., 2019; Jones, 2018, West et al., 2018).

The qualitative findings, through semi-structured interviews, were derived using the method of thematic analysis (Braun and Clarke, 2006). As mentioned above, the themes emerging from interviews were divided into three broad categories, after which relevant sub-themes were formulated. The first category highlighted participants' perceptions regarding the delivery of the MBCT programme. Participants reported that information regarding each session was delivered very efficiently, thereby encouraging engagement (Theme 1). Views regarding the therapists delivering the programme were also discussed (Theme 2), whereby participants believed that the therapist played a crucial role in engaging participants; ensuring they feel comfortable by forming a good rapport. A relevant sub-theme highlighted the therapist's teaching style and knowledge of mindfulness which made participants feel comfortable and engaged throughout the session. Given the current circumstances of COVID-19, the sessions were held on Microsoft Teams; participants were asked for their opinions regarding the remote delivery of the programme as opposed to the traditional face-to-face environment (Theme 3). A related sub-theme highlighted participants' preference for a physical environment over the MS Teams platform, mostly due to reasons such as feeling conscious of the camera, dodgy internet connection, etc. On the other hand, most participants reported feeling connected with one another even through MS Teams. Participants reported being in their comfort zone while practising different techniques during sessions, which helped them remain engaged. These techniques were deemed as extremely beneficial for various reasons, as reported by participants (Theme 4). The majority perceived the body-scan technique as extremely useful for improving one's overall wellbeing. Other useful techniques reported by participants included mindfulness with movement, breathing exercises, and sitting meditation; these helped participants feel relaxed and were easy to use on a daily basis.

Given the group setting of the MBCT delivery, participants were asked to share their opinions regarding the group nature; how comfortable they felt in a group, interaction among participants, and size of the group. Several participants felt pressured to open up and share their experiences during the sessions (Theme 5). One possible reason could be attributed to the fact that participants showed lack of commitment towards the programme; some left the sessions midway leaving other participants feeling disappointed and pressured to share their experiences. Some participants reported feeling comfortable in a group setting (Theme 6); the group had an adequate number of members, which help participants feel more engaged as compared to if the group was larger in size. An important aspect of MBCT training involved

homework; which involved practices to follow at home post each session. Participants were asked to share their opinions regarding the homework aspect of training. Mixed views were obtained; some reported a lack of commitment towards homework due to their hectic work schedule (Theme 7a), whereas some reported homework as manageable and useful (Theme 7b). When asked about the nature of training, participants highlighted various issues (Theme 8). One important issue revolved around the length of exercises; participants displayed more preference towards shorter exercises than longer ones. Another related sub-theme revealed participants' difficulty to sit through long sessions after a long working day. Some also reported dissatisfaction towards the timing of the session. However, despite the issues highlighted, the majority perceived the programme as a safe space to work on oneself (Theme 9); being introduced to various techniques and practices allowed participants to remain engaged and feel positive about themselves and the environment after every session.

The second category shed light on the impact of MBCT training on the psychological wellbeing and work performance of NHS employees. Significant reductions in stress levels were reported by participants (Theme 10). Participants felt relaxed, experienced better mood, increased awareness, and improved personal wellbeing post the programme. An important sub-theme highlighted positive work-life balance, as mentioned by participants. In addition, improvements in work performance were also noted by several participants (Theme 11), with regard to increased concentration, efficient delivery of tasks, enhanced ability to manage workload, and improved organisational skills. In terms of coping, MBCT played a pivotal role as a coping mechanism for dealing with stress (Theme 12). As a result of increased awareness, participants were able to switch off from 'autopilot' and appreciate oneself and the surroundings. Participants also reported a better ability to handle difficult situations as a result of increased mindfulness. Another crucial theme taken into account was stress associated with COVID-19, and how the programme helped participants cope with these pressures pertinent to the pandemic in terms of reduced stress levels, feeling calmer and settled, and feeling positive even during lockdown. Finally, the third category highlighted recommendations offered by participants for improving MBCT delivery in the future. Some participants recommended increased awareness regarding the commitment required for this programme (Theme 14a); people need to be made aware of how time consuming the sessions can be, along with the homework aspect of training. On the other hand, majority of participants had no suggestions to offer (Theme 14b); they liked everything about the course and perceived it as extremely beneficial in terms of overall wellbeing. When asked

participants if they would recommend the MBCT programme to a colleague, all participants were in strong favour of recommending the programme to others given how helpful it was for them.

5.5 Integration of findings and implications

The aim of the present study was to evaluate the effectiveness of an eight-week MBCT programme offered to NHS employees, with regard to participants' psychological wellbeing and work performance. The study adopted a mixed-method approach to data collection and data analysis. The purpose of the added qualitative aspect was to explore participants' level of acceptability towards the programme; their perceptions regarding mindfulness as a course and their thoughts on the service delivery, including its effectiveness in terms of work performance. Integrating the findings from both qualitative and quantitative data helps generate a more complete understanding as compared to a single method (Fetters, 2020). By combining quantitative evaluation with qualitative research, can help determine the effectiveness, efficacy and several other outcomes of an intervention programme (Fàbregues et al., 2022). Researchers can benefit immensely from the added qualitative findings of an intervention study; it draws a better understanding of the context and conditions surrounding the intervention, along with the differences between participants with regard to the effects observed (Fàbregues et al., 2022). Also, researchers can gather more in-depth individual-specific knowledge about how, why, and under what conditions an intervention works, or does not work. This detailed knowledge of the effectiveness of an intervention is essential in offering sound recommendations which can be implemented effectively for future practice (Cheng and Metcalfe, 2018; Landes et al., 2019).

In the current study, data derived from quantitative findings were able to capture the effects of MBCT on various aspects of psychological wellbeing such as stress, depression, quality of life, and level of mindfulness; as also depicted in previous research. However, the added qualitative findings, through semi-structured interviews, took into account several other aspects of wellbeing which were not derived from the questionnaire data. These include, but are not limited to, increased awareness of oneself and surroundings, feeling calm and relaxed as a result of a better mood, having a positive work-life balance, increased ability to handle difficult situations, and having an overall positive outlook to life. In addition, given that prior literature on the effectiveness of MBCT on one's work performance is scarce, this study shed

light on various work performance outcomes as a result of the MBCT course. Again, this was not captured through questionnaires; instead, the interviews helped gain a deeper understanding on how the programme helped participants in terms of improved concentration, efficient delivery of tasks, enhanced organisational skills, and increased ability to manage high workload during work. Furthermore, the qualitative findings were able to gain an in-depth exploration of participants' thoughts and perceptions regarding the MBCT course itself, and its service delivery. There is growing evidence demonstrating factors which enable participants to enrol and persist during intervention studies (McDonald et al., 2006; Jenkins and Fallowfield, 2000), but studies exploring participants' experiences of online interventions are limited (Mathieu et al., 2012). Undertaking interventions via digital modalities have offered potential wellbeing related benefits to participants; they also reduce barriers to accessing such interventions (e.g. time, location and cost), along with reducing stigma associated with face-to-face interventions (Powell et al., 2003; Wald et al., 2007). However, despite its potential benefits, prior literature has shown high dropout rates and lack of commitment towards the intervention (Mathieu et al., 2012). This was observed even in the current study, where dropout rates amounted for 6.9% of the overall sample; 27.9% of participants failed to complete the post-study questionnaires, resulting in a sample size of $n = 28$ participants. The reasons for participants withdrawing from the intervention or the research portion of the study could be attributed to a variety of reasons, including lack of interest or dissatisfaction with the programme, or other circumstances such as personal problems or time restraints. Therefore, there is a strong need for understanding participants' experiences in order to mitigate the differences in an intervention's effectiveness, and also consider the motivating factors behind participants' decision to enrol and continue the programme in order to reduce attrition rates and enhance acceptability (Todkill and Powell, 2013). Bearing this mind, participants of the current study reported mixed reviews regarding the MS Teams platform for undertaking the MBCT programme; some felt it was a comfortable and convenient experience, whereas some displayed preference for a face-to-face environment due to reasons such as feeling conscious of the camera, or due to issues with the internet connection.

Participants also reported several other aspects of the MBCT training, which were not covered in quantitative data. Despite the mode of delivery of the programme, the therapist's approach towards participants plays a crucial role in encouraging participants and ensuring their engagement throughout the course. Participants of the present study reported only

positive views regarding the therapist; they felt the manner and teaching style adopted by the therapist, along with other factors such as their warm and welcoming nature, helped in building a rapport and made participants feel a part of a safe space to open up and share their experiences. Therapists ensured the efficient delivery of information before and during each session; they were pivotal in introducing different practices and techniques thereby ensuring a smooth flow of sessions and engagement from the group members. Participants perceived the techniques and practices as extremely beneficial and relaxing, especially the body scan technique and breathing exercises; they felt they were able to focus on the 'here and now' and switch off from auto-pilot, particularly after a hectic day at work. Also, being a part of a group-based intervention, participants felt reassured that they were not the only ones experiencing difficulties with regard to work and life in general; particularly during difficult times such as the pandemic where the lockdown rules were in place. Participants felt they could cope with stressors pertinent to COVID-19, and feel more positive and settled during the lockdown. However, certain issues were also highlighted in the interviews. For instance, the dropout rates of participants in the midst of the programme made other group members feel pressured to open up; they felt disappointed not seeing the same number of people in the subsequent sessions. Also, participants displayed a preference towards short exercises as opposed to longer ones, given the time constraints and feeling restless during the sessions. Other issues revolved around the length and timing of the sessions; two hours seemed long for participants to join the session each week after a hectic work day. In addition, given that homework is an important aspect of the MBCT training, several participants reported a lack of commitment towards completing the homework post-sessions due to time constraints or prioritising other family/work commitments. Despite the above feedback, the MBCT programme was perceived as a positive and helpful wellbeing intervention by participants. They thoroughly enjoyed the course and also recommended the programme to fellow colleagues within the NHS. Overall, findings from both quantitative and qualitative data of the current study demonstrated that the intervention was feasible and acceptable by NHS healthcare employees. Therefore, bearing in mind the JD-R model as discussed previously, MBCT has proven to be an effective personal resource enabling NHS employees to utilise appropriate job resources in order to deal with job demands. This is because mindfulness allows employees to focus on the here and now, rather than focussing on more expansive set of demands which are not of immediate concern which could contribute to high levels of stress (Grover et al., 2016). Also, mindfulness may reduce the perceived magnitude of demands by decoupling of the self from the emotions experienced during work (Glomb et al.,

2011); this separation of work events from emotions experienced, and associating events as an experience of the mind rather than the environment, becomes less threatening to the ego (Feldman, Greeson, and Senville, 2010). As a result, mindfulness allows people to be aware of their emotions and reduce automatic processing which influences emotional responses. It is important to note that these emotional demands also come under the job demands as in the JD-R model. Therefore, mindfulness may have a significant impact on emotional demands given that awareness of emotions is a crucial aspect of mindfulness (Grover et al., 2016).

Findings of the present study have reflected the practical implications in terms of spreading awareness among NHS employees regarding the MBCT programme; its potential benefits on one's psychological wellbeing and aspects related to work performance. Also, it is necessary to identify factors which encourage engagement to participate in such intervention studies; this may help reduce stigma associated with seeking help, particularly when offered via digital modalities. It may also reduce certain barriers associated with participation and foster acceptability. Furthermore, having more randomised control trials in place and integrating both quantitative and qualitative findings can enable greater confidence in results regarding the effectiveness of MBCT, or even other evidence-based approaches.

5.6 Strengths and limitations

One major strength of the current study was adopting a mixed-method approach; collecting both quantitative and qualitative data helped add depth and breadth to the present study. The qualitative findings derived from semi-structured interviews helped gathering in-depth information from participants regarding their views on the programme, and how it can be improved for future implementation. Another strength noted can be attributed to the fact that the study focused on NHS healthcare employees working in a range of departments and areas of service. Also, most participants did not have prior experience on what the MBCT programme entails; participants joined the course with an open mind and highlighted positive views on the overall delivery of the programme. Despite the strengths, certain limitations were also taken into account with regard to the present study. First, there were certain issues noted pertaining to participants' retention. This is owing to the fact that $n = 3$ out of a total of 43 participants who consented dropped out in the midst of the programme either due to personal reasons or because they lost interest in it (accounting for 6.9% of the total sample). Also, $n = 12$ participants (accounting for 27.9% of the total sample) were unreachable at the

time of follow-up, thereby making it challenging to collect the post-set of questionnaire data. As a result, the final analyses did not include participants who dropped out or did not complete the follow-up questionnaires, leaving the total sample of $n = 28$. Therefore, given the small sample size of the study, the current findings could be generalised to a larger population. Second, this study did not have a control group; therefore, reductions in depression and stress scores cannot be directly attributed to the intervention. Third, given that the follow up set of questionnaires were conducted only after eight weeks, it is unclear whether the MBCT course had any long term effects on participants with regard to stress, depression, quality of life, or mindfulness. Fourth, demographic characteristics such as age, gender, marital status, department/sector, or years of experience were not used as variables in the study for conducting the analysis. Fifth, the current study focused on the effectiveness of the MBCT programme on psychological wellbeing, while neglecting aspects of physical health and wellbeing among NHS employees.

5.7 Future directions

The findings of the current study paves way for future research to adopt more mixed-method approaches to data collection and analysis. Also, more randomised control trials are required in order to reduce bias and measure the effectiveness of MBCT as an intervention. In addition, future studies should warrant comparisons between MBCT and other group-based psychological wellbeing interventions. Furthermore, given the current circumstances of the global pandemic, more studies on MBCT delivered via digital modalities are required. This is because undertaking the programme online can overcome several barriers in relation to accessibility; they are cost-effective, participants can access the intervention from the comfort of their own homes, and it negates any inconveniences caused due to travel time.

5.8 Conclusions

Given the high prevalence of stress among NHS healthcare employees, as discussed in previous chapters, there is an urgent need for developing and implementing effective psychological wellbeing interventions. MBCT, which originally developed for patients with a history of relapsing depression, has proven its effectiveness as a cost-effective group-based intervention among individuals even with ongoing stress, anxiety, and depression. MBCT has played a pivotal role, as depicted in prior literature, in addressing various psychological

issues and improving overall wellbeing among NHS healthcare workers. The current study too has offered promising results in terms of reduced depression and stress levels; increased mindfulness and quality of life. Furthermore, the added qualitative findings through semi-structured interviews demonstrated high acceptability from participants; they offered positive views regarding the effectiveness and delivery of the course. Although access to MBCT is improving across the NHS UK, it still remains problematic. Therefore, bearing in mind the above findings, it is necessary to provide evidence-informed interventions, such as MBCT, as a means of preventing stress from escalating, along with empowering healthcare employees to cope with stressful situations during and outside the workplace.

CHAPTER 6: STRESS, EMOTIONAL INTELLIGENCE, COPING STRATEGIES, AND SELF-EFFICACY IN NURSING STUDENTS: A MIXED-METHOD STUDY (STUDY 3)

6.1 Background

6.1.1 Stress in nursing students

Experiencing stress is a common phenomenon in the academic life of university students. Although some level of stress may be crucial for learning (Stuart, 2013), continuous exposure to high levels of stress can lead to catastrophic consequences on students' learning, academic productivity, and overall psychological wellbeing (Ni et al., 2010, Reeve et al., 2013, Salam et al., 2015, Storrie et al., 2010). Several emotional, physical and social factors can be responsible for high levels of stress among university students (Aghamolaei and Fazel, 2010, Elcigil and Sari, 2007, Reeve et al., 2013, Shah et al., 2010). However, the study of nursing, in particular, is reported to be extremely stressful throughout the world (Edwards et al., 2010; Chernomas and Shapiro, 2013; Oner Altıok and Ustun 2013; Walker and Mann, 2016; Tung et al., 2018), more so than the study of any other discipline (Pulido-Martos et al., 2012; Reeve et al., 2013; Turner and McCarthy, 2017). The presence of stress among nursing students is considered a global feature, with stress levels ranging from moderate to severe (Amr et al., 2011; Geslani and Gaebelein, 2013; Shukla et al., 2013; Labrague et al., 2017; Smith and Yang, 2017; He et al., 2018; Ozsaban et al., 2019). This is because nursing students are exposed to the realities of nursing profession during their education (Li and Hasson, 2020). The academic stressors encountered by nursing students include, but are not limited to, high intensity workload in terms of completing assignments, keeping up with the deadlines, preparing for examinations, thereby leading to a stressful and competitive learning environment (Evans, 2008; Reeve et al., 2013).

What is different for nursing students, as compared to students in other fields, is the added clinical component (Seyedfatemi et al., 2007). These clinical challenges encountered by students involve providing care for the acutely ill patients (Zhao et al., 2015). They are often placed in situations where there is shortage of staff or resources, thereby inducing an overriding fear among students of making errors (Yıldırım et al., 2017). They must also cater to a large sum of preparatory work before their clinical assignments (Evans and Kelly, 2004); travelling long distances to clinical sites and using highly technical equipment (Mahat, 1998;

Shriver and Scott-Stiles, 2000). Other clinical sources of stress include dealing with death of patients, fear of failure, interpersonal conflicts with other nurses, and work overload (Kumar, 2011). Unfortunately, given the circumstances of COVID-19, psychological wellbeing among nursing students was struck badly (Morales-Rodríguez et al., 2020; Melnyk et al., 2018). The prevalence of the global pandemic negatively impacted the education systems worldwide (Zeynep, 2020). Since nursing students carry out applied courses in clinical skills, along with theoretical tasks, they were one of the major groups which experienced maximum stress during the pandemic. Students experienced high levels of stress as they were unable to perform clinical practices; their classes and exams were carried out via distant learning bearing in mind the lockdown protocols (Kürtüncü and Kurt, 2020).

6.1.2 Impact of stress on psychological wellbeing in nursing students

Continued exposure to stress can have a myriad of negative effects of the psychological wellbeing of nursing students (Ratanasiripong and Wang, 2011; Tee et al., 2016; Yıldırım et al., 2017) in terms of mood swings, difficulty falling asleep or switching off (Silva et al., 2019); feelings of worry, nervousness and loneliness (Seyedfatemi et al., 2007). Additional consequences include feeling irritable, low concentration, reduced academic performance, increased absenteeism, and poor interpersonal relations (Dahlin et al., 2005). Although experiencing stress among nursing students is inevitable, their ability to cope with stressors is a crucial factor for achieving success in the academic and clinical environment (Wastson et al., 2009). Also, the effects of stress on students' psychological wellbeing depends on the adequacy of coping mechanisms; as coping behaviours play a fundamental role in the stress adjustment process (Seyedfatemi et al., 2007).

6.1.3 Significance of coping strategies in nursing students

The coping strategies can be broadly categorised into problem-focused, emotion-focused, and avoidance (Lazarus and Folkman, 1986). Prior literature among nursing students has demonstrated a strong relationship between stress and coping, along with a varied use of coping strategies depending on the circumstances. A study by Seyedfatemi et al. (2007) demonstrated that the majority of nursing students adopted problem-focused coping strategies (e.g., following the rules, reasoning with people, figuring how to deal with issues, trying to improve oneself); followed by self-reliant strategies (seeking social support, apologising,

helping others); spiritual strategies (praying); and seeking diversion strategies (relaxation, listening to music, etc). Avoidance strategies were least used (use of substances, swearing, sense of humour, professional help). Another study by Shaban et al. (2007) also demonstrated high use of problem-focused coping strategies among students; the use of both problem-focused and emotion-focused coping was highlighted in a study by Lo (2002); adopting problem focused strategies such as developing objectives to resolve issues was reported in a study by Labrague (2016); seeking social support and seeking professional support has also been commonly reported (Kumar, 2011; Berges, 2007; Alshahrani et al., 2018). Findings from an integrated literature review by Yours (2016) on coping mechanisms adopted by nursing students in Asian countries, reported maximum use of problem-focused strategies as compared to emotion-focused or avoidance. An exploratory study by Steele et al. (2005) revealed the use of problem-focused mechanisms such as overcoming problems, using social support, and prioritising and organisation tasks. Active coping, planning to cope with daily stress, and positive reframing were shown in a study by Nebhinani et al. (2020) and by Zhao et. (2014). Findings from a study revealed that students with no religious beliefs adopted more avoidance strategies, and students who perceived high levels of stress adopted problem-focused strategies Christine et al. (2009). Interestingly, findings from a study by Hirsch et al. (2014) revealed the use of avoidance strategies (e.g. escape-avoidance and denial) as efforts to resolve issues were focused on emotions rather than the problem itself, thereby compromising students' professional training process. Studies conducted during the global pandemic among nursing students also highlighted a prominent use of problem-focused coping strategies and less use of emotion-focused and avoidance strategies (Labrague, 2021; Alsolais et al., 2021; Hamadi et al., 2021; Kim et al., 2021; Hasson et al., 2021).

6.1.4 Emotional intelligence in nursing students

A fundamental concept within coping, and basic to all nursing education programmes is EI (Rice, 2015; Whitley-Hunter and Brandi, 2014). Overall, prior literature has demonstrated the benefits of EI in several aspects of mood, interpersonal relationships, intrapersonal skills, level of adaptability, stress management, improvised work performance, and coping behaviours in various personal and professional settings; it also enables positive way of dealing with work-related conflicts and adopting effective coping strategies (Kooker et al., 2007; Horton-Deutsch, 2008; McCallin et al., 2007; Gretis et al., 2008; Morrison, 2008). Nursing students regardless of their age or background, are faced with several emotionally-

charged experiences which allow them to learn how to monitor their own and others' emotions (Horton-Deutsch, 2008; Cadman and Brewer, 2001). Students' ability to recognise the emotions of their patients' will allow them to address their needs; this awareness promotes continuous development of skills through experiences and self-reflective training (Cadman and Brewer, 200). Through EI, nursing students can learn to understand patients' emotions, thereby allowing them to assess the situation and facilitate healthy outcomes (Horton-Deutsch, 2008). This continuous development of EI can also take place throughout the nursing education among students (Shanta et al., 2014; Aguilar-Luzon et al., 2009; Freshwater et al., 2004). Students experience high stress levels during the nursing programme, and adopt poor coping strategies; with EI in the picture, stress can be manageable and enhance students' skills in developing therapeutic relationships (Hegge et al., 2008). Prior literature has demonstrated the importance of EI for managing stressful situations and adopting problem-focused coping strategies among nursing students. In other words, EI helps students manage their stress levels during university life, by ensuring the use of effective coping strategies (Por et al., 2011; Rebello, 2019; Kim and Han, 2015; Berges, 2007; Song et al., 2014; Carmen et al., 2018).

6.1.5 Self-efficacy and its relation with stress, EI, and coping strategies

An important construct associated with high levels of EI is self-efficacy; self-efficacy refers to beliefs in one's capabilities for organising and executing the course of actions required to achieve tasks (Bandura, 1997). Self-efficacy is known to play a crucial role in various academic and educational settings; academic self-efficacy refers to one's confidence in their ability to successfully perform academic tasks (Gore, 2006). It has been further investigated that students with a higher sense of self-efficacy tend to exert more effort in academic tasks, persevere in difficult situations, and retain more flexible and realistic attributions (Hashemi and Ghanizadeh, 2011). Prior research has demonstrated a strong relationship between stress, EI, and self-efficacy (Hashemi and Ghanizadeh, 2011; Chan, 2007; Villanueva and Sánchez, 2007; Moafian and Ghanizadeh, 2009; Li and Sun, 2018; B.ZhuC et al., 2016; Rice, 2013; Varughese and M.K, 2021; Kim, 2016; Kim et al., 2019; Lim et al., 2020). This could be attributed to the fact that psychological states such as stress help providing information regarding perceived efficacy, thereby boosting the feeling of proficiency. Therefore, reducing one's stress and modifying negative debilitating states to positive facilitator states play a vital role in amending one's self-efficacy beliefs (Hashemi and Ghanizadeh, 2011). Self-efficacy

has also been widely recognised as an important resource factor which may facilitate coping behaviours (Knoll, Rieckmann, and Schwarzer, 2005). This is because the general sense of self-efficacy has also been conceptualised as global confidence in one's coping abilities across a wide range of stressful situations (Schwarzer and Jerusalem, 1995). Prior literature on the relationship between stress, coping and self-efficacy has demonstrated that nursing students with low levels of stress display higher sense of self-efficacy and adopt more problem-focused coping strategies; also, a higher sense of self-efficacy reduces stress levels among nursing students and help adopt more effective coping mechanisms (Bodys-Cupak et al., 2016; Zhao et al., 2014; Kyun et al., 2020; Shikai et al., 2007).

6.1.6 Brief rationale

The above findings indicate the significance of emotional factors in nursing students' academic success and psychological wellbeing; students with higher levels of EI are better performers in academic tasks with higher perceived psychological wellbeing (Rodeiro et al., 2009). Similarly, vast evidence has shown a strong association between self-efficacy and academic success among university students (Adeyemo, 2007). This is due to the fact that self-efficacy is a strong predictor of quality of life, happiness, wellbeing, and overall adaptation (Ersanl, 2015), which has a positive influence on thinking, emotions and coping with stressful events (Rostami et al., 2010). As discussed in the previous chapters, healthcare professionals, particularly nurses, are at the forefront of high levels of stress; research has demonstrated a need to monitor stress levels among these nurses since the time of their education. Furthermore, there is a strong need for clarifying the importance of EI, coping, and self-efficacy when dealing with stressful academic and/or clinical situations among UK nursing students. Therefore, the purpose of the current study is to understand the relationship between stress, coping, EI and self-efficacy together - a pattern that has not been looked at before from a mixed-method perspective. In addition, given that self-efficacy plays a crucial role in reducing one's stress, and that emotions form an integral part of one's perceived self-efficacy, the current study will also take into account the role of EI as a moderator and/or mediator in the relationship between self-efficacy and stress among nursing students.

6.2 Methods

6.2.1 Study design

This study will adopt a mixed-method design, consisting of quantitative and qualitative approaches to data collection. The quantitative approach will involve the completion of self-report questionnaires measuring stress, EI, self-efficacy and coping mechanisms, in order to understand how these four variables relate to one another. Similar to study 1, no hypotheses has been provided since the current study is exploratory. The qualitative approach will consist of two parts, wherein the first part will include semi-structured interview while the other part will consist of a series of focus group sessions. These two parts will be run in parallel with nursing students recruited from the same cohort across the three undergraduate academic years.

6.2.2 Participants

Students enrolled in the nursing programme (across all three undergraduate years) in the University of Nottingham were invited to take part in this study. Using G*Power calculation, it was estimated that $n=111$ nursing students will be required for the part of study involving questionnaire completion (using 95% confidence level (α), 5% margin of error (e), a medium effect size of 0.15 ($f2$), and three predictors - emotional intelligence, coping strategies, and self-efficacy). A maximum number of 25 students will be recruited for interview completion, while a total number of 15 students will be aimed to be recruited from 5 focus group sessions (consisting of 3 participants each). The estimated numbers for inclusion in the qualitative parts of the study were estimated according to previous study protocols employing thematic analysis (Braun and Clark, 2006) guidelines. The inclusion criteria for this study were registered nursing students (of any gender) across all academic levels (undergraduate years 1, 2 and 3).

6.2.3 Procedure

Recruitment was initiated by the researcher contacting the gatekeeper (e.g., the Nursing Education Director at UoN) and explaining the purpose of the study. After receiving their permission, a study flyer (see attached 'Study flyer' in the appendices, p.431) was emailed out to all participants via the student representatives and other communication channels such as Twitter and Facebook. The study flyer consisted of a link and QR code which directed the interested participants to the online survey platform (JISC Online Surveys) for the

questionnaire completion. Prior to the questionnaires, on the JISC platform, participants were presented with a 'Participant Information Sheet' which provided the details of the study followed by a consent form. If participants pressed the 'I agree' button to provide informed consent, they proceeded to the next part on the online platform which included the questionnaires presented in a seriatim order. If participants did not press the 'I agree' button the system did not allow them to proceed to the questionnaire completion. The consent form for the questionnaire completion part of the study included two additional questions allowing the participants (who will take part in the questionnaires) with the option of taking part in a follow-up semi-structured interview and/or the focus group sessions and requesting them to include their email address if they check the respective box. Only after agreeing to it, the researcher contacted the participants after the completion of questionnaires to provide them with the respective Participant Information Sheet and Consent Form for the qualitative part of the study; and upon consent provision, a date/time was scheduled according to the participants' availability and convenience, for the interview or focus group sessions to take place. All interviews and focus group sessions were conducted on Microsoft Teams. This study commenced in December 2021 and ended in March 2022. Upon completion of the questionnaires there was a prize draw where two participants got a chance to win a £15 amazon gift voucher. Similarly, two participants received £15 amazon gift voucher (one participant from the interview and one from the focus group) from the draw. As the COVID-19 restrictions had eased by this point, the researcher was able to reach out to the participants face-to-face and encourage further participation as compared to the previous two studies.

6.2.4 Measures

(Quantitative data)

- i. Demographic Form: A demographic form will be used to collect the participants' details such as gender, age, ethnicity, year of study and highest educational qualification at the time of enrolment to the nursing programme.
- ii. The Perceived Stress Scale: The PSS-14 ([Cohen et al., 1983](#)) is a 14-item scale with 7 positive and 7 negative items based on a 5-point Likert scale. The reverse scores items include 4, 5, 6, 7, 9, 10, and 13. This questionnaire measures the degree to which individuals perceive their life as uncontrollable, and unpredictable, and also displays high internal consistency measured by Cronbach's Alpha (α) of 0.70 (Andreou et al.,

2011). The score ranges from 0 (no stress) to 56 (high stress) with higher scores indicating higher stress.

- iii. Schutte Self-Report EI Test (SSEIT): The SSREIT consists of 33 items on a 5-point Likert scale with 1 (strongly agree) and 5 (strongly disagree). Reverse score items include 5, 28, and 33. It measures EI using four sub-scales, namely, managing self-relevant emotions, emotion perception, utilizing emotions, and managing others' emotions. This instrument yields a total score ranging from 33 to 165 where higher scores indicate higher levels of EI; it has shown a good internal consistency as assessed by Cronbach's Alpha (α) of 0.90 (Schutte et al., 1998).
- iv. The Brief COPE: The BCI is a 28-item self-report instrument based on a 4-point Likert scale, and has shown good internal consistency. The responses vary from 0 "I usually don't do this at all" to 3 "I usually do this a lot", and measures three coping styles, namely, problem-focused, emotion-focused and avoidant coping. High scores on problem-focused sub-scale indicates that the individual is adopting a practical approach to solve problems; high or low scores on emotion-focused sub-scale are not necessarily associated with psychological health or ill health; whereas low scores on avoidant sub-scale typically indicate higher adaptive coping. The internal consistency as assessed by Cronbach's Alpha (α) is 0.60 (Carver, 1997).
- v. General Self-Efficacy Scale: The GSE scale consists of 10 items with possible responses of 1. "hardly true", 2. "moderately true", and 3. "exactly true". The total score yields between 10 and 40, with higher scores indicating higher self-efficacy. Previous studies has shown a good internal consistency as assessed by Cronbach's Alpha (α) of 0.80 (Luszczynska , Scholz and Schwarzer, 2005).

Qualitative data

- (i) Interviews: The semi-structured interview consisted of 10 questions; it explored in depth the students' thoughts and perspectives regarding their life as a nursing students; reasons why they experience stress; how stress affects their overall wellbeing; the measures they adopt to cope with stress; and how they deal with

other difficult situations in terms of academic aspects or placements. All questions in the interview guide tapped into aspects related to EI, self-efficacy, stress and coping. Given the current circumstances of COVID-19, interviews were held over Microsoft Teams, depending on the participant's convenience. The interview commenced with building a rapport between the researcher and participants, in order to ensure they feel comfortable. The structure of the interview included some open-ended questions to begin with, e.g. "what made you decide you wanted to become a nurse", followed by more close ended questions, e.g. what coping strategies do you adopt in order to deal with stress" (please see the complete "interview guide" in the Appendices, p.432). Each interview lasted between 15-25 minutes; audio/videos were transcribed within MS Teams itself to generate the transcriptions. It was explained to the participants that entry into the study was entirely voluntary and that participation in the first part of the study (questionnaires) will not necessitate their participation in the second part of the study (interviews), or the third part of the study (focus groups). Participants were also ensured that they could withdraw at any point, or not feel obligated to answer any questions if they were not comfortable doing so. In case any participant felt upset during the interview, the researcher would stop the interview and suggest that participants see their GP or student welfare services.

- (ii) Focus groups: Nursing students were invited to participate in the focus group session; wherein they were presented with three stressful situations they may face during their study and placement, and were asked to offer solutions to those different scenarios (please see complete focus group guide in Appendices, p.433). The purpose of the focus group part is to gain a deeper understanding of how students cope with various stressful scenarios in terms of what coping styles (e.g., problem-focused, emotion-focused, avoidant) they adopt, and the reasons why they tend to endorse the given coping strategies. Given the current circumstances of COVID-19, focus groups were held over Microsoft Teams, depending on the participants' convenience. The duration of each focus group lasted between 30-45 minutes; audio/videos were transcribed within MS Teams itself to generate the transcriptions. It was explained to the participants that entry into the study was entirely voluntary. Participants were also ensured that they could withdraw at any point, or not feel obligated to answer any questions if they were not comfortable

doing so. In case any participant felt upset during the focus group, the researcher would stop the session and suggest that participants see their GP or student welfare services.

6.2.5 Data analysis

Quantitative data was extracted from the online survey platform (JISC online survey) to the Microsoft Excel sheet where raw data was scored, including reverse score items. They were tabulated anonymously (using ID codes) and analyzed using the Statistical Package for Social Sciences (SPSS) V. 28, applying descriptive statistics (mean, frequency, percentage, standard deviation); normality tests; and Pearson's correlation to assess the strength of the relationship among the four variables (stress, EI, self-efficacy and coping mechanisms). For the qualitative part of the study, interviews and focus groups were conducted over MS Teams. Audios/videos were transcribed automatically via the transcription facility embedded into the online platform. Data was analyzed using the 6-step procedure of thematic analysis by Braun and Clarke (2006).

6.3 Results

N=62 students completed the questionnaires; n=19 students took part in the interview, and n=12 students participated in the focus group sessions (n=4 sessions in total). This study required 2-3 recruitment waves commencing from November 2021 to March 2022.

6.3.1 Quantitative results

This section will provide a detailed analysis of the results obtained for the quantitative part of Study 3. As mentioned, 4 questionnaires were administered to nursing students studying in the University of Nottingham which measured stress, EI, coping, and self-efficacy. The raw data was extracted from JISC online surveys into an excel sheet where scores were computed. Data was screened for missing values and reverse scores were obtained for the Perceived Stress Scale on items 4, 5, 6, 7, 9, 10, and 13; and for the Schutte Self Report EI Test on items 5, 28, and 33. Out of 111, n = 62 nursing students completed the questionnaires; n = 60 female students (96.8%) and n = 2 male students (3.2%), across three recruitment waves which commenced in December 2021 to March 2022.

6.3.1.1 Demographic details

The table below highlights the demographic characteristics of the participants including their age, gender, academic year, marital status and ethnicity (n=62).

Table 11: Demographic details

Demographics	N	Percentage	Mean	SD
Age	62		22.84	5.412
Gender				
Female	60	96.8%		
Male	2	3.2%		
Academic Year				
1 st Year	25	40.3%		
2 nd Year	27	43.5%		
3 rd Year	10	16.1%		
Marital Status				
Married	2	3.2%		
Single	54	87.1%		
Divorced	1	1.6%		
Other	5	8.1%		
Ethnicity				
White, Not Hispanic	44	71%		
White, Hispanic	1	1.6%		
Asian	4	6.5%		
Black, Not Hispanic	6	9.7%		
Filipino	2	3.2%		
Other	5	8.1%		

6.3.1.2 Descriptive statistics

The table below highlights the descriptive statistics for all questionnaires administered among nursing students (n=62), depicting the mean, standard deviation, skewness and kurtosis.

Table 12: Descriptive statistics

Questionnaire	Mean	Std. Deviation	Skewness	Kurtosis
Perceived Stress Scale	30.05	7.679	-.362	-.041
- 14				
The Brief COPE				
Problem-Focused	20.68	4.605	-.062	-.196
Emotion-Focused	29.10	4.783	-.151	.133
Avoidance	15.21	3.820	.758	.240
Schutte Self-Report EI	116.71	20.201	-.406	.078
Test				
General Self-Efficacy	28.44	4.958	-.021	-.050
Scale				

6.3.1.3 Normality of data

In order to analyze the distribution of the data, the Kolmogorov-Smirnov test was used. The reason for choosing this test is due to a large sample size (n=62). Results on the variables were noted: stress = .105, $p > 0.084$; problem-focused coping = .078, $p > 0.200$; emotion-focused coping = .091, $p > 0.200$; avoidance coping = .151, $p > 0.001$; EI = .099, $p > 0.200$; and self-efficacy = .094, $p > 0.200$. The results reported indicate that data for all variables is fairly normally distributed. Based on this outcome, also bearing in mind the inspection of q-q plots and histograms (see appendices, figures 37-40, p.435), Pearson's correlation test was carried out to understand the relationship between stress, coping (problem-focused coping, emotion-focused coping, avoidance), EI and self-efficacy.

6.3.1.4 Correlations among stress, EI, coping strategies, and self-efficacy

Students reported moderate levels of stress ($M = 30.5$, $SD = 7.679$); most students adopted emotion-focused coping strategies ($M = 29.10$, $SD = 4.783$), followed by problem-focused coping ($M = 20.68$, $SD = 4.605$), the least used coping strategies were avoidance ($M = 15.21$, $SD = 3.820$); moderate levels of EI was reported ($M = 116.71$, $SD = 20.201$); and moderate to high levels of general self-efficacy (28.44 , $SD = 4.958$). Pearson's correlations was conducted to determine the strength of the relationship between the variables of stress, coping (problem-focused coping, emotion-focused coping, avoidance), EI and self-efficacy among the sample of UK nursing students ($n = 62$). The correlations coefficients with their alpha values are presented in the table below (table 3), which suggests an association among all four mentioned variables. The output suggests a moderate weak negative correlation between stress and problem-focused coping ($r = -.257$, $p < 0.044$); a strong positive correlation between stress and avoidance coping ($r = .580$, $p < 0.001$); a moderate negative correlation between stress and EI ($r = -.476$, $p < 0.001$); and a strong negative correlation between stress and self-efficacy ($r = -.699$, $p < 0.001$). No relationship was found between stress and emotion-focused coping. A weak positive correlation was found between problem-focused coping and EI ($r = .349$, $p < 0.005$) and between problem-focused coping and self-efficacy ($r = .372$, $p < 0.003$). No relationship was found between emotion-focused coping and self-efficacy, or between emotion-focused coping and EI. A moderate negative correlation was obtained between avoidance coping and self-efficacy ($r = -.400$, $p < 0.001$). No relationship was found between avoidance coping and EI. Also, a significant strong positive correlation was found between EI and self-efficacy ($r = .552$, $p < 0.001$).

Table 13: Pearson correlation matrix on a sample of ($n = 62$) UK nursing students

Variables	Mean	SD	1	2	3	4	5	6
1 Stress	30.05	7.679	1	-.257*	.209	.580**	-.476**	-.699**
2 PF Coping	20.68	4.605	-.257	1	.452**	-.074	.349**	.372**
3 EF Coping	29.10	4.783	.209	.452**	1	.230	.209	-.063

4	Avoidance Coping	15.21	3.820	.580**	-.074	.230	1	-.214	-.400**
5	EI	116.71	20.201	-.476**	.349**	.209	-.214	1	.552**
6	Self-Efficacy	28.44	4.958	-.699**	.372**	-.063	-.400**	.552**	1

Note: PF Coping = Problem-Focused Coping, EF Coping = Emotion-Focused Coping, EI = EI

$P < 0.05^*$, $p < 0.01^{**}$ (2 – tailed)

6.3.1.5 The role of EI as a moderator and/or mediator in the relationship between self-efficacy and stress

The role of EI as a moderator in the relationship between self-efficacy and stress among nursing students: In order to understand the role of EI as a moderator (W) in the relationship between self-efficacy (X) and stress (Y), the method of moderation analysis was adopted using PROCESS Version 4.1 (Andrew F. Hayes). Results reported that the interaction variable (INT) was non-significant; ($\beta = -0.0140$, $p > 0.0623$). The findings, therefore, indicate that EI **does not** play a moderating role in the relationship between self-efficacy and stress among nursing students.

Figure 18: Model illustration of EI (w) affecting the relationship between self-efficacy (x) and stress (y)

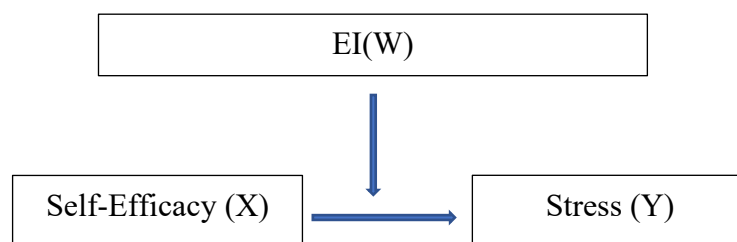


Figure 19: Model Summary

R					
R	Square	MSE	F	df1	df2

Coefficients						
Model	Coefficient	Std Error	T Stat	P-Value	LLCI	ULCI
(Constant)	30.8106	.7946	38.7761	.0000	29.2201	32.4011
SE	- 1.0021	.1681	- 5.9618	.0000	- 1.3385	-.6656
EI	-.0410	.0413	-.9928	.3249	-.1236	.0417
Int.	-.0140	.0074	- 1.9010	.0623	-.0287	.0007

Dependent Variable: Stress

The role of EI as a mediator in the relationship between self-efficacy and stress among nursing students: To understand the role of EI as a mediator (M) in the relationship between self-efficacy (X) and stress (Y), mediation analysis was conducted using PROCESS Version 4.1 (Andrew F. Hayes). Results revealed that the total effect of self-efficacy (x) on stress (y), ignoring the mediator, was negative and significant (B= - 1.0828, se= 0.1430, t= - 7.4722, p < 0.001). With the inclusion of the mediating variable (EI), the direct effect of self-efficacy on stress was also significant (B= - .9724, se= .1710, t= - 5.6857, p<0.001). However, the indirect effect of self-efficacy on stress, through EI, was found non-significant (B= - .1104; 95% CI= -.392, .0567). Given the results, it can be indicated that EI does not play a mediating role in the relationship between self-efficacy and stress.

Figure 20: Model illustration of EI (m) as a mediator in the relationship between self-efficacy (x) and stress (y)

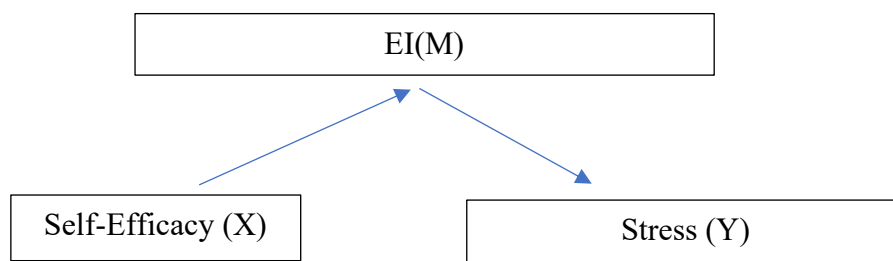


Figure 21: Model Summary

Total, Direct and Indirect Effects of Self-Efficacy (X) on Stress(Y)
--

	Effect	se	t	p	LLCI	ULCI
<i>Total Effect of X on Y</i>	-1.0828	.1430	-7.5722	0.000	-1.3688	-.7967
<i>Direct Effect of X on Y</i>	-.9724	.1710	-5.6857	0.000	-1.3146	-.6302
<i>Indirect Effect of X on Y</i>						
<i>EI</i>	Effect	BootSE	BootLLCI	BootULCI		
	-.1104	0.0919	-.3092	0.0567		

6.3.2 Qualitative results

6.3.2.1 Overview

This section will highlight the findings of the semi-structured interviews and focus group sessions conducted among nursing students in the University of Nottingham.

6.3.2.2 Demographic details

Nineteen (n=19) semi-structured interviews were conducted among nursing students studying in the University of Nottingham. The participants interviewed comprised of n= 1 male student and n= 18 female students in the age range of 25 and 60 (M= 23.05 ; SD= 5.631). Majority of students were in the first year of nursing course (52.63%); followed by second year students (36.84%) and third year students (10.52%). On the other hand, four focus group sessions were conducted with three participants per session (n=12). All participants in each session comprised of female nursing students from the University of Nottingham in the age range of 18 and 27 (M= 21.75; SD = 3.085).

Table 14: Demographic characteristics of nursing students interviewed (n=19)

Participant	Age (Years)	Gender	Academic Year
1	24	Female	1 st Year
2	27	Female	3 rd Year
3	19	Female	2 nd Year
4	25	Female	1 st Year

5	19	Female	1 st Year
6	21	Female	2 nd Year
7	20	Female	3 rd Year
8	20	Female	2 nd Year
9	19	Female	2 nd Year
10	27	Female	2 nd Year
11	20	Female	2 nd Year
12	19	Female	1 st Year
13	36	Female	1 st Year
14	22	Female	1 st Year
15	19	Male	1 st Year
16	18	Female	1 st Year
17	19	Female	2 nd Year
18	27	Female	1 st Year
19	37	Female	1 st Year

Table 15: Demographic characteristics of nursing students who took part in the focus group sessions (n=12)

Participants	Age (Years)	Gender	Academic Year	Group
1	24	Female	1 st Year	1
2	27	Female	3 rd Year	1
3	19	Female	2 nd Year	1
4	25	Female	1 st Year	2
5	19	Female	1 st Year	2
6	21	Female	2 nd Year	2
7	20	Female	3 rd Year	3
8	18	Female	1 st Year	3
9	19	Female	1 st Year	3
10	20	Female	2 nd Year	4
11	27	Female	2 nd Year	4
12	22	Female	1 st Year	4

6.3.2.3 Findings of interviews

The themes emerging from interviews were divided into five broad categories, which were further divided into relevant sub-themes. The first category highlighted the feelings and perceptions of students regarding the nursing course (two themes and related sub-themes); the second category took into account various academic, organisational and personal stressors encountered by students (three themes and related sub-themes); the third category noted the impact of various stressors on students' wellbeing (three themes and related sub-themes); the fourth category explained the coping mechanisms adopted by nursing students in order to deal with stress (five themes and related sub-themes); the fifth category shed light on perceptions and feelings students' held of themselves (two themes and related sub-themes). By following the streamline process, certain themes noted were not deemed as important; hence they were omitted in order to have fewer and concise themes that are more related to the research question (please find attached codebook in the appendices, p.441).

Table 16: Overarching themes and related sub-themes of the total sample interviewed (n = 19)

Categories	Themes	Sub-Themes
Category 1: Perceptions and feelings regarding the nursing course	Theme 1: A desire to care for patients was the driving reason for taking up the nursing course	
	Theme 2: The university set-up was thought to be encouraging engagement and offering abundant support to students	Sub-theme 2.1: Receiving abundant academic support Sub-Theme 2.2: Having a good balance between theory and clinical skills encouraged students to

remain engaged to the course

Category 2: Perceived academic, organisational and personal stressors encountered by nursing students during the course

Theme 3: Facing difficulties in maintaining a balance between academic work and placements

Theme 4: The nature of the course deemed to be highly demanding, adversely affecting student engagement

Sub-Theme 4.1

Overwhelming course material made it difficult for students to keep up

Sub-Theme 4.2: Challenging to keep up with deadlines for assignments

Sub-Theme 4.3: Struggling with extensive research and academic writing

Sub-Theme 4.4: Restrictions due to COVID-19 acted as a barrier for interaction among peers and teachers

Sub-Theme 5.1: Having to deal with sick patients while being short staffed at times

Sub-Theme 5.2: Teachers and other nurses having high expectations from students leading to pressure

	Theme 5: Feeling mentally drained due to high pressure during placements	
Category 3: Perceived impact of stress on students' overall wellbeing	Theme 6: Perceived adverse impact of academic and placement pressures on students' mental health	<p>Sub-Theme 6.1: Having low mood leading to lack of motivation to perform any tasks</p> <p>Sub-Theme 6.2: Feelings of frustration with oneself and others around due to high pressure</p> <p>Sub-Theme 6.3: Finding it difficult to switch off as result of feeling overwhelmed</p> <p>Sub-Theme 6.4: Experiencing low self-esteem after receiving negative feedback from teachers</p> <p>Sub-Theme 7.1: Facing sleep difficulties with mind on constant overdrive</p>
	Theme 7: Facing challenges in terms of one's personal lifestyle as a consequence of stress	Sub-Theme 7.2: Having less time to engage in other activities due high academic pressure

Theme 8: Difficulty striking
a healthy balance between
personal and academic
pursuits

Category 4: Coping
strategies adopted by
students to deal with stress

Theme 9: Seeking social
support as an active coping
strategy to overcome daily
challenges

Sub-Theme 9.1:
Approaching teachers and
peers in order to seek
guidance

Sub-Theme 9.2: Making use
of the university welfare
service for support

Sub-Theme 9.3: Finding
comfort in socialising with
friends, family or a
significant other

Sub-Theme 9.4: Seeking
professional help for coping
with mental health issues

Theme 10: Engaging in
physical or leisure activities
as a source of distraction

Theme 11: Perceiving negative feedback from teachers as constructive criticism

Sub-Theme 11.1: Breaking down the assignment into sections and putting up a day-planner

Sub-Theme 11.2: Pushing oneself to work by perceiving assignments as a motivation to finish the course

Sub-Theme 11.3: Taking a step back but eventually continuing with the required tasks

Theme 12: Adopting effective problem-focussed coping strategies for overcoming demotivation towards academic tasks

Theme 13: Adopting avoidance behaviours for dealing with stress

Sub-Theme 13.1:
Procrastinating or putting

		things off when overloaded with work
		Sub-Theme 13.2: Having thoughts of giving up when pressure is too much
Category 5: Perceptions and feelings about oneself	Theme 14: Students being aware off and acknowledging their strengths and weaknesses which helped with one's self-efficacy	Sub-Theme 14.1: Several students reported being adaptable and resilient
		Sub-Theme 14.2: Reaching out to fellow peers to offer support
		Sub-Theme 14.3: Feeling readily stressed in various situations shook students' confidence
	Theme 15: Having high levels of confidence for completing the nursing course	Sub-Theme 14.4: Poor management skills were observed due to getting easily distracted

Category 1: Perceptions and feelings regarding the nursing course

Theme 1: A desire to care for patients was the driving reason for taking up the nursing course

Students reported having a helpful and giving personality where they felt the need to provide for patients and contribute towards society. Some were confused when they had to choose between different career options but whittled them down to the medical field, particularly nursing, as they perceived this profession to be very rewarding.

“I one of the main reasons that attracted me to the job is the fact that you get to make difference to people's lives and actually so it gives you a purpose 'cause you're helping people and I feel like it's a very rewarding career 'cause you can come home at the end of the day, you know you've you've made a difference to children's life. So I'm doing children's nursing” P12, Female, 19 Years, 1st Year

*“I want to be able to support people going through things and make people's lives better”
P13, Female, 36 Years, 1st Year*

Theme 2: The university set-up was thought to be encouraging engagement and offering abundant support to students

Appreciating the university and how the course is planned was commonly reported by students. They also found professors and personal tutors very approachable when required. Some believed that facilitators from different modules have been very supportive which helped students better adapt to the course.

“Like I personally feel like the professors are quite accessible. Like if you're stuck, I feel like I can reach them quite easily, whereas I know other people at different universities struggle to reach their professors” P8, Female, 20 Years, 2nd Year

“I find I think it's really good, so I can I can tell that a lot has been put into planning the course so that we are most likely to pass essentially most likely to do as well as we possibly can. I can see how like the progress of each of the modules builds” P19, Male, 19 Years, 1st Year

Sub-theme 2.1: Receiving abundant academic support

The course material is delivered in such a manner that allow students to remain engaged. Several students highlighted that the lectures and course material overall is well presented and is also enjoyable. This made students believe that they were well supported in terms of academic and overall wellbeing.

“I really like the layout of the lectures and 90% of the electors do the same sort of thing where they have the PowerPoint or open. Then they talk over the PowerPoint and I found that my lectures were really good at adding things that weren't in the PowerPoint and making it more relevant to nursing practice sometimes” P7, Female, 20 Years, 3rd Year

Sub-Theme 2.2: Having a good balance between theory and clinical skills encouraged students to remain engaged to the course

An important component of the nursing course included clinical skills, which was the practical side of the course that students found very useful, interesting, and enjoyable. Some even reported clinical skills as their favourite part of the course because focussing just on theory became overwhelming; the whole point of the nursing course is to also engage in the practical side of things.

“Overall, I think it's good and like the clinical skills, sessions are really good for like putting into practice theory and stuff” P10, Female, 27 Years, 2nd Year

“I found it really interesting and I like the fact that we sort of build, we learn the theory behind things and then we put it into practice. So it sort of gives you an evidence based before behind the reasons why you're doing what you do in practice. So I do like I find that really interesting” P12, Female, 19 Years, 1st Year

Category 2: Perceived academic, organisational and personal stressors encountered by nursing students during the course

Theme 3: Facing difficulties in maintaining a balance between academic work and placements

Given the fact that placements are perceived as full time job, students faced difficulties in maintaining a healthy balance between assignments and placements. Students reported facing difficulties finding time to work on their assignments/dissertation because they have been on long placements, or various different placements leaving them exhausted to focus on theory.

“Cause, we're having we've got like an assignment due at the same time this placement and you kind of just want to focus on placement, but you're also like, oh, I've got I've gotten essay to write as well. When are we gonna do that”? P3, Female, 19 Years, 2nd Year

“This last placement we are in I find it personally very hard because my placements are kind of a full time job. So I would come home and I'm really, really tired and I don't have time to actually sit down and research and think and right. So I just think it's a bit unfair” P11, Female, 20 Years, 2nd Year

Theme 4: The nature of the course deemed to be highly demanding, adversely affecting student engagement

Given that the nursing course is more intense as compared to other courses, students reported dislikes towards workload, timings of the lectures, and having less holidays.

Also, due to the nature and intensity of the nursing course, students felt pressured to perform well academically. This was due to the fact that the course involved extensive amounts of information and workload and students feared failing which consequently led to experiencing high stress levels.

“Uhm, obviously there's not the pressure to do well, which makes you feel stressed. I mean if you fail an assignment then you get a second attempt, but if you fail that second attempt then you are removed from the course. Obviously puts a lot pressure on certain situations, especially when you don't feel very confident in a certain so module” P8, Female, 20 Years, 2nd Year

Sub-Theme 4.1 Overwhelming course material made it difficult for students to keep up

Students reported that the course material required a lot of self-study which made them dislike the course material; or the focus was more on theory than on practical. Some believed there was lack of time to keep up with different modules and focusing more on written assignments rather than receiving hand on experience with the practical aspects of the course.

“The modules are very different in the way that they're presented, so sometimes and we've got loads of lectures in a really short period of time. So we're collect cramming everything in and then some of them are really sort of long and drawn out. And that gives you sort of time to digest the information because I'm not the sort of person who could sit, listen to something once and go” P10, Female, 27 Years, 2nd Year

“Uhm, I don't appreciate the amount of written assignments that we have to do versus everything else, because that is 90% of my assessments and I just don't think that nursing is so much of a written” P11, Female, 20 Years, 2nd Year

Sub-Theme 4.2: Challenging to keep up with deadlines for assignments

With managing academics, placements, along with one's social life, students experienced stress keeping up with the mounting workload. Some reported feeling overwhelmed keeping up with different deadlines and having poor time management for fitting everything in a short span of time.

“And then workload wise, obviously it can cause stress if you've got a lot of deadlines coming up at the same time and things like that” P4, Female, 25 Years, 1st Year

“Academic wise, I think it's more about time management and just having a lot to do in like a short space of time. I think that stresses me out a lot” P9, Female, 19 Years, 2nd Year

Sub-Theme 4.3: Struggling with extensive research and academic writing

Feeling uncertain regarding how to go about the assignment; particularly in terms of researching and academic writing was one major stressors reported by students. This was especially reported by first year students or those students who were returning to academia

after many years of working. They felt they were out of touch with university protocols and faced difficulties when going through assignments whilst ensuring their work was up to mark.

“I do struggle to write and I know what I want to say. I understand the knowledge, but writing it coherently for me it is a bit of a struggle” P6, Female, 21 Years, 2nd Year

“I would say assignments is one of my biggest stressors, it's because I don't really understand what I've got to do” P18, Female, 27 Years, 1st Year

Sub-Theme 4.4: Restrictions due to COVID-19 acted as a barrier for interaction among peers and teachers

Given the current circumstances of COVID-19, students faced difficulties engaging in the course. This was particularly noted in terms of accessing university facilities such as the libraries, or even socialising with other peers and teachers face-to-face given the social distancing protocols and changing rules. This caused immense stress given the uncertainty, especially for first year students who had to attend the course online instead of adapting to the university environment and getting to know other peers and teachers.

“When we first started coming to uni it was all very good, even when we were having any problems we could just go and talk to the lecturers and have one to ones. Even libraries were easier to access. Bu then with COVID, it turned into an absolute nightmare and one to ones were practically non-existent. Things were just very difficult and even now when we are slowly coming back to the university, it is still getting difficult” P2, Female, 27 Years 3rd Year

“I think obviously it's difficult for me to say because of my year being so affected by COVID and obviously not being able to be in person for the first year, you could, it felt a bit isolating at times. Yeah. So that was made it very difficult and obviously you just moved away to university and now you don't even get to meet people on your course or anything I think” P8, Female, 20 Years, 2nd Year

Theme 5: Feeling mentally drained due to high pressure during placements

Keeping up with the heavy workload during placements caused exhaustion among students. Also, several first year students reported experiencing stress of starting placements given the uncertainty around what to expect during these placements. Therefore, having to be a part of an unfamiliar setting and working with professional nurses on ward deemed as stressful for many students.

“You feel a bit awkward, or if you don't really know what to expect, and because I've never worked in a clinical setting before, that's probably causing a lot of stress” P4, Female, 25 Years, 1st Year

“Oh, I think just, you know, it's busy. It's a, it's a heavy week when you're on placement and you know the six weeks, extremely mentally draining because you're working full time essentially” P8, Female, 20 Years, 2nd Year

Sub-Theme 5.1: Having to deal with sick patients while being short staffed at times

Due to lack of experience, nursing students felt overwhelmed taking care of sick patients during their placement. Some also reported being overburdened due to shortage of staff whilst fulfilling their duties and responsibilities in a highly stressful work environment .

“I mean I enjoy placements can be very difficult emotionally. We've been working with some really difficult patients and really ill patients and I think that's been quite hard on me this time” P3, Female, 19 Years, 2nd Year

“It's just such a high stress environment and you're trying to learn, but you also feel like you have a lot of responsibilities because they're short staffed” P8, Female, 20 Years, 2nd Year

Sub-Theme 5.2: Teachers and other nurses having high expectations from students leading to pressure

Students reported being treated like actual nurses rather than students who are at the training stage. They were expected to know everything beforehand which made students feel

immense pressure during placements. Bearing in mind the global pandemic, many students were not exposed to working in actual hospital wards and have all information about the work ethic, which adversely affected their stress levels.

“However, it's just being thrown out into placement on hospitals and being in charge of actual humans. You're like I am in charge of their lives and I am affecting their care a lot, but at the same time I don't think I have enough knowledge to actually be handling this because they don't really give you a lot of training prior to you going and placement. They just kind of accept expect you to gain your insight, your knowledge or practice all on placement. So it is very stressful because when I go into a placement, I'm expected to understand and know everything, but I am quite unfamiliar with everything that I'm doing. It's more of learning on the job thing” P11, Female, 20 Years, 2nd Year

Category 3: Perceived impact of stress on students' overall wellbeing

Theme 6: Perceived adverse impact of academic and placement pressures on students' mental health

Sub-Theme 6.1: Having low mood leading to lack of motivation to perform any tasks

Feeling overwhelmed about an upcoming hectic day, and thinking about the mounting workload with assignments and placements has a negative impact on one's mood. This consequently leads to students experiencing low mood and feeling demotivated in terms of getting out of bed and going to the university.

“You're not valued by the nurses, and obviously you're working as hard as you can and then to fill that they don't really care. It's can be quite disheartening and makes you feel bad” P8, Female, 20 Years, 2nd Year

“Just not able to get up in the morning 'cause. I'm like, I don't think I wanna get to uni or it won't do anything today. Just thinking about the number of assignments is quite daunting. Sometimes I just stay in bed and not do anything for days” P14, Female, 22 Years, 1st Year

Sub-Theme 6.2: Feelings of frustration with oneself and others around due to high pressure

Students reported feeling more easily irritable and snappy with loved ones as a consequence of high stress levels.

“I got very short with people not at work, but it's always my loved ones and so they get it in the neck, mainly my partner bless him” P6, Female, 21 Years, 2nd Year

Sub-Theme 6.3: Finding it difficult to switch off as result of feeling overwhelmed

When academic work and placement is always on one's mind, students find it hard switching off after a hectic day. Some even reported difficulties in switching off during holidays due to constantly worrying about assignments and other pending academic/placement work. Also, there were some international students with no family around to vent to, which made them feel more overwhelmed when dealing with stress.

“I find that I'm not really focused on anything else but placement. So like the other day during my placement I thought about how much work that needs to be done and I can't relax. It just lingers on” P6, Female, 21 Years, 2nd Year

Sub-Theme 6.4: Experiencing low self-esteem after receiving negative feedback from teachers

Receiving feedback from teachers is a big part of the course in order to assess the students' progress. However, some students reported feeling like a failure after receiving negative feedback. Some even felt that their hard work has gone to waste for not having accomplished what they hoped they would. This led to adverse consequences on students' self-esteem.

“Sometimes you could get negative feedback from one of the nurses or something. And sometimes it's difficult to just, you know, brush it off because as I said, it's a very high stress environment. And when you're working really hard and you know, trying your absolute hardest, it's really difficult to come to sometimes just like brush it off” P8, Female, 20 Years, 2nd Year

“I didn’t take the feedback quite well and I did shut down for I believe a week or yeah, something like that. I didn’t feel accomplished and I felt like I was failing or failure or just not grateful” P14, Female, 22 Years, 1st Year

Theme 7: Facing challenges in terms of one’s personal lifestyle as a consequence of stress

Sub-Theme 7.1: Facing sleep difficulties with mind on constant overdrive

Having constant thoughts about work at the university and placements, students reported having a disrupted sleep cycle. Some felt the need to wake up in the middle of the night and worry about the upcoming day at the university. Not having sufficient amounts of sleep then led to students feeling more irritable with others around.

“Yes. Uh, I often find myself awake at night thinking, uh, because it's once I get into bed that my brain then goes into Overdrive analysing everything and worries. Like during the day it's easy to put them out of your mind because there's distractions, but when you get into bed at night, it's just there. So it has affected my sleep” P13, Female, 36 Years, 1st Year

“Uhm, I find that if I'm really stressed, I don't sleep as well, so I just end up being real tired and quite grumpy sometimes” P17, Female, 19 Years, 2nd Year

Sub-Theme 7.2: Having less time to engage in other activities due high academic pressure

As a result of being overloaded with academic work and placements, students faced difficulties engaging in other forms of physical and leisure activities. They preferred utilising their free time to focus on work instead, consequently leading to physical and mental exhaustion.

“I may stop doing my exercises because I need to use that time for my assignments. Or maybe I can't go out this evening, so I prefer waking up early and do my assignment” P1, Female, 24 Years, 1st Year

Theme 8: Difficulty striking a healthy balance between personal and academic pursuits –

Students reported difficulties maintaining an optimal work-life balance as a result of high pressures experienced at university.

“Uhm, I would say definitely. Like if you have a bad day at uni it does kind of it'll drag on and you'll be thinking about that sort of into the evening” P12, Female, 19 Years, 1st Year

Category 4: Coping strategies adopted by students to deal with stress

Theme 9: Seeking social support as an active coping strategy to overcome daily challenges

Seeking social support is one of the main problem-focused coping mechanism. Students reported varied outlets for venting their problems when required, be it with peers, family members, teachers when dealing with stress. Some even sought professional help for dealing with other mental health issues.

Sub-Theme 9.1: Approaching teachers and peers in order to seek guidance

Approaching personal tutors or other nurses during placements deemed as a helpful coping strategy for many students, as they feel they receive the correct guidance from someone with more experience. Also, some preferred socialising with other peers in the same course and venting about a hectic day.

“I think if I've been on placement and I've had a bit stressful day, I've found that my supervisors and other nurses are quite good to offload to” P10, Female, 27 Years, 2nd Year

“Yes, definitely. I have approached my personal tutor before and she's really helpful. UM. And they sort of they can put you in the directions of any support that you need” P12, Female, 19 Years, 1st Year

Sub-Theme 9.2: Making use of the university welfare service for support

Reaching out to the welfare services offered in the university deemed as beneficial for coping with stressful situations for several students. They seemed to provide support and guidance to students during difficult times, such as during the pandemic. The welfare service team also makes an effort to reach out to students and follow up with those who have been struggling in terms of academic work or their placements.

“Specially last year during lockdown. I was a lot stressed and anxious because again, it was a new country, new language and I didn't live with anyone. I was very much isolated. So it stressed me out quite a lot. And it did have quite a lot of anxiety attacks as well. So then I had to kind of go to the welfare team, which they were amazing. They were very helpful. They gave me a lot of coping mechanisms and guided me” P11, Female, 20 Years, 2nd Year

“Uhm, I have thought about approaching the well being team and they have emailed me because I applied for special considerations for my placement, so their well being team have emailed me it was really nice that they reached out and I haven't taken them up on it yet, but I am really considering it” P13, Female, 36 Years, 1st Year

Sub-Theme 9.3: Finding comfort in socialising with friends, family or a significant other

Students reported venting out to relatives or their partners after a hectic day.

“I have a boyfriend that goes to uni here as well. So he's kind of my person to vent to and then when it gets really bad” P9, Female, 19 Years, 2nd Year

“I find I've got quite a strong family support networks. That's what I tend to lean on the most” P17, Female, 19 Years, 2nd Year

Sub-Theme 9.4: Seeking professional help for coping with mental health issues

In order to deal with more severe mental health issues, some students reported taking professional help; either in the form of therapy or taking medications.

“Yeah, so uh, I'm currently undergoing therapy at the moment and I've been fine and I am on antidepressants. I've been on them for quite a numerous amount of years” P2, Female, 27 Years, 3rd Year

Theme 10: Engaging in physical or leisure activities as a source of distraction

Adopting a hobby is a major source of distraction from the daily challenges one faces. Therefore, many students reported engaging in various forms of exercises, e.g. going to the gym, running, tennis, etc. Some even engaged in other leisure activities to help them cope with a rough day, e.g. gaming, reading, gardening, etc.

“I do a lot of reading. I like reading books and I think sometimes it's nice just to like disconnect in a way to like a different place” P5, Female, 19 Years, 1st Year

“Yeah, I like running, probably one of my main hobbies, and it's what I do to, like, reduce stress as well. If I'm thinking anxious or stressed about something, and then I go for a run and that really helps” P19, Female, 37 Years, 1st Year

Theme 11: Perceiving negative feedback from teachers as constructive criticism

Several students reported having a positive attitude towards receiving negative feedback from teachers. They preferred perceiving feedback as a means for improving oneself rather than taking offense and feeling low about their hard work. They felt that teachers were extremely helpful in guiding them to the right path; hence, they always felt comfortable approaching them and asking for further feedback.

“I feel like the teachers are very helpful telling me what I can do to improve or like what I should be doing as well. So I definitely take it as constructive feedback like I'm constantly trying to figure out what I could do to make it better just so I could” P15, Male, 19 Years, 1st Year

“So I made an appointment with the teacher for one of my marked assignments and got some sort of full feedback from him, which really helped. It was very encouraging and gave me a clear direction for like future assignments, which was good” P19, Female, 37 Years, 1st Year

Theme 12: Adopting effective problem-focussed coping strategies for overcoming demotivation towards academic tasks

Given the hectic schedule of nursing students, it is not uncommon to experience demotivation towards the tasks at hand. However, many students reported adopting problem-focused coping mechanisms in order to overcome the challenge of demotivation.

Sub-Theme 12.1: Breaking down the assignment into sections and putting up a day-planner

Coming up with a time schedule and dividing the assignment into sections seemed like a viable approach adopted by many students. This allowed them to plan their schedule better and not stress about completing the entire assignment in one sitting, but rather compartmentalizing it and making it easy to follow through.

“I’d like to compartmentalize things like into smaller things. So if I need to write 3000 words for example, I’ll block it down into, like, 300 words on each, and then that feels completely doable. And then I can just get on with it” ” P19, Female, 37 Years, 1st Year

Sub-Theme 12.2: Pushing oneself to work by perceiving assignments as a motivation to finish the course

Students reported fear of failing the course which helped them remain motivated towards finishing the required tasks and assignments. Some even believed in pushing themselves and powering through until the assignment is finished, even if it involves putting more pressure on themselves.

“As the deadline starts approaching and I realized that I really have to just sit down and get it done. Otherwise I’ll fail the course” ” P13, Female, 36 Years, 1st Year

Sub-Theme 12.3: Taking a step back but eventually continuing with the required tasks

Taking a break and then coming back to given tasks with a clear mind was another way for students to overcome demotivation. When a lot is going on in terms of studies and work, students found it difficult to concentrate, and switch off for some time. This allowed students to relax and also reflect on what needs to be done, thereby devising an appropriate plan to finish what is required.

“So when I’m really stressed, I can't focus on what I'm doing, so I tend to close it off and then focus on something else. And then come back to it when I feel better” ” P16, Female, 18 Years, 1st Year

Theme 13: Adopting avoidance behaviors for dealing with stress

Another major category of coping mechanism include avoidance behaviors, which several students adopted in order to cope with stress and difficult circumstances.

Sub-Theme 13.1: Procrastinating or putting things off when overloaded with work

Experiencing lack of motivation due to exhaustion after a hectic day at the university, consequently led to students procrastinating when it came to finishing assignments. Some even requested for an extension. Some even reported feeling lazy to get out of bed and getting to work.

“We are allowed to get some extensions last year. So I think I've, I've had like an extension or two” ” P3, Female, 19 Years, 2nd Year

“Yes, definitely. If I feel really tired and or if a deadline kind of not imminent, I guess I would definitely kind of procrastinate and put things off. If I'm feeling stressed” ” P4, Female, 25 Years, 1st Year

Sub-Theme 13.2: Having thoughts of giving up when pressure is too much

Experiencing thoughts of giving up the nursing course due to feeling overwhelmed with too much work. Some even questioned the purpose of the course when faced with high demands, that quitting seemed like an easier way out.

“Yeah, I do feel like giving up. And just like I can't do this. Don't wanna do it. Like, what's the point”? ” P18, Female, 27 Years, 1st Year

Category 5: Perceptions and feelings about oneself

Theme 14: Students being aware of and acknowledging their strengths and weaknesses which helped with one's self-efficacy

All students interviewed acknowledged and vocalized their thoughts and opinions about themselves in terms of their perceived strengths and weaknesses, thereby displaying high levels of self-efficacy. Some reported as being highly resilient, adaptable, having an outgoing and bubbly personality, being empathetic and easy to approach, creative, engaging, optimistic, independent and organized.

Sub-Theme 14.1: Several students reported being adaptable and resilient

Students reported feeling optimistic and flexible when faced with difficult situations. Some even reported being resilient and not giving up even things get difficult to deal with, or when dealing with already existing mental health conditions.

“My strengths, I think is that I'm very, very flexible. Thankfully, I can deal with whatever I get hit with. If I had to do something on the spot, I will learn how to do it in the spot. If I had to do” ” P11, Female, 20 Years, 2nd Year

Sub-Theme 14.2: Reaching out to fellow peers to offer support

Some students perceived themselves as being very friendly, open, and sociable. They perceived themselves for having an approachable and helpful personality so others can reach out to them if they are going through difficult circumstances.

“I I'm quite friendly and sociable and I like to help others. I like to see them succeed” ” P13, Female, 36 Years, 1st Year

Sub-Theme 14.3: Feeling readily stressed in various situations shook students' confidence

Feeling worried about different situations and constantly playing it at the back of the mind can come in the way of one's confidence. Some reported to feel stressed and anxious very easily and letting that come in the way of performing different tasks, e.g. completing assignments, etc.

“I just put too much pressure on myself and get too stressed and obviously you're going to be a bit more forgetful because you're stressed” ” P6, Female, 21 Years, 2nd Year

Sub-Theme 14.4: Poor management skills were observed due to getting easily distracted

Students facing difficulties sticking to a plan and displaying poor time management. Also, getting easily diverted to other unimportant things rather than the given task at hand. Some students also reported poor planning skills or sticking to a certain plan.

“So my weaknesses in terms of my personality would be I can get easily distracted. So something like that interests me a bit more, I will go towards that rather than what's in front of me” ” P2, Female, 27 Years, 3rd Year

Theme 15: Having high levels of confidence for completing the nursing course

Despite the ups and downs that students face as a part of their studies, placements, and even personal life; all participants reported feeling confident about passing the course and see themselves becoming a nurse someday.

“I’m very confident. I think not, because I’m being beheaded or anything, but because I am. I have sort of now found a good balance between my work life and my academic life, and I’m a personal life. I still struggle sometimes with my organization, but there’s never been a point where I’ve missed a deadline and or failed anything. So yeah, I think I’m quite confident that I’ll pass” ” P10, Female, 27 Years, 2nd Year

“I’m gonna be quite successful in completing this course just because I’m quite well driven” ” P9, Female, 19 Years, 2nd Year

“Uhm, if you asked me a few weeks ago, I’d say not very confident. But now it’s sort of I am more confident about it now. It just sort of you have setbacks sometimes, but I am quite confident now” ” P12, Female, 19 Years, 1st Year

6.3.2.4 Findings of focus groups

Similarly, the themes emerging from focus groups were divided into three broad categories, which were again divided into themes and sub-themes. The first category highlighted the coping strategies adopted by nursing students for dealing with clinical commitment (four themes and related sub-themes); second category included strategies adopted by students for maintaining an optimal work/study life balance (three themes and related sub-themes); the third category noted the coping strategies adopted by students for dealing with peers and professors (two themes and related sub-themes).

Table 17: Overarching themes and related sub-themes of the total sample in focus groups (n = 12)

Categories	Themes	Sub-Themes
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Category 1: Coping strategies adopted for dealing with clinical commitment (Situation 1)	Theme 1: Ensuring the family receives relevant information regarding their sick child	Sub-Theme 1.1: Providing correct materials which contain information regarding all formalities
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Theme 2: Focusing on the handover meeting first and then getting back to the patient's relatives

Theme 3: Finding a middle ground in order to cater to both relatives and the handover meeting

Theme 4: From an emotional perspective, students preferred providing reassurance to the family first before going in for the meeting

Sub-Theme 4.1: Offering full support and showing empathy to the family

Category 2: Strategies adopted for maintaining an optimal work/study-life balance (Situation 2)	Theme 5: Seeking social support in order to cope with the difficult situation	Sub-Theme 5.1: Approaching teachers for guidance or finding comfort in talking to peers
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Theme 6: Devising a schedule for incorporating both studies and caring responsibilities

	Theme 7: Focusing on emotional regulation in order to overcome the challenging situation	Sub-Theme 7.1: Circling back to studies after catering for one's mental health and wellbeing
Category 3: Coping strategies adopted for dealing with people, such as peers and professors (Situation 3)	Theme 8: Adopting problem focused coping strategies by resolving the situation as team	Sub-Theme 8.1: Discussing the issue with the professor first before making any decisions Sub-Theme 8.2: Contacting the unwell team member and carrying forward with the presentation
	Theme 9: Some preferred viewing the situation from an emotional perspective	Sub-Theme 9.1: Rescheduling the presentation date Sub-theme 9.2: Offering help to the unwell team member if they have not done the work

Category 1: Coping strategies adopted for dealing with clinical commitment (Situation 1)

Theme 1: Ensuring the family receives relevant information regarding their sick child

Sub-Theme 1.1: Providing correct materials which contain information regarding all formalities

When faced with the dilemma of catering to the family or focusing on the handover meeting, majority students believed in providing all necessary information to the family so they feel at ease before going for the handover meeting. They felt the need to provide comfort to the family who are distressing over the sick patient and reassuring them with correct information.

“Or I can see if I can find any information on the particular surgery that your son or daughter may have, because, you know, know on the, I dunno if it's the same at QMC or at City, but I know on Nottingham NHS Trust that you can search all the policies or the procedures or the medication, all of the surgeries that possibly may come about and you can print off patient leaflets You can make it easy read. You can make it in different languages. Mm-hmm and you can make it suitable for them. So you could provide 'em with that. If you know, you can't get hold of the doctor at that particular moment in time, or you can see if a junior doctor can come speak to them” G1, P2, 27 Years, 3rd Year

“So, um, I would explain that they need to wait for the doctor for that, but I'd explain that, um, sort of, as soon as these meetings finished, I will sort that out for them and make sure that they, um, are spoken to about, about their, um, child and they understand about the surgery” G3, P7, 20 Years, 3rd Year

Theme 2: Focusing on the handover meeting first and then getting back to the patient's relatives

In order to avoid making any errors, students reported that it's the doctors job to provide patients with all the relevant information. Hence, why many students selected option two of first attending the handover meeting before attending to the patient's family.

“Um, I would go with option two, um, purely because, um, whenever we've been told about patients and things, it's, it's the doctor's job to talk to them about the condition of the patient. Um, And so that's, that's not my job to do. And it, it would be out of my depth to start trying to explain a surgical procedure to them. So I wouldn't do that. And handover is really

important and you need to get to know your patients for the day. So that is why I would explain to them that I had a meeting to attend” G3, P7, 20 Years, 3rd Year

“Maybe just explain to them that the reason you have the handovers is so you can share information about patients and you're going to have like members of the MDT in the meetings as well. So they're obviously going to have different information that you might have received from the other nurses if they've done like ward rounds and things. So yeah, I'd go for option two as well” G4, P10, 20 Years, 2nd Year

Theme 3: Finding a middle ground in order to cater to both relatives and the handover meeting

Several students picked a mix of two options, of catering to both the handover meeting and the patient's family. They felt the need to deescalate the situation first and provide comfort to the family who are worried about the patient, but also reassuring them that they will receive all relevant information once they have attended the meeting.

“Um, I think I'd actually do a bit of a hybrid between the two. I think I was sort of similar in the idea of like, you sort of need the handover meeting to know every single information if anything's happened like complications or anything that could have changed it. So I think it definitely would be a hybrid of like, if they are literally like very like aggressive in their sense, you sort of do need to sort of, of like deescalate the situation beforehand” G2, P5, 19 Years, 1st Year

“Um, yeah, so I would sort of merge them both together and I would sympathize with the parent and ex like explain to them then option two. And I would say like, I know this is really stressful and you are angry and frustrated about whatever, but I can't explain any of this to you” ” G3, P7, 20 Years, 3rd Year

Theme 4: From an emotional perspective, students preferred providing reassurance to the family first before going in for the meeting

Sub-Theme 4.1: Offering full support and showing empathy to the family

Some students resorted to using emotion-focused coping strategies in order to deal with the difficult situation. They preferred providing comfort to the family first and taking into account their needs before proceeding for the handover meeting.

“But yeah, it's just about just calming the situation down and then. Carrying on with handover” ” G2, P6, 21 Years, 2nd Year

“Um, so kind of starting off sympathizing, because if you've got really distressed parents and that's obviously something that needs to be dealt with, um, but explaining to them there'll be other people around that to speak to as well, but giving them the time to kind of vent and reassure them before leaving them” G2, P4, 25 Years, 1st Year

Category 2: Coping strategies used for maintaining an optimal work-life balance (Situation 2)

Theme 5: Seeking social support in order to cope with the difficult situation

Sub-Theme 5.1: Approaching teachers for guidance or finding comfort in talking to peers –

Seeking advice from fellow peers or from teachers seemed as a popular option which many students chose. This is because students felt their seniors have probably been through similar experiences and can provide them with better guidance of how to take care of the relative and focussing on the assigned academic task.

“And I think I'd also go with option three as well, because you know, sometimes your peers can give you the best advice” ” G1, P2, 27 Years, 3rd Year

“I would preferably, as an addition, I would notify the module lead or my tutor explain what's going on just to kind of prepare them just in case something was to happen and something did get worse in regards to the relative” G2, P5, 19 Years, 1st Year

Theme 6: Devising a schedule for incorporating both studies and caring responsibilities

Coming up with a time-table that would allow one to take care of the relative's needs along with focussing on the given academic tasks.

“Um, and just kind of put a plan in place just in case there needs to be an extension. Um, but definitely trying to time plan, like a gantt chart or something like that to fit in time for both”
G2, P5, 19 Years, 1st Year

“Ideally option 2 actually because if I went for option one and I had the submission that may affect future assignments or future course works, so maybe it isn't the best but option two is also not really the easiest option of them all. 'cause you've got a lot of new plate and you're struggling to fit any of them. But yeah, I would”
G4, P10, 20 Years, 2nd Year

Theme 7: Focusing on emotional regulation in order to overcome the challenging situation

Sub-Theme 7.1: Circling back to studies after catering for one's mental health and wellbeing

Given the relative's poor health, it is inevitable that students feel easily distracted from their university work. Therefore, some students opted for catering to their mental health first and avoid university work till things settle back at home. Therefore, students came from an emotional perspective where they preferred requesting for extenuating circumstances in order to handle the situation both at university and at home. This is due to the fact that students found it difficult to focus on academic tasks when taking care of a sick relative.

“I needed to make that time for myself and take a, uh, a break and step back for my mental health before it got any worse. Um, but that's what I really like about university that they give you that chance. They're a bit more realistic to the day to day life”
G1, P1, 24 Years, 1st Year

“And so I will say because personally for me, I can not focus when I'm stressed or when I'm ill. So I wouldn't expect myself to be able to do my uni work. So I'll go with option one, just because it helps me like prepare ahead”
G3, P8, 18 Years, 1st Year

Category 3: Coping strategies adopted for dealing with people skills (Situation 3)

Theme 8: Adopting problem focused coping strategies by resolving the situation as team

Sub-Theme 8.1: Discussing the issue with the professor first before making any decisions

Contacting the professor and letting them know about the unwell team member, and getting appropriate advice from them before making decision of whether to carry on with the presentation, or to wait for another day for when the unwell team member can also join and contribute.

“And if it's not going to go anywhere, I'd probably turn to the professor and ask, uh, help just to help” ” G2, P5, 19 Years, 1st Year

Sub-Theme 8.2: Contacting the unwell team member and carrying forward with the presentation

If the team decides to go ahead with the presentation on the same due date, then contacting the unwell team member asking questions regarding their portion.

“But I was thinking if they like hadn't done the work. I would help them do the work. So actually option three would, according to me, would fit perfectly over here because you would contact the team member. Who did not show up and then ask for help. Yeah. Like tell me that what you have done. So like, you know, and that's when you'll get to know actually whether the person's actually done something or not, you know”? ” G1, P1, 24 Years, 1st Year

“Um, I think I'd start with option three and just see if before they started feeling unwell, if they'd been able to do any of it” ” G2, P4, 25 Years, 1st Year

Theme 9: Some preferred viewing the situation from an emotional perspective

Sub-Theme 9.1: Rescheduling the presentation date

By taking into account the unwell team member and their contributions, some students chose the option of rescheduling the presentation date, as this would allow sufficient time for the unwell team member to recover and be better prepared for the presentation.

“Deal with it and maybe give another date just cuz it means that it might be a better presentation from that person as well” G2, P5, 19 Years, 1st Year

Sub-theme 9.2: Offering help to the unwell team member if they have not done the work

Helping out the unwell team member with their part, if they have not worked on it given their sickness, and carrying forward with the presentation by also including their credits.

“And, um, yeah, I think, I, I think I'd to contact them, see what they've done, if they've done it or not. So if they've done it, we can just read it out and say it was their work, but I think I haven't done it. I'd try and help them do it or do it for them. and then just say it with that work” G1,P3, 19 Years, 2nd Year

“I think I'd do like two of them. Like I think I'd start off with like option three and try, speak to the actual team member and see if they, cause they said they're not keeping well, that has it improved. Is there anything that we can do”? G2, P5, 19 Years, 1st Year

6.4 Summary of findings

The current study aimed to understand the relationship among stress, EI, self-efficacy and coping in nursing students in the UK, from a mixed-method perspective. The current study also took into account the moderating/mediating role of EI in the relationship between self-efficacy and stress. From a qualitative perspective, this study aimed to gather in-depth data (through semi-structured interviews and focus groups) on the various stressors and challenges students encounter in terms of academic and clinical tasks; the impact of stress on their psychological wellbeing; thoughts and opinions regarding the nursing curriculum; coping strategies adopted by students for dealing with stress; and aspects related to self-efficacy. The

aim of the focus group session was to gather data on the various coping strategies students may adopt when placed in difficult academic or workplace situations.

Results derived from the quantitative data (questionnaires), indicated the presence of moderate stress levels among nursing students ($M = 30.5$, $SD = 7.679$); moderate levels of EI ($M = 116.71$, $SD = 20.201$); and moderate to high levels of general self-efficacy (28.44 , $SD = 4.958$). With regard to coping strategies, students adopted more emotion-focused coping mechanisms for dealing with stress ($M = 29.10$, $SD = 4.783$), followed by problem-focused coping ($M = 20.68$, $SD = 4.605$). The use of avoidance coping was the lowest out of all three ($M = 15.21$, $SD = 3.820$). Pearson's correlations and moderation/mediation analysis were used via SPSS. The output demonstrated a weak negative correlation between problem-focused coping and stress ($r = -.257$, $p < 0.044$); a strong positive correlation between stress and avoidance coping ($r = .580$, $p < 0.001$); and no association was found between stress and emotion-focused coping. These findings are consistent with previous literature where the use of problem-focused coping was negatively associated with stress, whereas stress had a positive association with avoidance coping (Seyedfatemi et al., 2007; Shaban et al., 2007; Lo, 2022; Labrage, 2016; Kumar, 2011; Berges, 2007; Alshahrani et al., 2018; Steele et al., 2005; Nebhinani et al., 2020; Zhao et al., 2014; Hirsch et al., 2014; Labrague, 2021; Alsolais et al., 2021; Hamadi et al., 2021; Kim et al., 2021; Hasson et al., 2021). EI and self-efficacy had a positive significant correlation ($r = .552$, $p < 0.001$); and a negative association was found between stress and EI ($r = -.476$, $p < 0.001$); and a strong negative correlation between stress and self-efficacy ($r = -.699$, $p < 0.001$). Again, these findings are consistent with prior literature demonstrated a strong association between EI and self-efficacy, and a negative association between stress and EI/self-efficacy (Hashemi and Ghanizadeh, 2011; Chan, 2007; Villanueva and Sánchez, 2007; Moafian and Ghanizadeh, 2009; Li and Sun, 2018; B.ZhuC et al., 2016; Rice, 2013; Varughese and M.K., 2021; Kim, 2016; Kim et al., 2019; Lim et al., 2020). Finally, A weak positive correlation was found between problem-focused coping and EI ($r = .349$, $p < 0.005$), consistent with previous research (Por et al., 2011; Rebello, 2019; Kim and Han, 2015; Berges, 2007; Song et al., 2014; Carmen et al., 2018); and between problem-focused coping and self-efficacy ($r = .372$, $p < 0.003$), consistent with previous research (Bodys-Cupak et al., 2016; Zhao et al., 2014; Kyun et al., 2020; Shikai et al., 2007).

The qualitative findings, through semi-structured interviews and focus groups, were derived using the method of thematic analysis (Braun and Clarke, 2006). As mentioned above, the

themes emerging from interviews were divided into five broad categories, after which relevant sub-themes were formulated. The first category highlighted the feelings and perceptions of students regarding the nursing course. The reason for students to undertake the nursing course was driven by their desire to help people and contribute towards society (Theme 1); some students mentioned taking care of their sick relatives which led them to take this decision. When students were asked to describe their thoughts regarding the nursing curriculum, they perceived the university set-up as encouraging and supportive to all students (Theme 2). A related sub-theme revolved around receiving academic support from professors; another sub-theme highlighted was a good balance between theory and clinical skills which kept students motivated to the course, rather than just focussing on theoretical knowledge. The second category shed light on the different academic, organisational and personal stressors/challenges students faced during their course. A challenge that majority of students faced was balancing between academic work and placements (Theme 3). These findings are consistent with prior literature; the added clinical component of the nursing course causes more stress among nursing students, as compared to students in other fields component (Seyedfatemi et al., 2007; Zhao et al., 2015; Mahat, 1998; Shriver and Scott-Stiles, 2000; Yıldırım et al., 2017; Evans and Kelly, 2004). Another highlighted theme was the demanding nature of the nursing course (Theme 4); students felt the course material was overwhelming and faced difficulties keeping up with the deadlines. Some students also reported facing struggle with conducting extensive research followed by academic writing. Additionally, with the emergence of COVID-19, students reported extreme stress in terms of interacting with other peers and teachers; having to do the course online instead of going to the campus. Previous research has also demonstrated the impact of COVID-19 among nursing students (Morales-Rodríguez et al., 2020; Zeynep, 2020; Kürtüncü and Kurt, 2020). With regard to placements, students reported feeling mentally drained (Theme 5); facing challenges such as being short staffed, dealing with sick patients, keeping up with the high standards were some of the main reasons for experiencing stress during placements, as also consistent with previous literature (Zhao et al., 2015; Yıldırım et al., 2017).

The third category explained the impact of such stressors on the psychological wellbeing of nursing students. A major theme highlighted was the impact of academic and placement stressors on students' mental health (Theme 6). Students reported experiencing low moods due to the hectic workload, thereby feeling demotivated to perform the required tasks. Other related sub-themes included feelings of frustration with oneself and others around them;

feeling overwhelmed; difficulties switching off; and experiencing low self-esteem, particularly upon feedback from teachers. Students also experienced challenges in terms of lifestyle changes as a consequence of high stress; with mind on constant overdrive, students reported sleeping difficulties. Some even reported changes in appetite. Work-life balance was too negatively affected among students, as most reported difficulties striking a healthy balance between academic and personal pursuits (Theme 8). Findings are against consistent with prior research demonstrating the negative impact of stressors on the psychological wellbeing of nursing students (Ratanasiripong and Wang, 2011; Tee et al., 2016; Yıldırım et al., 2017; Seyedfatemi et al., 2007; Dahlin et al., 2005). As mentioned previously, adopting effective coping strategies is a crucial requirement among nursing students for dealing with stressful situations (Wastson et al., 2009). In order to gain an in-depth insight, the fourth category shed light on the varied coping mechanisms adopted by nursing students. Seeking social support was the most common coping strategy (Theme 9) as reported in the results, also consistent with previous research (Seyedfatemi et al., 2007; Labrague, 2016; Kumar, 2011; Berges, 2007; Alshahrani et al., 2018). Students preferred approaching their teachers and peers for seeking guidance. Majority of students perceived their tutors as supportive, approachable and helpful with regard to all academic issues. Students also reported making use of the university of welfare service with regard to seeking guidance during difficult times, such as COVID-19. A related sub-theme highlighted socialising with friends and families for the purpose of venting. Lastly, students also reported making use of professional support, e.g. undergoing therapy or taking medications. Another important highlighted theme was students engaging in hobbies and physical activities as a source of distraction from a stressful day (Theme 10), e.g. reading, running, gym, etc. With regard to negative feedback from teachers, several students perceived as constructive criticism as a means for improving oneself rather than feeling low about their hard work (Theme 11). Even with regard to overcoming demotivation, students adopted more problem-focused coping strategies (Theme 12), in terms of putting a day planner and breaking the assignments down into sections, taking regular breaks, and pushing oneself to finish the work as a strong motivation to complete the nursing course. Some students also made use of avoidance coping for dealing with stress (Theme 13), in terms of procrastinating the given tasks, requesting for extension, or having thoughts of giving up the course. Finally, the fifth category highlighted aspects of self-efficacy among nursing students. Students took into account and acknowledged their own strengths and weaknesses, thereby displaying high levels of self-efficacy (Theme 15). Furthermore, all students reported high levels of confidence in completing the nursing course (Theme 15).

Similarly to the interviews, the method of thematic analysis (Braun and Clark, 2006) was adopted for analysing focus group sessions. The themes emerging from the focus groups were broadly categorised into three main categories, followed by the formulation of related sub-themes. The first category entailed the coping strategies adopted by students for dealing with the clinical commitment of whether to deal with patients' relatives, or to focus on the handover meeting before catering to the family. Students reported a mix of problem-focus and emotion-focus strategies; some reported providing the family with relevant information (Theme 1), or focusing on the handover meeting first before catering to the family (Theme 2). This could be attributed to the fact that students did not want to make any errors, and preferred if senior nurses or doctors would handle the situation better with regard to providing the right information. Some even reported finding a middle ground (Theme 3); catering to the family but also attending the handover meeting. Whereas some displayed preference for reassuring the family and offering them support and empathy, instead of focusing on the handover (Theme 4). The second category highlighted the coping strategies students may adopt during a crisis situation of balancing working towards an important deadline, along with catering to a sick relative back at home. Seeking social support was commonly reported by majority of students for handling this situation (Theme 5); either in the form of approaching teachers for support, or venting to peers. Several students believed in devising a schedule for incorporating both studies and their caring responsibilities (Theme 6); whereas some preferred taking care of their own mental health and wellbeing first before circling back to their academic requirements (Theme 7). Lastly, the third category included strategies adopted by students for dealing with an absent peer on the day of an important presentation. Again, a mix of problem-focus strategies (Theme 8), e.g. discussing the issue with the professor before making any decisions, contacting the unwell team member to ask about their required portion completion followed by giving the presentation as planned originally; and emotion-focus strategies were reported (Theme 9), e.g. rescheduling the presentation date and include the unwell team member, and offering support and help to the team member for completing the required portion.

6.5 Integration of findings and implications

Results derived from quantitative findings demonstrated a significant association between all four (stress, coping strategies, EI, and self-efficacy) variables (as depicted in Table 3).

However, findings did not indicate an association between emotion-focused coping and stress; or emotion-focused coping and self-efficacy; and emotion-focused coping and EI, despite the fact that the majority of students adopted more emotion-focused coping strategies as compared to other strategies (as depicted in Table 2). Hence, the added qualitative findings (derived from interviews and focus groups) helped to add more depth to the study and helped gather in-depth data on the various coping mechanisms adopted by the current sample. Also, given that the questionnaire conducted did not cover aspects of COVID-19, the qualitative findings took into account the various challenges students faced during the ongoing global pandemic. For instance, results derived from focus groups demonstrated a mix of both problem-focused and emotion-focused strategies in all three stressful situations (academic or with regard to placement issues). Students believed in offering support and empathy to patients, families of patients, and peers when required; whereas some believed in focusing on tasks at hand from a pragmatic point of view. Through interviews, findings reported the coping strategies adopted by students to deal with negative feedback on assignments and during placements; and strategies they adopted for overcoming demotivation. In both scenarios, most students made use of effective coping mechanisms. However, in all three methods of data collection, the use of avoidance coping was minimal among nursing students; as consistent with prior literature. In addition, the interviews helped understand students' thoughts and perceptions regarding the university set-up; how they felt about the course, teachers, and curriculum generally, which again was not covered in the quantitative findings. Furthermore, findings derived from interviews also captured the impact of stress on the psychological wellbeing of nursing students; which was again not depicted in quantitative results. Finally, it allowed students to think about and acknowledge their strengths and weaknesses, and their confidence about completing the nursing course, thereby indicating high self-efficacy.

Bearing in mind the theoretical framework the current study has adopted, it is safe to say that the above quantitative and qualitative findings can be associated with the JD-R model as discussed previously. Given the current version of the JD-R model (Bakker, Demerouti, 2017), it suggests that personal resources are positive aspects of self which are associated with one's ability to control and act in their surroundings effectively. Such personal resources may buffer the negative effects of job demands on stress, or academic demands as in the case of students, thus making it easier for individuals to invest extra energy in order to achieve their goals. This, in turn, facilitates higher motivation and engagement (Mérida-López et al.,

2019). As mentioned previously, emotional demands are also job demands which healthcare professionals and students experience given their hectic schedules; such emotional demands can have significant effects on one's psychological wellbeing and performance, especially for individuals with lower self-efficacy (Xanthopoulou et al., 2013). Therefore, effective coping mechanisms, high levels of EI, and self-efficacy can be categorised as crucial personal resources which may help students enhance their psychological wellbeing and performance, thereby leading to healthier organisations, institutions, and societies in general (Di Fabio, 2017).

Findings of the current study have considered the practical implications in terms of recognising the sources of stress among nursing students. These will be disseminated to nursing education to allow the university welfare services and academic leads to take appropriate measures for reducing stress and improving one's psychological wellbeing. More importantly, findings of the study revealed a significant positive association between problem-focused coping and EI, and self-efficacy; and a negative association was found between all three variables with stress. Therefore, it is essential for nurse educators to understand the significance of EI, self-efficacy and coping; the nursing curricula should be devised in a way to include more training in EI and effective coping among nursing students. After all, encouraging EI, self-efficacy, and effective coping strategies among students can reduce the negative impact of stress on their psychological wellbeing; and fortify its sustainability beyond education, and into the nursing profession.

6.6 Strengths and limitations of the study

Given the scarce literature on the relationship between the four mentioned variables (stress, coping, EI, and self-efficacy), the current study examined this relationship among nursing students by combining elements of both quantitative and qualitative research approaches, thereby adding more depth and breadth to the study. Likewise, there is limited literature on studies conducting interviews and focus groups among nursing students. Therefore, the current study gained an in-depth understanding of the stressors experienced by students, their opinions regarding the nursing curricula, coping strategies adopted, and aspects of self-efficacy through semi-structured interviews. The added element of focus groups shed light on different coping mechanisms used by students when placed under various difficult situations,

with regard to both academic work and placements. Furthermore, the presence of high stress among nursing students, bearing in mind the difficulties experienced during the global pandemic, this study paves way for training students with EI and effective coping strategies.

Despite the valuable contributions of the current study, certain limitations have also been acknowledged. First, the research population of this study was small and confined to nursing students studying at the University of Nottingham. Therefore, findings of the study cannot be generalised to a larger nursing student population studying in other universities across the country. Second, the design of the study was cross-sectional and correlative in nature. Third, there was no moderation/mediation effect of EI in the relationship between self-efficacy and stress; this could again be due to the small sample size. Fourth, this study did not differentiate between students in different academic years of study; e.g. the study did not differentiate between the presence of stress, coping strategies, EI and self-efficacy among students in 1st year from students in 2nd or 3rd year, and vice versa. Fifth, other demographic characteristics (such as gender, ethnicity, marital status, and age) were not included as variables in the study when conducting the analysis. Sixth, the current study focused on the psychological impact of stress, while neglecting aspects of physical wellbeing among nursing students.

6.7 Future directions

Findings of the current study paves way for future studies to investigate the presence of stress, EI, self-efficacy and coping among nursing students from different academic years of study. This is because there is a possibility that students in the third year are more emotionally intelligent and adopt more effective coping mechanisms, as compared to students in the first or second year. Therefore, more mixed-method studies are required for this purpose. In addition, future research should adopt more longitudinal study designs in order to investigate the moderation and mediation effects over time, thereby providing stronger evidence. Also, studies need to include more focus group sessions among nursing students. Similar to the current focus group study, future research must aim to understand students' emotions and coping mechanisms by placing them in various stressful situations, from a more clinical skills perspective. This exercise may help prepare students for the future, as professional nurses. Furthermore, research should consider the importance of wellbeing interventions offered to university nursing students for managing stress and improving psychological wellbeing. Finally, studies should focus on training students with EI and

aspects related to self-efficacy, thereby allowing them to adopt better coping mechanisms for dealing with stress.

6.8 Conclusions

Findings from the current study revealed the presence of moderate stress levels among nursing students; with academic workload, and balance between theory and clinical skills as the most commonly reported stressors. Results also revealed moderate to high levels of EI and self-efficacy among students. Overall, all students adopted effective coping strategies; seeking social support from peers, teachers, university, and family/friends was the most frequently adopted coping strategy. These findings, from both quantitative and qualitative perspectives, are significant and suggest intervention strategies for improving students' EI and self-efficacy. This will help students feel better equipped to deal with stressors and adopt effective coping strategies during their period of education, and in their future profession as nurses.

CHAPTER 7: GENERAL DISCUSSION

7.1 Summary of findings

Referring back to the overarching aims in the first chapter (Introduction), the current PhD project aimed to understand the impact of stress on the psychological wellbeing, including aspects related to work performance, and coping in nurses working for the NHS UK (Study 1, Chapter 4). Further, the thesis evaluated the effectiveness of an eight-week MBCT programme in terms of improved psychological wellbeing and work performance delivered to the NHS employees, along with an in-depth understanding of participants' acceptability towards the programme (Study 2, Chapter 5). Finally, the current project also explored the relationship among stress, coping strategies, EI, and self-efficacy in the UK in nursing students (Study 3, Chapter 6).

Study 1

Findings of Study 1 demonstrated a significant positive relationship between stress and impaired work performance. In other words, the presence of high stress levels was associated with impaired work performance in nurses. Also, stress was found to be linked to reduced work satisfaction among nurses in the current study. In terms of absenteeism and presenteeism, no significant relationship was found between stress and absenteeism, or between stress and presenteeism. However, the presence of stress among nurses seemed to have been linked with impairment in overall daily activities outside the workplace. With regard to the role of EI as a moderator and mediator in the relationship between stress and work performance, the results of the current study revealed that EI did not moderate the relationship between stress and work performance among nurses. But EI partially mediated the relationship between the two constructs. In other words, the strength of the relationship between stress and work performance did not depend on the presence of EI (moderation); however, the relationship between stress and work performance could be explained by the presence of EI (mediation).

The themes and underlying subthemes derived from the interviews were broadly categorised into six categories, followed by the formulation of relevant themes and sub-themes. The first category noted various stressors experienced by nurses on a daily basis; in terms of high

workload due to delivering tasks in a short span of time, having short or no breaks, lack of time for managing everything, shortage of staff due to increased sickness absence or nurses going on maternity leaves, dealing with high patient demand. Some other sources of stress included working in unfamiliar environments, dealing with patients and relatives, overcrowding hospitals, and bullying. With the onset of the COVID-19 pandemic, the stressors experienced seemed to be pretty much the same albeit exacerbated during this time. For instance, workload was doubled, more increase in shortage of staff was reported, including stress of redeployment, changing rules and regulations given the lockdown restrictions, fear of getting infected with the virus or infecting loved ones back at home, and dealing with severely ill patients or witnessing death of patients.

The second category offered a deeper understanding of the impact of stress on the psychological wellbeing in nurses; results indicated adverse effects on mood, feelings of frustration, difficulty switching off, anxiety, depression, lifestyle changes, and negative work-life balance. The negative effects of stress on the work performance of nurses was also discussed in further detail; results hinted inefficient delivery of tasks, poor decision-making skills, concentration difficulties, limited attention span, increased errors, forgetting important information, and feelings of frustration towards other colleagues. The fourth category referred to what coping mechanisms nurses adopt in order to deal with stress, with seeking social support as a predominant coping mechanism reported. Nurses preferred seeking support from colleagues, senior nurses, family and friends, including professional support. Other coping strategies noted were making notes, staying calm, taking regular breaks, avoiding confrontation, and engaging in physical or leisure activities. Participants' opinions regarding the NHS work environment marked the fifth category of the analysis; while the majority of nurses reported feeling supported and happy with their current role, some felt the support received was inadequate, including experiencing difficulties in reaching out to the higher management or occupational health for stress-related issues. This led to certain recommendations offered by nurses in terms of better communication and awareness by the higher management; including the need for more and better resources such as funding, better parking facilities, the need for more trained staff, and more beds in order to avoid hospital overcrowding. Finally, the last category captured nurses' opinions regarding the wellbeing support offered to them by the NHS; where half of the participants were aware of the interventions offered (for example, CBT, EAP, counselling, mindfulness, etc) but did not feel the need to use them, as they preferred approaching their line managers/supervisors in order

to discuss stressful events or wellbeing issues. Some even reported lack of time, heavy workload, and long waiting lists which posed as a barrier for the uptake of these interventions. Further, some reported feeling more comfortable venting to their co-workers, or resolving the issue by themselves whereas the other half were not even aware of what was being offered to them.

Study 2

The quantitative results were derived from questionnaire data conducted before and post the MBCT programme. Scores obtained at baseline, from before the programme commenced, depicted the presence of moderate levels of depression, high levels of perceived stress, low to moderate levels of mindfulness, and low to moderate levels of overall quality of life. Upon completion of the programme, scores obtained on the same set of questionnaire depicted mild levels of depression, mild levels of stress, moderate to high levels of overall mindfulness, and moderate to high levels of overall quality of life. Further, significant reductions in depression supported Hypothesis 1 (H1 – There will be a significant change in depression post the MBCT programme in NHS employees, as compared to before the programme commenced); and significant reductions in stress levels supported Hypothesis 2 (H2 – There will be a significant difference in perceived stress post the MBCT programme in NHS employees). Significant increases in mindfulness levels were reported; similarly, quality of life was significantly increased among participants, as compared to prior to the start of the MBCT programme, thereby supporting Hypothesis 3 and Hypothesis 4 respectively (H3 – There will be a significant increase in the level of mindfulness post the MBCT programme in NHS employees; H4 – There will be a significant increase in the quality of life post the MBCT programme in NHS employees).

Thematic analysis produced themes and underlying subthemes under three broad categories. The first category highlighted participants' perceptions regarding the delivery of the MBCT programme; wherein participants reported an efficient delivery of relevant information. Participants perceived that the therapist played a crucial role in keeping them engaged in the course due to their warm personality and knowledge about mindfulness. Also, given that the sessions were held online due to the social lockdown situation, some participants reported a preference for a face-to-face environment, whereas some felt connected with the course and the participants even though it was held online. With regard to the techniques taught during each session, participants displayed a strong preference for the body scan technique, followed

by the three-minute breathing exercises, mindfulness with movement technique, and sitting meditations as ways for improving their overall wellbeing. However, one issue pertaining to the techniques noted was its lengthy duration; wherein participants displayed more preference for shorter exercises than longer ones. Similarly, some dissatisfaction was reported towards the timing of the sessions and difficulties to engage after a hectic work day. Also, the homework tasks post every session received mixed opinions; some displayed a lack of commitment towards homework whereas some reported homework as extremely useful and engaging. Further, given the group setting of the MBCT programme, participants shared their opinions regarding the group's nature and size. Several participants felt pressured to open up given the lack of commitment from other participants; few dropouts were noted thereby adding more pressure on other participants to share their experiences. However, on the whole, the majority perceived the programme as a safe space to work upon oneself.

The second category shed light on the impact of MBCT training on the psychological wellbeing and work performance of NHS employees. With regard to psychological wellbeing, participants reported reduced stress levels, feeling more relaxed, better moods, increased awareness, and positive work-life balance. Also, the programme helped participants cope with these pressures pertinent to the pandemic in terms of reduced stress levels, feeling calmer and settled, and feeling positive even during lockdown. Several improvements with regard to work performance were noted; participants reported increased concentration, efficient delivery of tasks, enhanced ability to manage workload, and improved organisational skills. Further, MBCT played a crucial role as a coping mechanism for dealing with stress (Theme 12). As a result of increased awareness, participants were able to switch off from 'autopilot' and appreciate oneself and their surroundings. Participants also reported a better ability to handle difficult situations as a result of increased mindfulness.

Finally, the third category highlighted recommendations offered by participants for improving MBCT delivery in the future. Some participants recommended the facilitation of increased awareness of the programme so as to enhance staff interest. On the other hand, the majority of participants had no suggestions to offer; they perceived it as extremely beneficial in terms of overall wellbeing, and also stated that they would recommend the intervention to other colleagues.

Study 3

Results derived from the quantitative data (questionnaires), indicated the presence of moderate stress levels in nursing students; moderate levels of EI; and moderate to high levels of general self-efficacy. With regard to coping strategies, students adopted more emotion-focused coping mechanisms for dealing with stress, followed by problem-focused coping. The use of avoidance coping was the lowest out of all three. A weak negative correlation between problem-focused coping and stress; a strong positive correlation was noted between stress and avoidance coping; and no association was found between stress and emotion-focused coping. Also, self-efficacy had a positive significant correlation; a negative association was found between stress and EI; and a strong negative correlation between stress and self-efficacy. Finally, a weak positive correlation was found between problem-focused coping and EI; and between problem-focused coping and self-efficacy. With regard to the moderation and mediation analysis, EI did not moderate or mediate the relationship between self-efficacy and stress.

The themes and underlying subthemes emerging from the interview data were divided into five broad categories. The first category highlighted the feelings and perceptions of students regarding the nursing course; wherein students reported receiving academic support from professors, along with a good balance between theoretical and practical knowledge, thereby encouraging more engagement and motivation from students. The second category shed light on the different academic, organisational and personal stressors/challenges students faced during their course. A challenge that the majority of students faced was balancing between academic work and placements; followed by other stressors such as overwhelming course material, keeping up with the deadlines, struggling with conducting extensive research, and issues with academic writing. Additionally, with the emergence of COVID-19, students reported extreme stress in terms of interacting with other peers and teachers; having to do the course online instead of going to the campus. With regard to placements, students reported feeling mentally drained (Theme 5); facing challenges such as being short-staffed, dealing with sick patients, and keeping up with the high standards. The third category portrayed the impact of such stressors on the psychological wellbeing of nursing students; in terms of low moods, feelings of demotivation, feelings of frustration with oneself and others around them, feeling overwhelmed difficulties switching off and experiencing low self-esteem, particularly upon feedback from teachers. Students also experienced challenges in terms of lifestyle changes as a consequence of high stress; in terms of sleeping difficulties, changes in appetite, and negative work-life balance. The fourth category offered an account of the coping

strategies adopted by nursing students. Seeking social support was the most common strategy reported; in terms of approaching their teachers and peers for seeking guidance, using university of welfare service, socialising with friends and families for the purpose of venting, and making use of professional support. Students also engaged in hobbies and physical activities as a source of distraction from stress (for example, reading, running, gym, etc.). Also, students perceived negative feedback as constructive criticism as a means for improving oneself; putting a day planner and breaking the assignments down into sections, taking regular breaks were some strategies adopted to overcome demotivation. Some students also made use of avoidance coping for dealing with stress; such as procrastination, requesting for extension, or having thoughts of giving up the course. Students took into account and acknowledged their own strengths and weaknesses, thereby displaying high levels of self-efficacy. Furthermore, all students reported high levels of confidence in completing the nursing course.

Similarly, the focus group findings were broadly categorised into three categories, followed by the formulation of related sub-themes. The first category encompassed the coping strategies adopted by students for dealing with clinical commitment; of whether to deal with patients' relatives, or to focus on the handover meeting before catering to the family. A mix of problem-focused and emotion-focused strategies were reported; some reported providing the family with relevant information, or focussing on the handover meeting first before catering to the family. Some students also believed in finding a middle ground (catering to the family but also attending the handover meeting); whereas some displayed preference for reassuring the family and offering them all the support and empathy, instead of focusing on the handover. The second category highlighted the coping strategies students may adopt during a crisis situation of having to balance working towards an important deadline, along catering to a sick relative back at home. Here, seeking social support was commonly reported; either in the form of approaching teachers for support, or venting to peers. Additionally, students believed in devising a schedule for incorporating both studies and their caring responsibilities; whereas some preferred taking care of their own mental health and wellbeing first before circling back to their academic requirements. Finally, the third category included strategies adopted by students for dealing with an absent peer on the day of an important presentation. Again, a mix of problem-focus strategies (e.g. discussing the issue with the professor before making any decisions, contacting the unwell team member to ask about their required portion completion followed by giving the presentation as planned

originally) and emotion-focused categories (e.g. rescheduling the presentation date and include the unwell team member, and offering support and help to the team member for completing the required portion) were reported by students.

7.2 Integration of findings and implications

Referring back to the theoretical framework adopted for the current PhD project; the JD-R model has been recognised as one of the leading stress models among researchers since the beginning of the twenty-first century (Demerouti et al., 2001). Reasons for adopting this model as compared to other frameworks can be attributed to its flexible and heuristic nature (Schaufeli and Taris, 2014). This model assumes that the mental health and psychological wellbeing of employees is a result of balance between both negative (demands) and positive (resources) characteristics; it takes into account any job demand and any resources which may affect employee psychological wellbeing, and not restrict itself to any specific demands or resources, thereby broadening the scope to a wider variety of work environments (Schaufeli and Taris, 2014). Also, the recent addition of personal resources, along with job resources, represents a way of thinking how employee psychological wellbeing and motivation can be influenced. Thus, even if there is no overlap between two or more study constructs, they could still be based on the same assumptions of the JD-R model (Schaufeli and Taris, 2014). As mentioned previously, the gist of the model states that higher job demands lead to stress, causing poor psychological wellbeing and impaired work performance. Conversely, high levels of job resources are expected to trigger enhanced psychological wellbeing, thereby leading to improved work performance. Further, the added personal resources also play a crucial role in buffering the negative effects of stress, thereby enhancing psychological wellbeing and work productivity (Bakker and Demerouti, 2011).

The above findings across all three studies, from both the quantitative and qualitative data, can further be correlated with the JD-R model. For instance, findings of Study 1 highlighted various stressors (job demands) experienced by nurses both during and before the commencement of the global pandemic. Such demands negatively impacted the psychological wellbeing (in terms of low moods, frustration, difficulty switching off, anxiety, depression, lifestyle changes, and negative work-life balance), thereby impacting their work productivity (in terms of inefficient delivery of tasks, poor decision-making skills, concentration difficulties, limited attention span, increased errors, forgetting important

information, and feelings of frustration towards other colleagues). Conversely, the study highlighted the significance of personal resources such as coping strategies (in terms of seeking social support, having good communication with patients and relatives, taking regular breaks, making notes to feel more organised, and engaging in physical and leisure activities) adopted by nurses for dealing with the negative effects of stress on their psychological wellbeing and work performance; along with EI which mediated the negative effects of stress on work performance, as noted in the results. In addition, as highlighted in the study findings, job resources also played a significant role for helping nurses deal with their daily demands (in terms of support from the line managers and organisational support); however, a need for further job resources were also highlighted (in terms of better communication, increased job recognition, more number of beds, and increased funding). Further, even though the results highlighted some uptake on the provision of wellbeing interventions offered by the NHS organisation, certain issues were reported pertaining to accessibility; including lack of awareness of the wellbeing interventions.

These organisational wellbeing interventions, based on the JD-R model, helps optimise job demands along with optimising both job and personal resources. Some examples include online psychological wellbeing interventions, and group training sessions for strengthening an organisation (Bakker and Demerouti, 2014). Bearing this in mind, along with the findings highlighted in the 'Scoping Review' (Chapter 2), MBIs (particularly MBCT) has emerged as a crucial psychological wellbeing intervention. Also, findings reported in Study 2 have demonstrated the effectiveness and acceptability of the eight-week MBCT programme as a significant job resource, helping NHS employees improve their overall psychological wellbeing (in terms of reduced stress and depression; improved mindfulness and quality of life; feeling more relaxed, better moods, increased awareness, and positive work-life balance); a positive impact on the work performance (in terms of increased concentration, efficient delivery of tasks, enhanced ability to manage workload, and improved organisational skills); along with enhancing one's coping strategies as a result of increased awareness. Based on these findings, it can be said that stress is an inevitable aspect of the lives of healthcare professionals; the presence of job demands can cause high levels of stress, thereby impacting both psychological wellbeing and performance. However, the presence of job resources along with personal resources, it can help mitigate the negative effects of demands on one's stress levels. Therefore, it is crucial to inculcate these resources during the educational period in order to develop a psychologically healthy and resilient workforce

within the healthcare settings. Bearing in mind the findings of Study 3, it has been noted that stress is negatively associated with personal resources (EI, self-efficacy, and problem-focused coping strategies). Similarly, findings revealed that support from the university (in terms of support and feedback from teachers, along with peer support and university welfare services) can also help combat the negative effects of stress on the psychological wellbeing and performance in nursing students; thereby proving the JD-R theoretical framework.

In view of the findings across all three studies, adopting the mixed-method approach has proven to be extremely beneficial. Previously, quantitative methods of data collection and analysis had dominated health research; however, qualitative methods have now attracted a lot of research attention and recognition in the past two decades (Harding and Gantley, 1998). With the growing interest in qualitative approaches, the value of combining both quantitative and qualitative methods has also been widely recognised (Tariq and Woodman, 2013). As in the case for Study 1, while the quantitative results demonstrated the negative effects of stress on aspects related to work performance, followed by the importance of EI; the added qualitative perspective helped gain a deeper understanding towards the stressors experienced by nurses (both pre and during COVID-19); along with the impact on their psychological wellbeing. Also, it provided some insight into the significance of coping strategies; it helped improve understanding of the work culture of the NHS organisation from the nurses' point of view, including the support they receive for helping them deal with stress. These findings could not have been covered through just questionnaire data. Given the subjective nature of this study, the interview data helped explore a range of topics which provided a more comprehensive understanding of the subject matter; something which was not covered in prior literature - to the best of the author's knowledge. Similarly, for Study 2, adopting the mixed-method approach helped address gaps in prior literature regarding the effectiveness and acceptability of MBCT as a psychological wellbeing intervention. While the quantitative findings proved its effectiveness with regard to reduced stress and depression, along with increased mindfulness and quality of life (as consistent with prior research) in NHS employees; the qualitative findings gained deeper perspectives from participants regarding its effectiveness in terms of improved psychological wellbeing and work performance, indicating good levels of acceptability and feasibility of the intervention. It further elaborated on participants' views regarding the service delivery, along with considering certain recommendations offered by them for better future implementation. Finally, with regard to Study 3, both quantitative and qualitative findings generated unique results, thereby

contributing new information to the existing literature. The quantitative findings helped explore the relationship among stress, EI, coping strategies, and self-efficacy in nursing students - a pattern not explored previously by combining all four variables. In addition, findings emerging from the interview data helped enhance the understanding of students' perspective of the nursing curriculum, the nature of the stressors they experience, the impact of such stressors on their psychological wellbeing, coping mechanisms they adopt for dealing with stress, support they receive from the university, along with highlighting certain aspects of perceived self-efficacy. Further, the added qualitative findings derived from the focus group data, helped obtain a richer understanding of how students cope with such stressful scenarios; in terms of what coping styles (e.g., problem-focused, emotion-focused, avoidance) they adopt, and the reasons why they tend to endorse the given coping strategies for that particular situation. Therefore, adopting the mixed-method approach across all three studies helped address research questions more comprehensively, than just using either a quantitative or qualitative approach alone (Creswell and Plano Clark, 2007).

Findings of the current PhD project have been considered within the context of practical implications. First, it is necessary for the NHS organisation to consider and offer solutions for handling stress among healthcare professionals, considering its negative effects on their psychological wellbeing and work performance. While, at the personal level, coping strategies and EI have served as a crucial means for buffering the negative effects of stress; at the organisational level improved communication between the management and employees, greater job recognition for HCPs, along with the provision of additional resources (e.g. more funding, more beds, and better facilities) must also be considered. Second, the development and implementation of appropriate interventions can enable HCPs to deal better with stress, thereby enhancing their psychological wellbeing and work performance. Findings from both the current scoping review (Chapter 2) and Study 2 (Chapter 5), have revealed the benefits of MBCT as a psychological wellbeing intervention for NHS employees. Therefore, it is crucial to increase awareness regarding the significance of such interventions; identify barriers for participation, and understand factors associated with engagement to foster acceptability. Finally, in light of the high presence of stress, and the need for resources to minimise its effects on the psychological wellbeing and performance among HCPs; it is equally important to consider the sources of stress from their educational period. Given the significance of personal resources (in terms of EI, coping strategies, and self-efficacy), as discussed in Study 3; it is important for healthcare educators to inculcate training in EI and effective coping

mechanisms in order to develop a more resilient and psychologically healthy workforce for the future.

7.3 Strengths and limitations

With regard to the strengths of the study, the current thesis has offered valuable contributions:

- Adopting a mixed-method design across all three studies helped gain an in-depth understanding of various concepts involved with psychological wellbeing and performance among healthcare workers and students. By combining both quantitative and qualitative perspectives, the current thesis added depth and breadth to the findings of each study, thereby contributing to new findings in the existing literature. Also, the added qualitative perspective enabled a detailed exploration of the NHS work environment; the university curriculum; significance of personal resources (EI, self-efficacy, and coping strategies); along with participants' views regarding the wellbeing interventions offered to them, including the effectiveness and acceptability of the MBCT programme.
- Although this study commenced before the pandemic of COVID-19, its onset increased the relevance of recommendations offered by nurses, for ensuring enhanced psychological wellbeing of NHS healthcare professionals. Also, since the stress-related issues pertaining to COVID-19 were not measured quantitatively, the qualitative findings helped generate rich data on this subject matter. Further, given the presence of high stress among HCPs and students, and bearing in mind the unfortunate circumstances of the pandemic, this PhD highlighted an urgent need for the development and implementation of effective psychological wellbeing interventions, both by the NHS organisation and by educational institutions.
- The added findings derived from focus groups, shed light on the different coping strategies adopted by students when placed under varied academic and placement situations; thereby providing a more comprehensive understanding of how students would deal with such complex circumstances. It also paved way for considering and

training students with EI and effective coping strategies for the development of a more resilient healthcare workforce.

However, the current thesis has also acknowledged some limitations pertaining to each study:

- The research population of all three studies was only limited to the Nottingham University Hospitals, Nottinghamshire Healthcare Foundation Trust, and the University of Nottingham. Also, few dropouts were noted in the midst of the eight-week MBCT programme due to which the sample size had reduced. Therefore, given the limited number of participants, findings of each study could not be generalised to a larger sample of healthcare professionals and students across other regions of the country, or worldwide.
- The scope of the studies did not differentiate the presence of stress and its effects on the psychological wellbeing and performance among nurses employed in varied sectors/departments of the NHS organisation. Similarly, the study did not differentiate among stress, coping strategies, EI, and self-efficacy among students among different academic years (or levels) of study.
- Study 2 lacked a control group, thereby making it challenging to determine whether the observed outcomes could be truly attributed to the intervention. Also, study 1 and study 3 adopted a cross-sectional design which may limit the generalizability of findings.
- The current thesis did not consider demographic characteristics as variables in all three studies. For instance, differences in age, gender, marital status, years of experience, and ethnicity were not taken into account when conducting the analyses. The reason for not conducting such an analysis was mainly due to the nature of the research questions of the present project, which were not centred around sociodemographic variables. The design of the studies was hence not tailored to enable an analysis that would factor in such characteristics even though their consideration would have potentially provided a more comprehensive context to the findings.

- The focus of the current thesis was based on the psychological wellbeing of healthcare professionals and students, while overlooking the negative consequences of stress on aspects related to physical wellbeing.

7.4 Future directions

- Findings of the current thesis paves way for future research to adopt more mixed-method designs; for exploring the presence of stress, psychological wellbeing, coping, and performance by expanding the scope to general healthcare employees employed in different sectors/departments within the NHS organisation. By conducting more comparison studies between different sectors within the NHS, or even among different cohorts of nurses, future studies can help understand which area/department requires more attention with regard to stress-related and psychological wellbeing issues.
- Future studies need to focus on the development and implementation of psychological wellbeing interventions, offered to both HCPs and students. Given the significance of the MBCT programme in terms of improved psychological wellbeing and work performance (as depicted in the scoping review and Chapter 5), more randomised control trials are required in order to reduce bias and measure its effectiveness as a psychological wellbeing intervention. Also, future research warrants more comparison studies between MBCT and other psychological wellbeing interventions, offered to both HCPs and healthcare students.. Further, since participating in wellbeing interventions online can help reduce barriers associated with accessibility; more studies need to focus on the feasibility and acceptability of such interventions offered via digital modalities.
- There could be a possibility that healthcare students in a higher academic year are more emotionally intelligent and adopt more effective coping mechanisms, as compared to students at the beginning of their educational period; or vice versa. Therefore, there is a further need to adopt more mixed-method and comparison study designs; for exploring the presence of stress, EI, coping strategies, and self-efficacy

among healthcare students in different year (or levels) of academic studies. Also, including more focus group sessions can help future studies to further explore aspects related to coping and EI in more detail. This exercise may prepare students for the future, by placing them in varied and complex clinical situations.

7.5 Retrospective reflective statement

Reflexivity, as previously discussed in Chapter 3 (Methodology), is one of the core constructs of knowledge in qualitative research (Narayanasamy, 2015); it involves critical reflection on oneself as a researcher (Bradbury-Jones, 2007). The current PhD Project allowed the researcher to reflect retrospectively with regard to the study design, and methods of data collection and analysis across all three studies. During this process, the researcher learnt that while the quantitative part of the study was important, the variables used were limited in their ability to provide a full perspective on the subject matter. Therefore, adding the qualitative aspect (interviews and focus groups) helped the researcher gain a deeper understanding of the problem at hand. The researcher did not have prior substantial experience in conducting interviews or focus groups, particularly among participants from the healthcare field. However, given the warm and supportive nature of the participants (HCPs and students), the researcher felt at ease when conducting the interviews and focus groups. The language constraints, along with cultural differences between the researcher and participants, did not seem to be an issue as participants were very friendly and helpful when explaining their perspectives. One of the biggest apprehensions of the researcher was associated with recruitment, given the current circumstances of COVID-19 and national lockdown. However, participants acknowledged the significance of the studies; they were eager to participate despite the challenging work conditions, particularly during the peak pandemic. Also, they displayed utmost empathy and corporation with regard to explaining any medical terms used, that the researcher was not aware of. Further, under the guidance of her academic supervisor, along with receiving constructive feedback throughout the process, the researcher felt confident in carrying out the three studies.

7.6 Conclusions

Based on the findings of the current thesis, it can be concluded that there is presence of stress among healthcare professionals within the UK NHS; and among healthcare students. This is

especially true for nurses, providing frontline care to patients; and nursing students, particularly during high-pressure conditions associated with COVID-19. By adopting the JD-R theoretical framework, findings across all three studies have confirmed that the presence of job demands (stressors) does indeed have negative consequences on the psychological wellbeing and aspects related to performance among HCPs and students. Conversely, results have also reported that the presence of personal resources (in terms of EI, coping strategies, and self-efficacy) may help buffer the negative effects of stress on one's psychological wellbeing and performance. Seeking social support was highlighted as a crucial coping strategy by majority of healthcare professionals and students, as mentioned previously. In addition, having appropriate job resources in place (in terms of support from higher management, line managers, and professors in the university) can also help HCPs and students for dealing with stressful circumstances, thereby enhancing their psychological wellbeing and performance. Further, the implementation of effective wellbeing interventions (e.g. MBCT, as in the case of the current thesis), has played a pivotal role and offered promising results in terms of improved psychological wellbeing and work performance. Therefore, findings across all three studies, from a both quantitative and qualitative perspective, have been significant and offered relevant recommendations. These suggestions include, but are not limited to, increasing awareness regarding the availability of varied psychological wellbeing interventions for both HCPs and students, along with understanding other barriers associated with accessibility and engagement; increased organisational support, better communication between the management and employees, and increased job recognition from higher management; and the need for further training in EI, coping strategies, and self-efficacy, for helping students feel better equipped to deal with varied academic and placement stressors. Promoting the mental health and psychological wellbeing of existing healthcare professionals can have knock-on beneficial effects on the quality of care provision.

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APPENDICES

Study 1



**University of
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**Faculty of Medicine & Health Sciences
Research Ethics Committee**

Faculty Hub
Room E41, E Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH
Email: FMHS-ResearchEthics@nottingham.ac.uk

19 June 2020

Dr Elena Nixon
Assistant Professor in Applied Neuropsychology
Division of Psychiatry and Applied Psychology,
Institute of Mental Health (C21)
School of Medicine
Jubilee Campus
University of Nottingham
NG7 2TU

Dear Dr Nixon

Ethics Reference No: FMHS 462-2001 – please always quote Sponsor ref: RI 19088 IRAS ID: 271333 HRA REC ref 20/HRA/0209	
Study Title: Exploring the link between stress and work performance among Nurses working in the National Health Service (NHS): A mixed method study.	
Proposed Start Date: 23/04/2018	Proposed End Date: 21/09/2018

The Committee considered this application at its meeting on 22nd May 2019 and the following documents were received:

Document	Version	Date
IRAS Application Form	dated	05 March 2020
Research protocol/project proposal	Version 3.0	22 April 2020
Letter of invitation to participant	Version 1.0	18 December 2019
Participant Information Sheet	Version 3.0	22 April 2020
Participant consent form	Version 2.0	01 March 2020
Interview Schedule	Version 1.0	18 December 2019
CV for Chief Investigator/Supervisor	Version 1.0	18 December 2019
CV for Lead investigator/student	Version 1.0	18 December 2019
Letter of HRA Approval [20/HRA/0209]	Dated	04 May 2020
Letter from Sponsor R&I [19088]	Version 1.0	18 December 2019
Evidence of Sponsor Insurance or indemnity	Version 1.0	18 December 2019
Validated questionnaires	Version 1.0	18 December 2019
Summary or diagram (flowchart) of protocol	Version 1.0	18 December 2019

These have been reviewed and are satisfactory and the study is approved.

Approval is given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Dr Bethan E Phillips, Associate Professor
Clinical, Metabolic & Molecular Physiology, Medical Sciences & Graduate Entry Medicine
Acting Chair, Faculty of Medicine & Health Sciences Research Ethics Committee



University of
Nottingham
UK CHINA MALAYSIA

Research and Innovation

University of Nottingham

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Nottingham

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Our reference: R&I: 19088

IRAS Project ID: 271333

0115 8467906

sponsor@nottingham.ac.uk

**Health Research Authority
University of Nottingham REC**

Dr Elena Nixon

Assistant Professor

Division of Psychiatry and Applied Psychology

Institute of Mental Health (C21)

School of Medicine

Innovation Park

Triumph Road

Nottingham, NG7 2TU

19th December 2019

Dear Sir or Madam,

Sponsorship Statement

Re: Exploring the link between stress and work performance among nurses working in the National Health Service (NHS): A mixed method study

I can confirm that this research proposal has been discussed with the Chief Investigator and agreement to sponsor the research is in place.

An appropriate process of scientific critique has demonstrated that this research proposal is worthwhile and of high scientific quality.*

Any necessary indemnity or insurance arrangements will be in place before this research starts. Arrangements will be in place before the study starts for the research team to access resources and support to deliver the research as proposed.

Wording has been included in the participant information sheets to address the requirements of GDPR for transparency information and has been drafted by the sponsor to ensure consistency and compliance with the University's privacy notice, HRA guidance and the expectations of other organisations, therefore the HRA template wording has not been used verbatim.

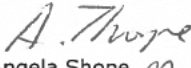
Arrangements to allocate responsibilities for the management, monitoring and reporting of the research will be in place before the research starts.

The duties of sponsors set out in the UK Policy Framework for Health and Social Care Research will be undertaken in relation to this research.**

* Not applicable to student research (except doctoral research).

** Not applicable to research outside the scope of the Research Governance Framework.

Yours faithfully


Angela Shone *ap*

Head of Research Governance
University of Nottingham



world-changing research
from The University of Nottingham



Ymchwil Iechyd
a Gofal Cymru
Health and Care
Research Wales



Dr Elena Nixon
Institute of Mental Health
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Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

04 May 2020

Dear Dr Nixon

**HRA and Health and Care
Research Wales (HCRW)
Approval Letter**

Study title: EXPLORING THE LINK BETWEEN STRESS AND WORK
PERFORMANCE AMONG NURSES WORKING IN THE
NATIONAL HEALTH SERVICE (NHS): A MIXED METHOD
STUDY

IRAS project ID: 271333
Protocol number: 19088
REC reference: 20/HRA/0209
Sponsor University of Nottingham

I am pleased to confirm that [HRA and Health and Care Research Wales \(HCRW\) Approval](#) has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, [in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.](#)

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?

HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report (including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.



The University of
Nottingham

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“I’m a Nurse, what’s your superpower?”



Have you experienced stress at work? If so then how does this effect your work performance? If you are a nurse working in the NUH (QMC, City Hospital or Ropewalk House) or in the Nottinghamshire Healthcare Trust, please take a few minutes to complete an online survey to tell us about how stress has impacted your wellbeing and satisfaction at work. You may be asked at a later point to take part in a brief interview should you wish to do so. To participate in this study, please click on this link which will direct you to the online survey:

<https://nottingham.onlinesurveys.ac.uk/stressandworkperformance>

You will find in the link a Participant Information Sheet explaining the purpose of this study in more detail. After reading the information sheet, if you have any queries about the study please email the researcher at the email address below. If you don't have any questions you can just proceed with the study by signing the consent form and then completing the survey

Nazm Berry
nazm.berry@nottingham.ac.uk

*One participant will receive a
£50 amazon gift voucher*



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Faculty of Medicine & Health Sciences
School of Medicine
Division of Psychiatry & Applied Psychology
Institute of Mental Health,
Jubilee Campus, Triumph Road,
Nottingham, NG7 2TU

INTERVIEW QUESTIONS

(Final Version 2.0: 01.03.2020)

IRAS Project ID: 271333

Title of Study: Exploring the Link between Stress and Work Performance among Nurses Working in the National Health Service (NHS): A Mixed Method Study

1. What is your experience of being a nurse? (prompts: do you enjoy what you do?)
2. Do you experience stress at work? If so, what are the reasons to why you feel stressed?
3. What do you think is the impact that stress is having on your overall wellbeing? (
4. Do you feel that stress has an impact on your performance level at work? (Prompts: Have you ever been faced with a situation where you felt your performance level is not as good as it could have been?
5. How do you cope with stress at work? (Prompts: avoiding, relaxing, meditating)
6. When faced with a difficult situation at work, how do you deal with it? (Prompts: give examples, e.g. if the patient is not satisfied with the services, or giving a bad news to the patients and their families)
7. When faced with a conflicting situation with a co-worker, how do you resolve the conflict?
8. When faced with a difficult situation with a senior or supervisor, how do you deal with the situation? (
9. Is the organization you work for supportive when you are going through a difficult situation? (Prompts: Do you feel satisfied with the organization you work for? If not, what would you change about it?)
10. How does your organization help you manage your stress? Are the stress management interventions available to you effective in helping you cope with stress? (Prompts: Have you engaged in Counselling, Cognitive-Behaviour Therapy, Mindfulness Therapy, etc.; Have they helped in improving your wellbeing as well as your performance at work?)
11. How do you feel about the future, as a nurse working in this organisation? (Prompts: Do you feel optimistic or pessimistic about things?)

Figure 22: Histogram and Q-Q Plot for Nursing Stress Scale (NSS)

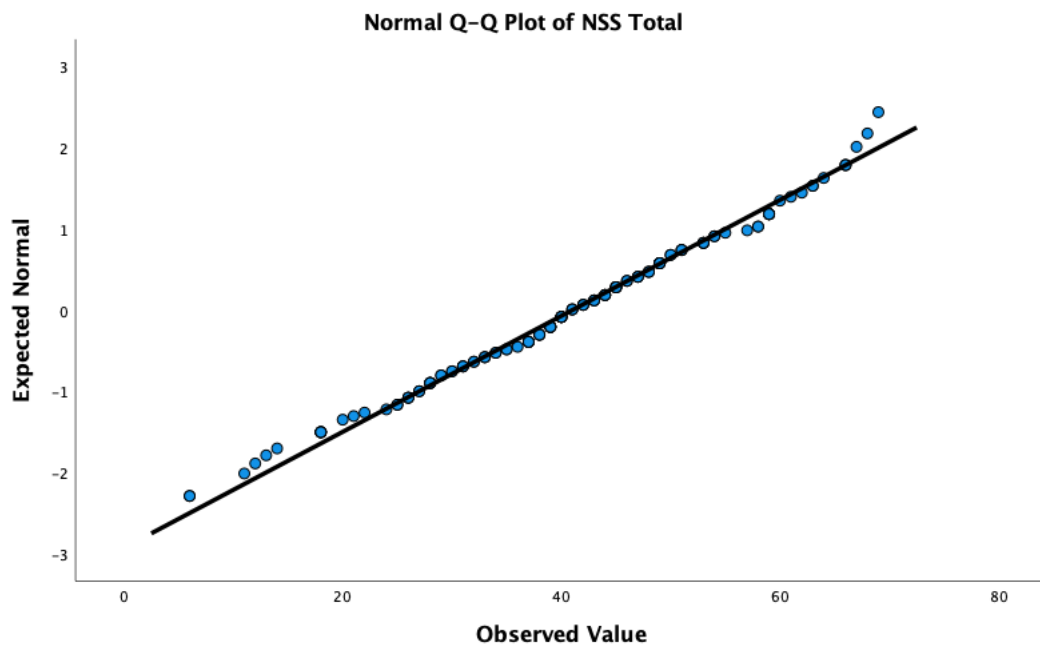
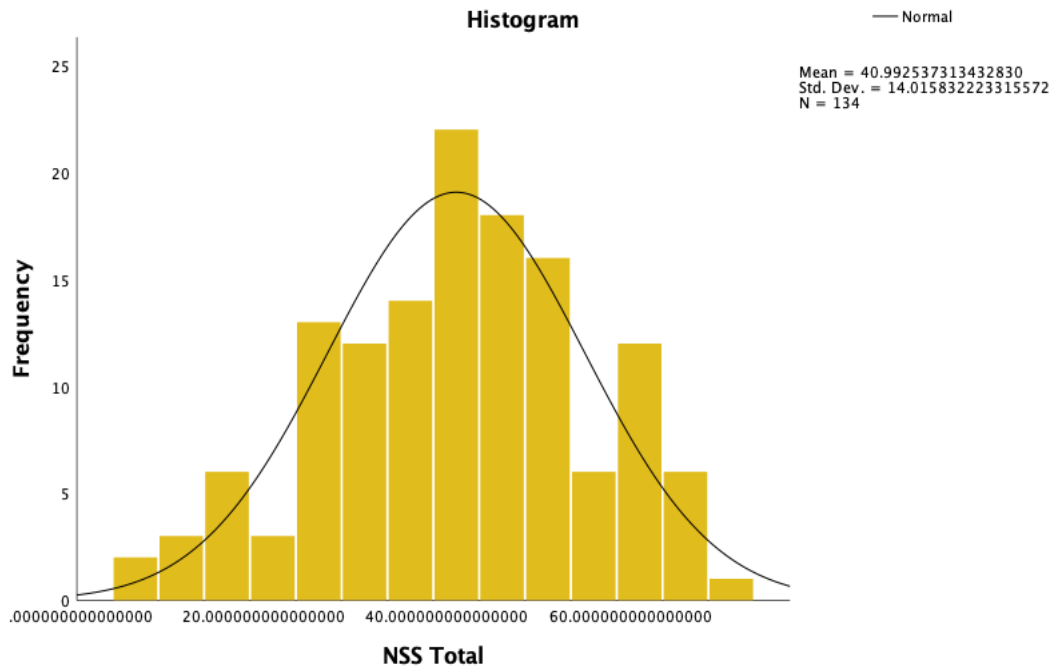


Figure 23: Histogram and Q-Q Plot for Nurse Work Functioning Questionnaire (NWFQ)

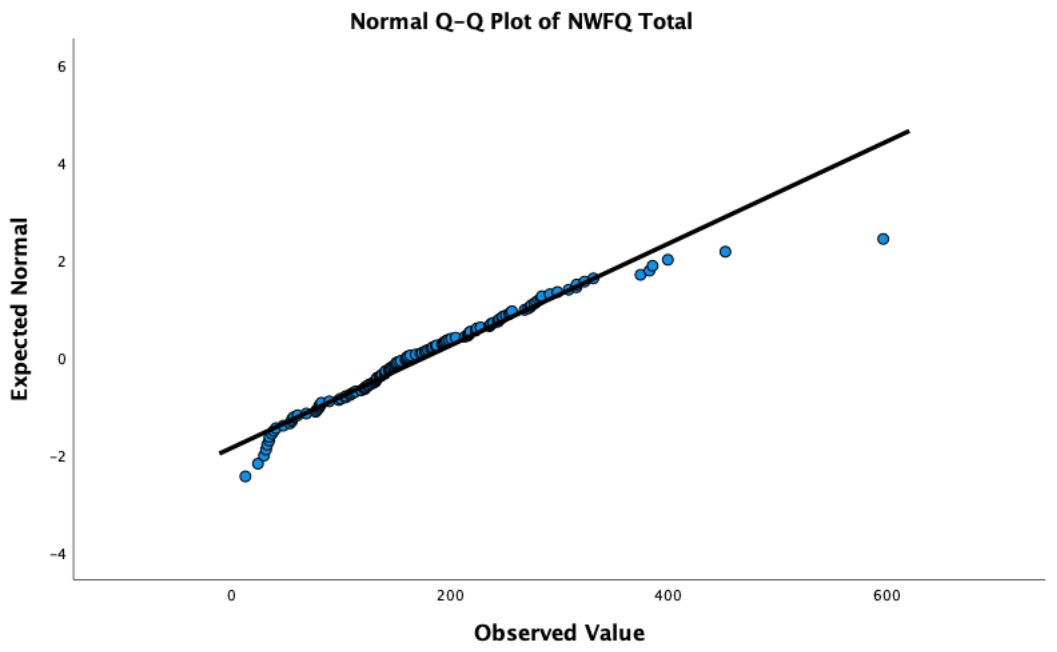
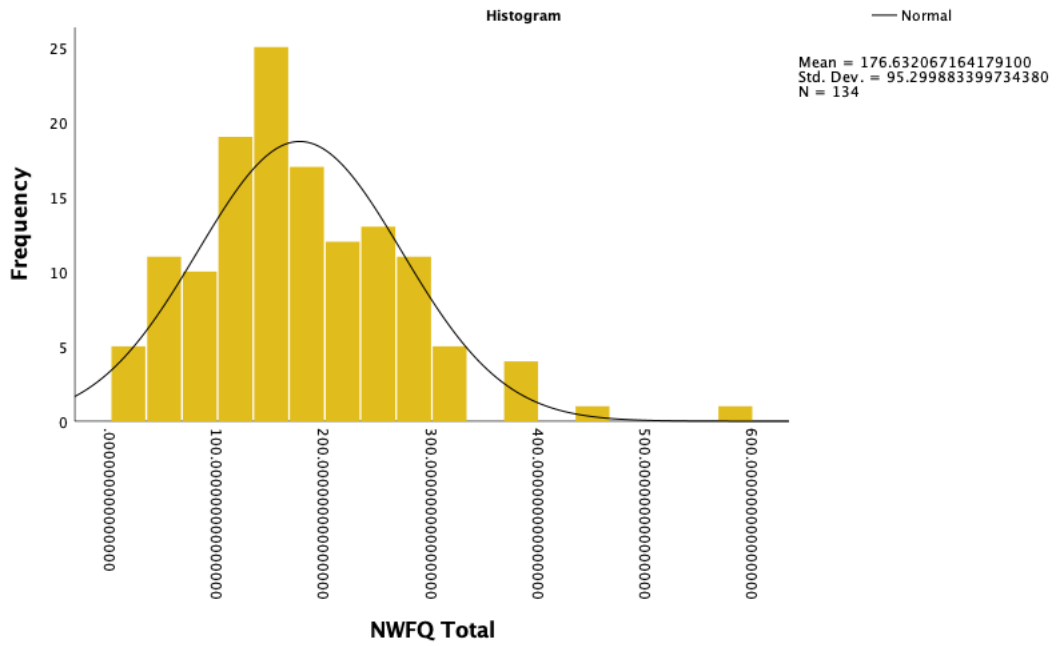


Figure 24: Histogram and Q-Q Plot for Outcome 1 (Work-Time Missed due to Health)

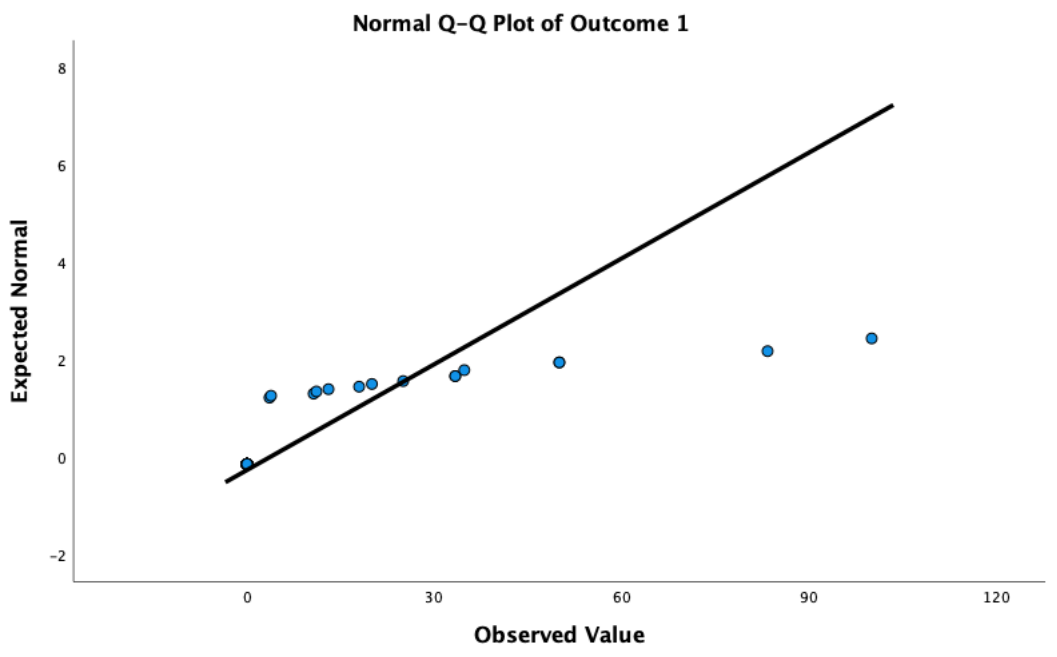
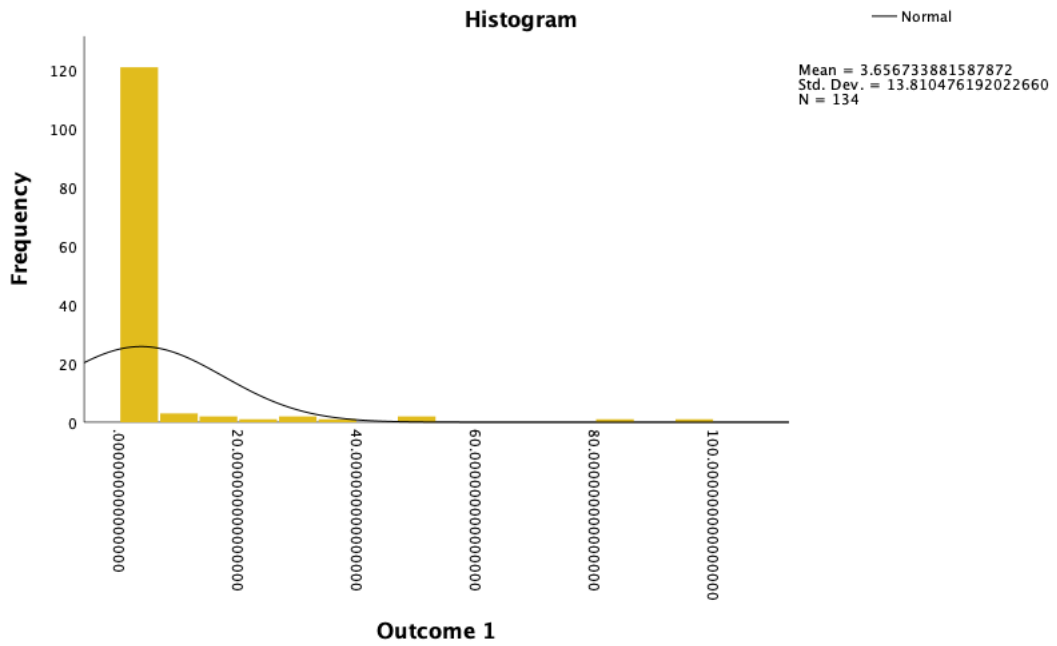


Figure 25: Histogram and Q-Q Plot for Outcome 2 (Impairment while Working due to Health)

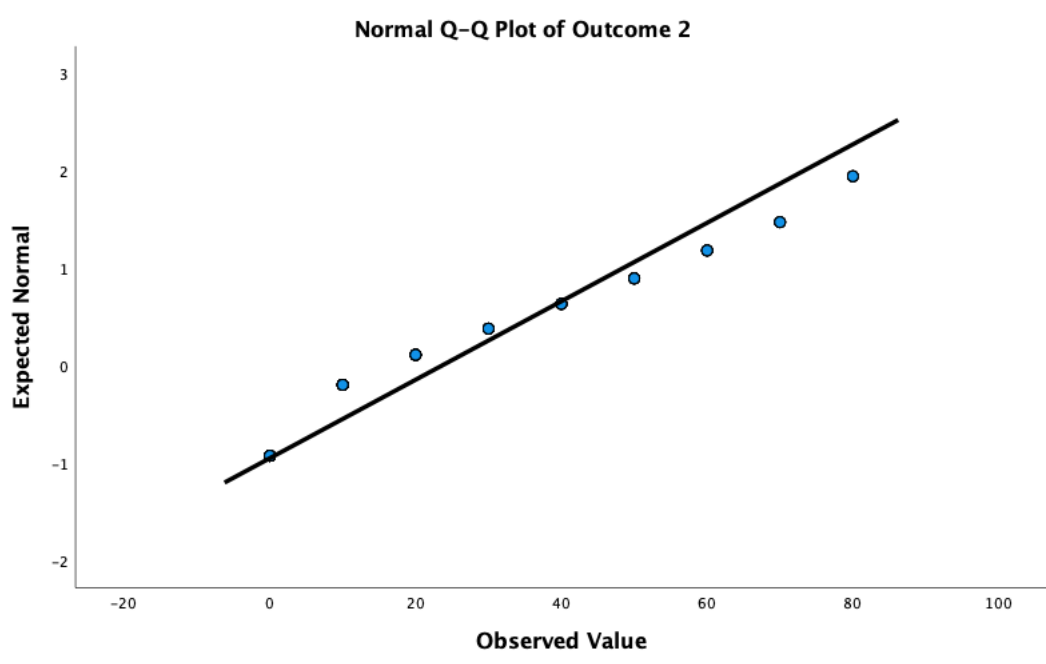
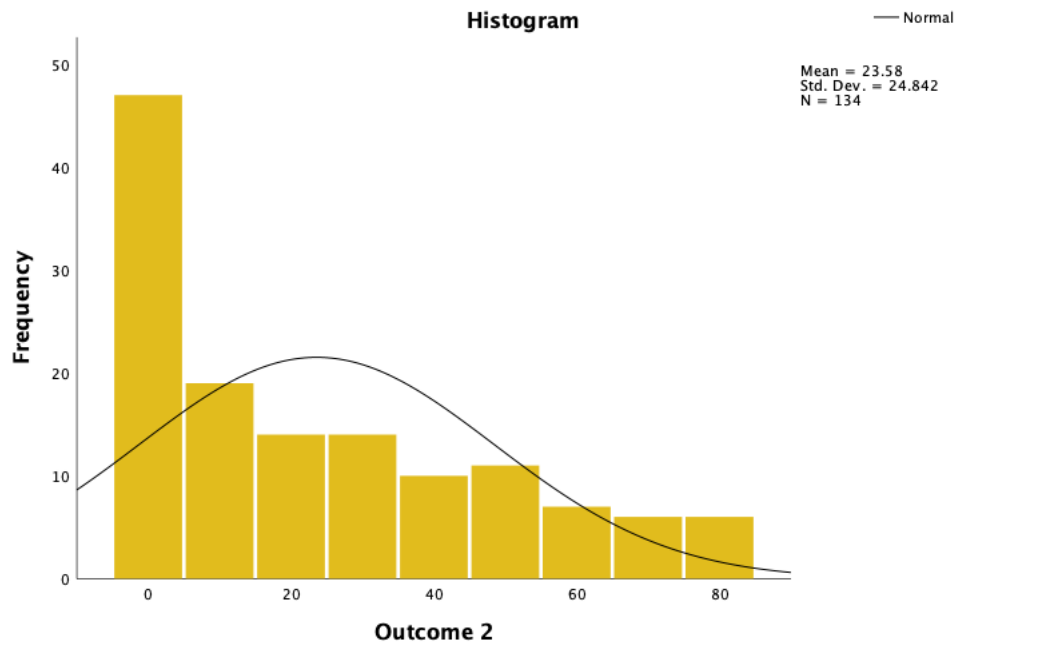


Figure 26: Histogram and Q-Q Plot for Outcome 3 (Overall Work Impairment due to Health)

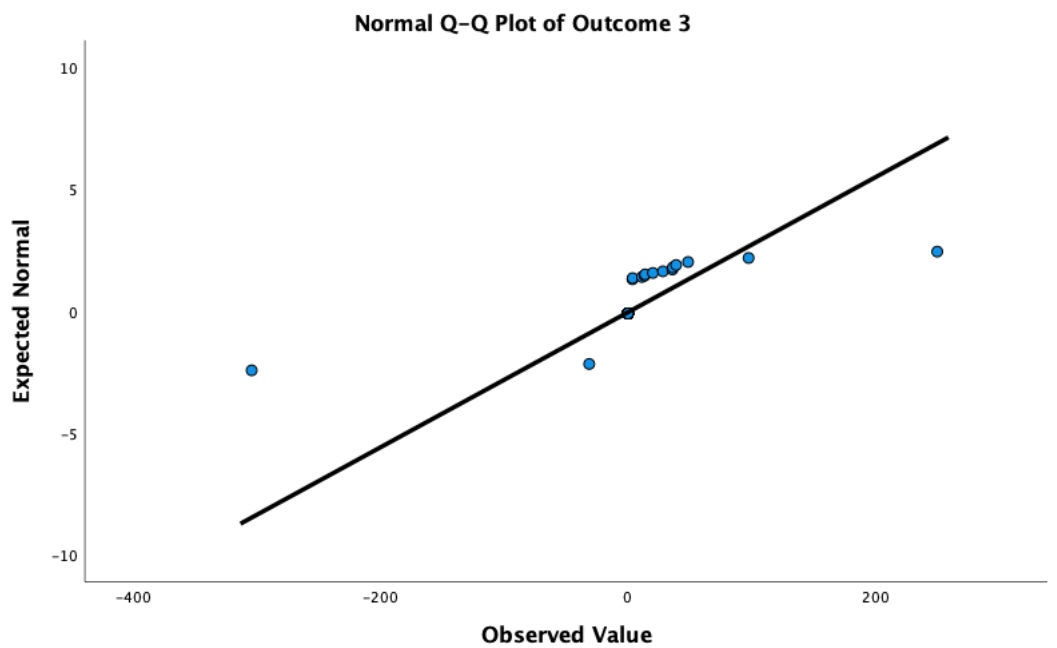
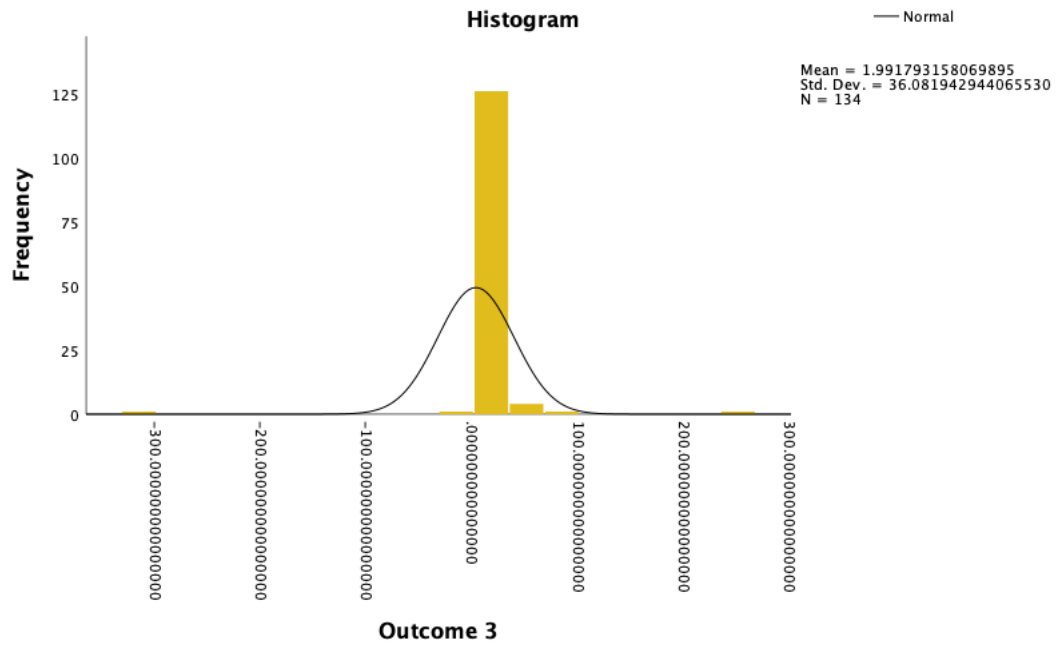


Figure 27: Histogram and Q-Q Plot for Outcome 4 (Activity Impairment due to Health)

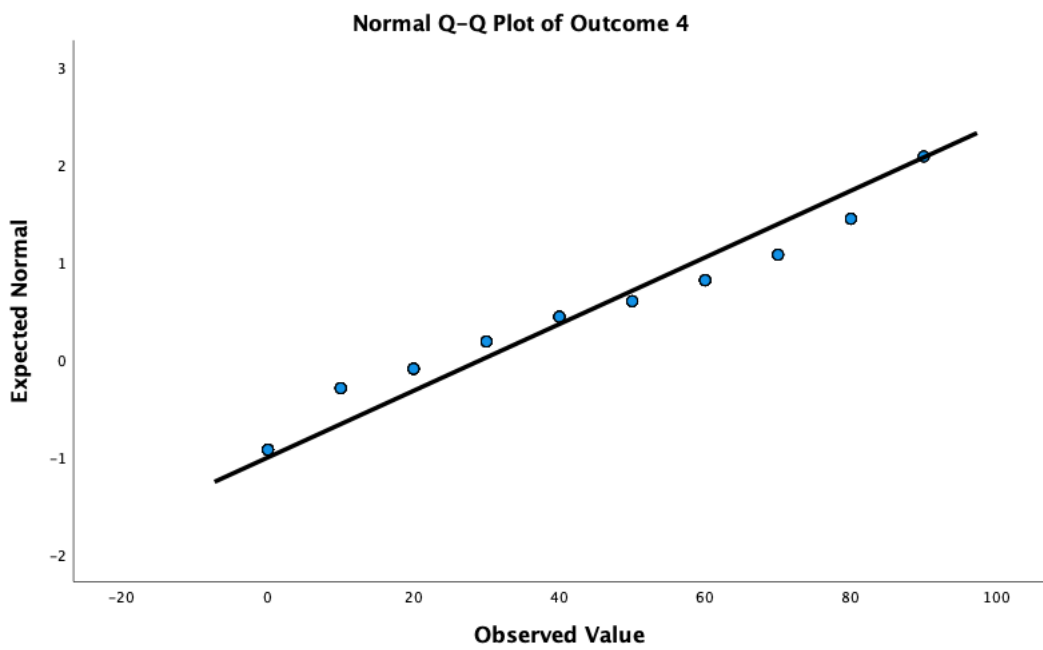
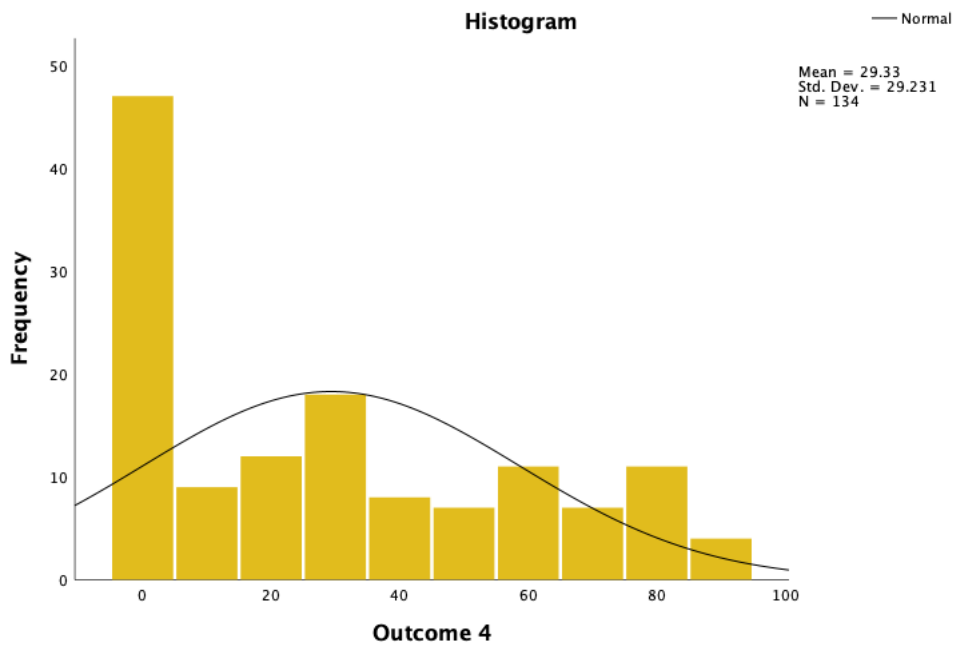


Figure 28: Histogram and Q-Q Plot for Job Satisfaction Survey (JSS)

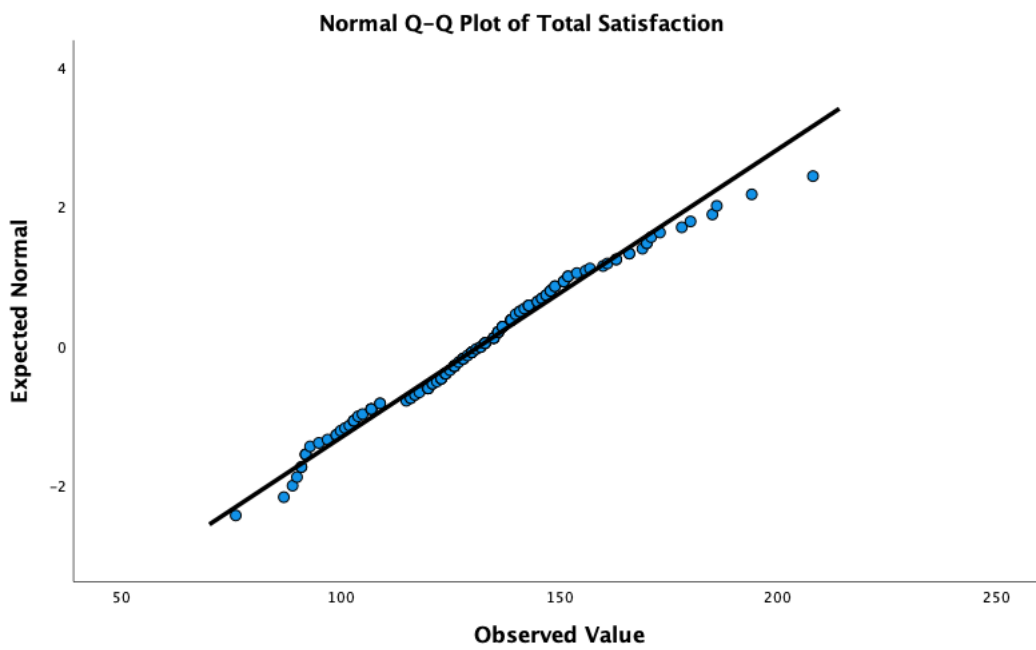
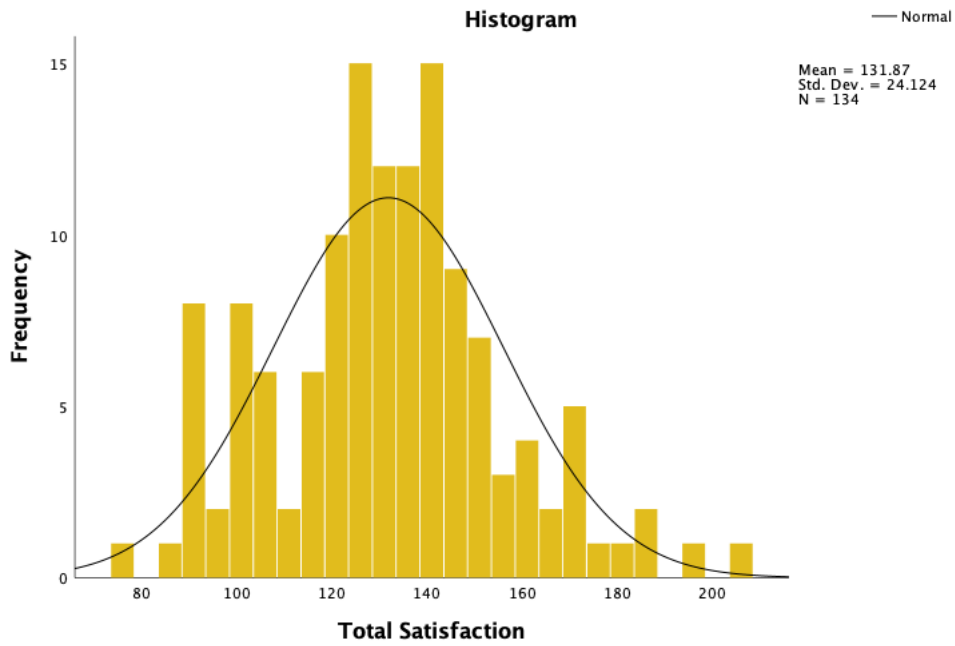


Figure 29: Histogram and Q-Q Plot for Schutte Self-Report Emotional Intelligence Test (SSEIT)

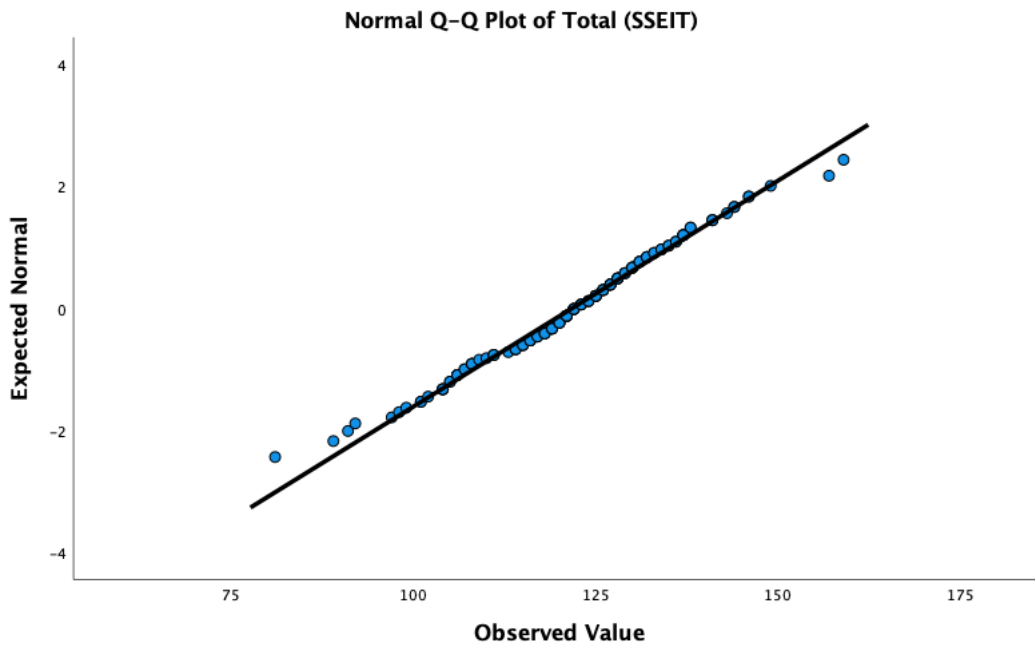
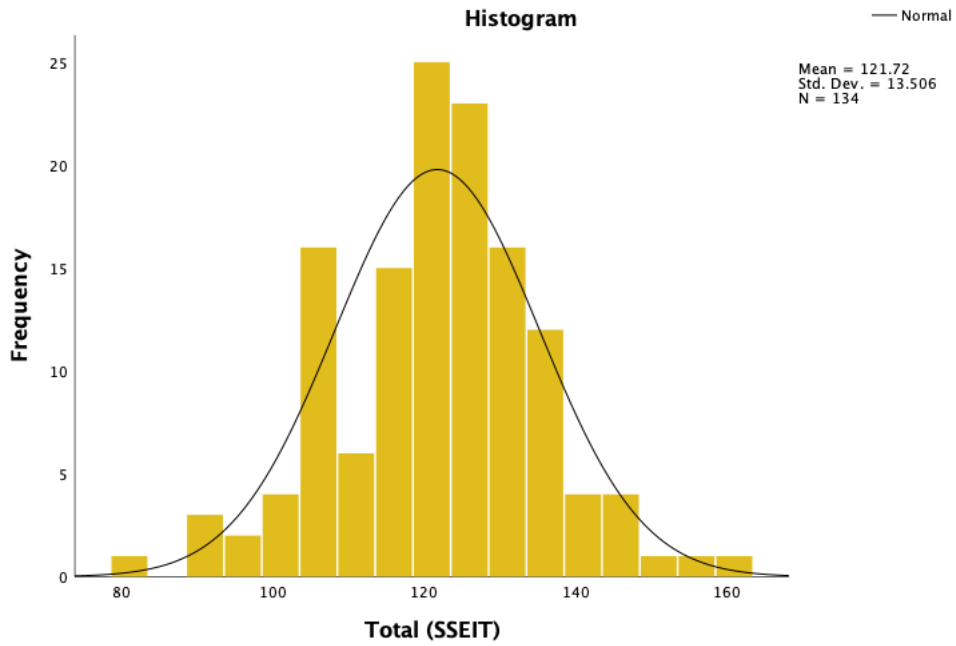


Figure 30: Bivariate Scatterplot for Stress and Impaired Work Performance in Nurses

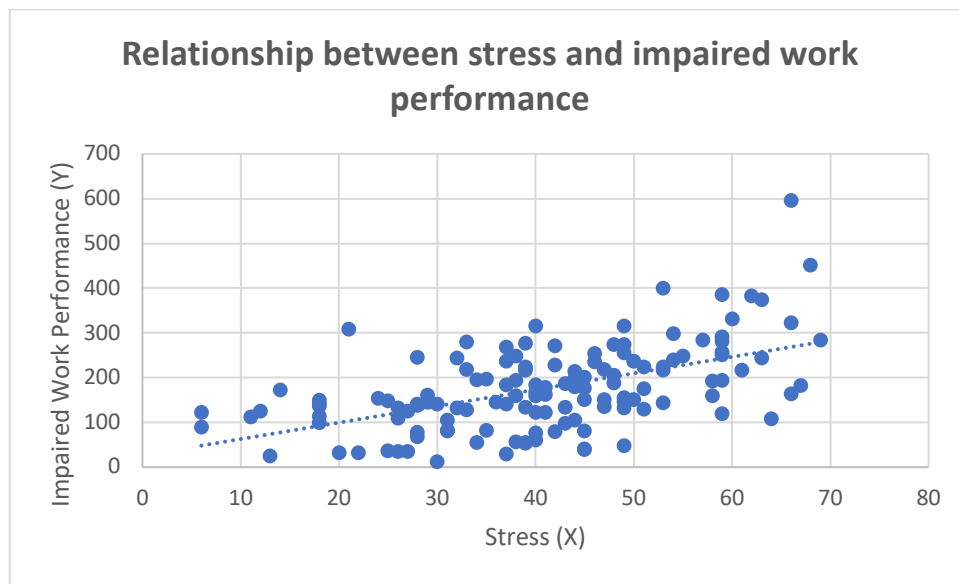


Figure 31: Bivariate Scatterplot for Stress and Work Satisfaction in Nurses



Codebook (Study 1)

Theme 9: Work-related pressures had an adverse impact on mood and stress levels				
<i>Sub-Theme 9.1: Mood on a daily basis was adversely affected by work stressors</i>				
Participant	16	2	24	8
Quote	<p>“Like if I’ve had a particularly stressful shift, then I come home and just the constant thoughts, the thoughts are just going on and on and on in your head. And it’s really difficult sometimes to turn those off”</p>	<p>“Um, and I think sometimes it impacts on me before shift as well. I noticed that the day before I’m going in, I’m just more stressed about things I’m more. Grumpy about things and just generally have a lower mood, I think, because I’m preparing to go in and you never know where’s on your mind. You have to get into work soon and yeah, it does</p>	<p>“I think it makes us all really irritable and me in particular”</p>	<p>“It’s been ongoing and it’s been like harder to get out of a row. So like I had a patient who passed away and like normally I’d have like a little cry cause I’m an emotional person. Anyway. I always have been, so I have a little cry and that was it. But like, I’d be thinking about it for days and days afterwards”</p>

		happen. I think that's everyone”		
Code	Difficult to switch off from work	Low mood	Feeling irritable	Emotional breakdown
<i>Sub-Theme 9.2: Experiencing lack of motivation and difficulty going back to work owing to stress</i>				
Participant	31	17	15	25
Quote	<p>“Uh, so even family. You have got family how to take care of them as well. So it's like, I don't know what we are passing through, but I'm a strong willed person. I know personally I'm very I have a very strong will but yeah it feels like I want to quit the provision like it now these days it's quite evident that I always thinking of I should leave this position. I should find something</p>	<p>“I tend to switch off. I don't tend to interact with people. You know, there's a, there's a WhatsApp group on the ward. Um, I kind of let that go sometimes”</p>	<p>“Like even feeling like I've got to go to work on Thursday. Like that actually fills me with dread. And I've never felt that before”</p>	<p>“And sometimes there's a lot because I'm so stressed. There's a lack of interest in like doing my job”</p>

	else I should find something else”			
Code	Sometimes feel like quitting	Shutting off from everyone	Difficulty going back to work when stressed	Lack of motivation
<i>Sub-Theme 9.3: Work stress reaching a clinical threshold of depression and anxiety</i>				
Participant	23	8	15	8
Quote	“T'd had a panic attack in the middle of the shift on two occasions in six months. Cause it was, it was just so overwhelming”	“I've been getting more and more stressed to a point like where I have gone to my GP and I am now on antidepressants because of the stress at work”	“Like I've never felt anxious in my life and I do now like, definitely”	“And then come home and be like in absolute bits. And yeah, it was about lack of staff and too much. Stuff and like lock downs again and everything else. It just all kind of builds up and it's like even being in the lockdown, it takes a toll on you”
Code	Panic attacks in the middle of shifts	Feeling depressed	Feeling anxious	Poor overall mental health

Study 2



**University of
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Faculty of Medicine & Health Sciences Research Ethics Committee

Faculty Hub
Room E41, E Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH
Email: FMHS-ResearchEthics@nottingham.ac.uk

26 June 2020

Dr Elena Nixon
Assistant Professor of Applied Neuropsychology
Division of Psychiatry and Applied Psychology
Institute of Mental Health (C21)
University of Nottingham Innovation Park
Triumph Road
Nottingham
NG7 2TU

Dear Dr Nixon

Ethics Reference No: K11082015 – please always quote	
Study Title: Mindfulness for NHS Staff: Evaluating the effectiveness of a Mindfulness-Based Cognitive Therapy (MBCT) programme for Nottinghamshire Healthcare staff.	
Chief Investigator/Supervisor: Dr Elena Nixon, Assistant Professor of Applied Neuropsychology, Psychiatry and Applied Psychology, Institute of Mental Health.	
Lead Investigators/student: Henry Jones, BMedSci 3 Year student, Philippa Shaw, Hannah Herc, Eloise Tierney, Rachel Nolan, Catherine Burke, Merly McPhilbin, Alice Earnshaw, MSc Mental Health Research Division, Nazm Berry, PhD Student Division of Psychiatry and Applied Psychology	
Other Key investigators: Tim Sweeney, Clinical Lead of MBCT, Nottinghamshire Healthcare, Prof Richard Morriss, Professor of Applied Neuropsychology, Division of Psychiatry and Applied Psychology, Institute of Mental Health, Dr Neil Nixon, Consultant Psychiatrist and Honorary Associate Professor in General Adult Psychiatry, Nottinghamshire Healthcare Trust	
Proposed Start Date: 21.09.2015	Proposed End Date: 30.09.2020

Thank you for notifying the Committee of amendment no 5: 12.06.2020 as detailed and the following documents were received:

- FMHS REC Notice of Amendment form dated 12.06.2020
- MBCT-Staff Semi-Structured Interview Guide V3.0 Date 12.06.2020
- Work Productivity and Activity Impairment Questionnaire: General Health V2.0 (WPAI:GH)
- MBCT-Staff Protocol V5.0: 12.06.2020
- MBCT-Staff Participant Information Sheet V5.0: 12.06.2020

These have been reviewed and are satisfactory and the study amendment no 5: 12.06.2020 is approved.

Approval is given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Dr Bethan E Phillips, Associate Professor

Clinical, Metabolic & Molecular Physiology, Medical Sciences & Graduate Entry Medicine
Acting Chair, Faculty of Medicine & Health Sciences Research Ethics Committee



**University of
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**Faculty of Medicine & Health Sciences
Research Ethics Committee**

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09 December 2021

Dr Elena Nixon

Assistant Professor of Applied Neuropsychology
Division of Psychiatry and Applied Psychology
Institute of Mental Health (C21)
University of Nottingham Innovation Park
Triumph Road
Nottingham
NG7 2TU

Dear Dr Nixon

Ethics Reference No: K11082015 – please always quote	
Study Title: Mindfulness for NHS Staff: Evaluating the effectiveness of a Mindfulness-Based Cognitive Therapy (MBCT) programme for Nottinghamshire Healthcare staff.	
Chief Investigator/Supervisor: Dr Elena Nixon, Assistant Professor of Applied Neuropsychology, Psychiatry and Applied Psychology, Institute of Mental Health.	
Lead Investigators/student: Nazm Berry, PhD Student Division of Psychiatry and Applied Psychology, School of Medicine	
Other Key investigators: Tim Sweeney, Clinical Lead of MBCT, Nottinghamshire Healthcare, Prof Richard Morriss, Professor of Applied Neuropsychology, Division of Psychiatry and Applied Psychology, Institute of Mental Health, Dr Neil Nixon, Consultant Psychiatrist and Honorary Associate Professor in General Adult Psychiatry, Nottinghamshire Healthcare Trust	
Proposed Start Date: 21.09.2015	Proposed End Date: 30.09.2022

Thank you for notifying the Committee of amendment no 6: 14.10.2021 in summary as follows:

- Update of student investigators listed
- Time extension with a new end date of 30.09.2022

and the following documents were received:

- FMHS REC Notice of Amendment form and supporting documents dated 14.10.2021

These have been reviewed and are satisfactory and the study amendment no 6: 14.10.2021 is Noted to File.

Yours sincerely

Dr Bethan E Phillips, Associate Professor

Clinical, Metabolic & Molecular Physiology, Medical Sciences & Graduate Entry Medicine
Acting Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Would you like to take part?



We are looking for volunteers to take part in a study that aims to evaluate the acceptability and effectiveness of the MBCT programme you are going to complete.

The study involves completing a few short self-report questionnaires prior to the first session and at the end of the programme as well as talking about your views and experience of mindfulness shortly after the last session (45-50 minutes duration at both time points).

If you would like to find out more about this study please contact us at:
Elena.Nixon@nottingham.ac.uk

THANK YOU

Semi-Structured Interview Guide

POST-MBCT

1. What did you like most about the MBCT programme and why?
 2. What did you like least about the MBCT programme and why?
 3. What aspects of the MBCT training have you found most useful and why?
 4. Which of the taught 'homework' tasks did you use most during the MBCT programme?
 5. What did you think of the group delivery of MBCT?
 6. Have you noticed any changes in yourself (e.g. mood and stress levels) having completed the MBCT programme?
 7. Have you noticed any changes in your work performance?
 8. What aspects of the MBCT would you like to see changed and why?
 9. Do you have any specific suggestions for improving the MBCT delivery?
 10. Would you recommend the MBCT programme to a colleague?
-

Figure 32: Histogram and Q-Q Plots for Pre and Post PHQ-9

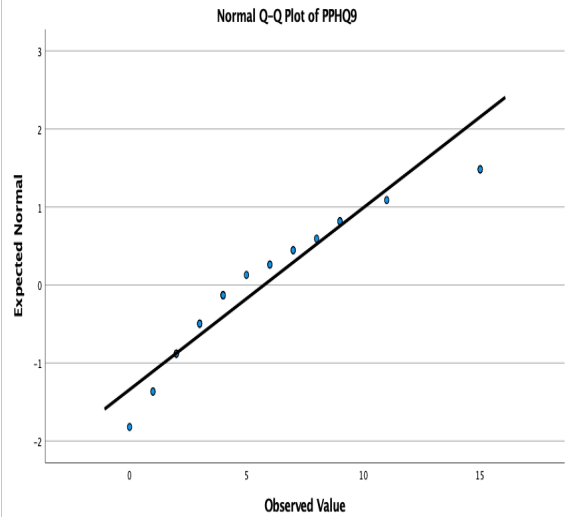
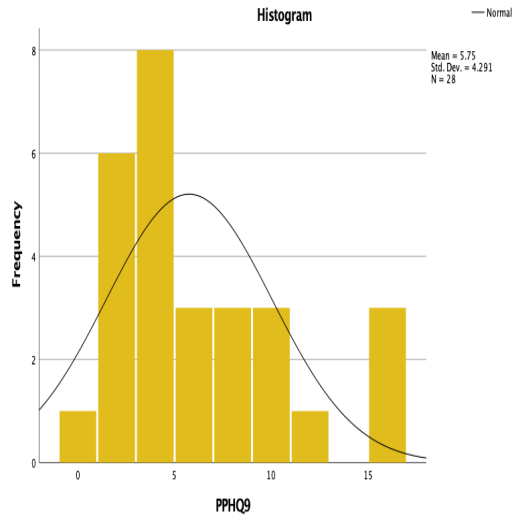
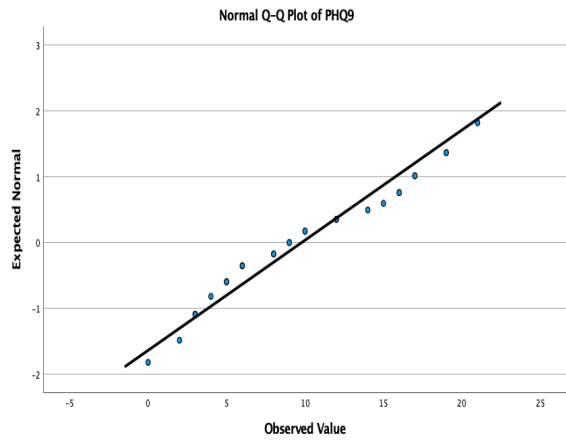
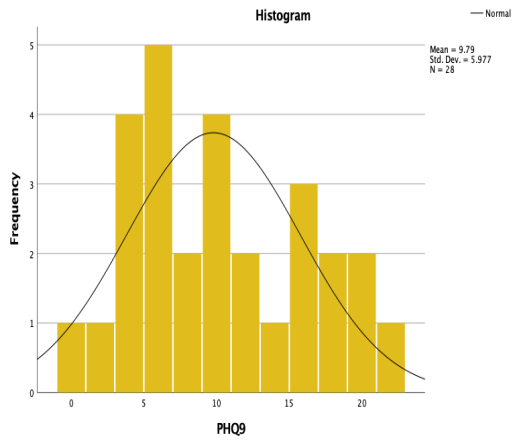


Figure 33: Histogram and Q-Q Plots for Pre and Post PSS-14

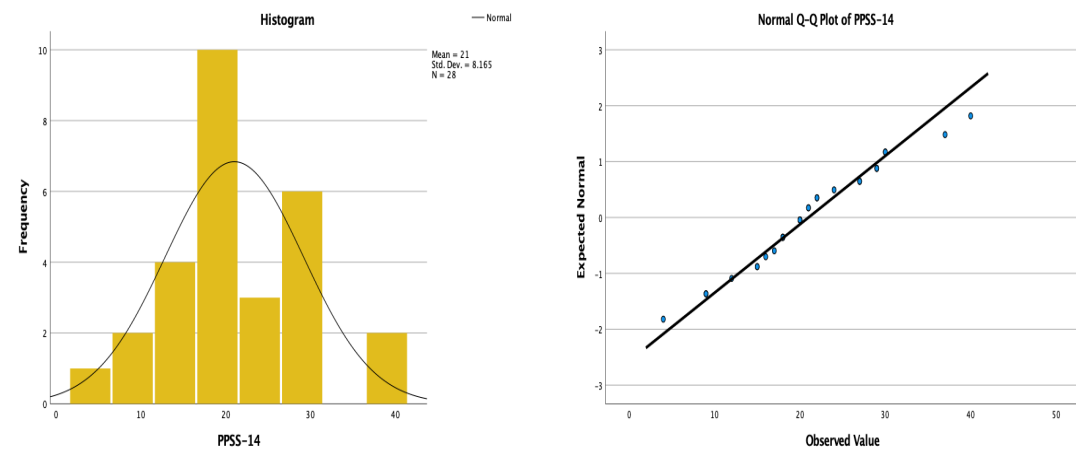
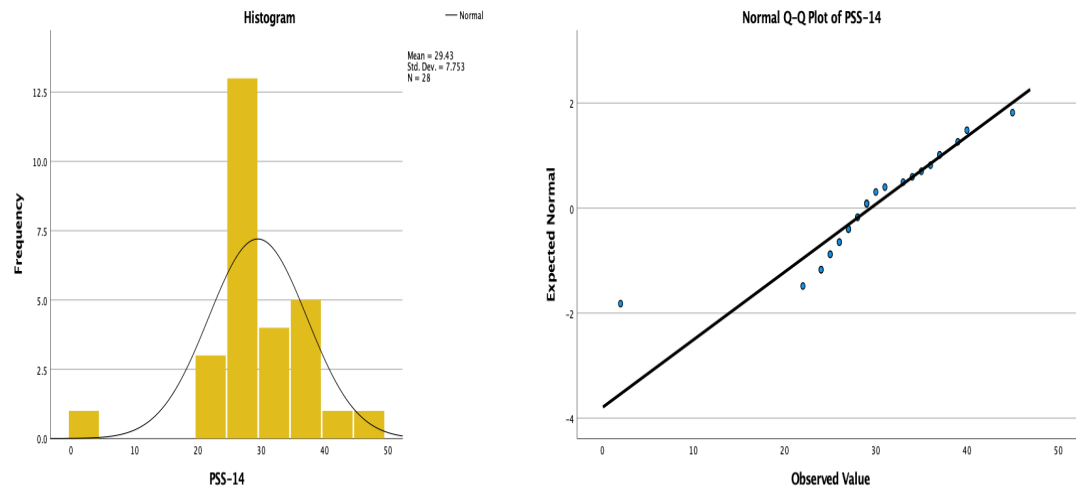


Figure 34: Histogram and Q-Q Plots for Pre and Post FFMQ

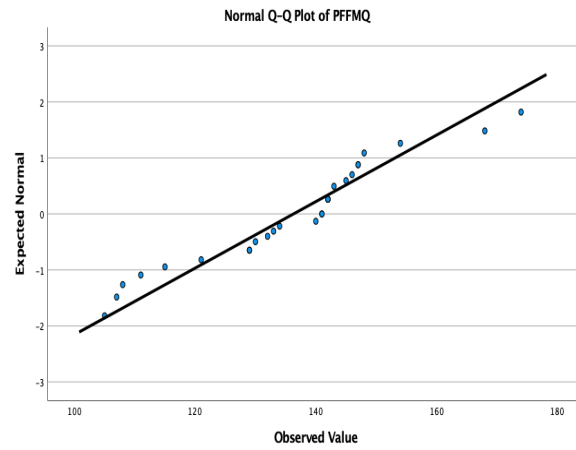
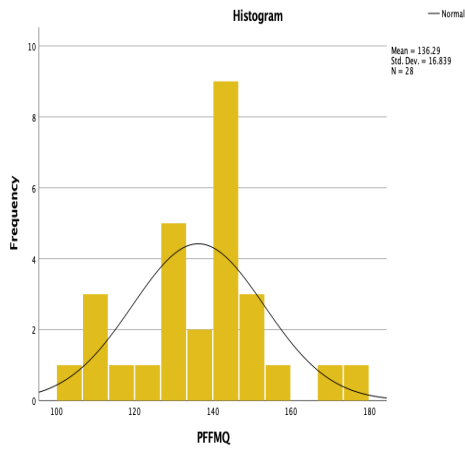
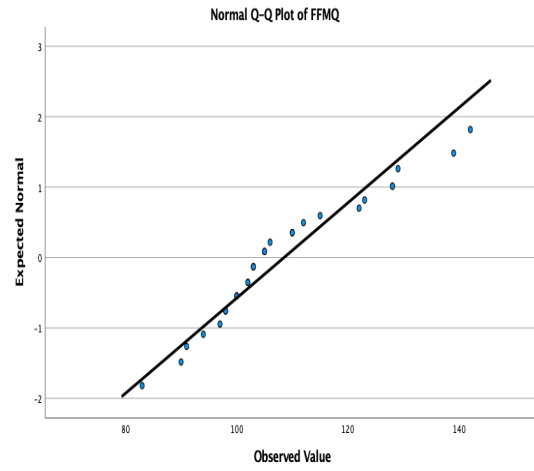
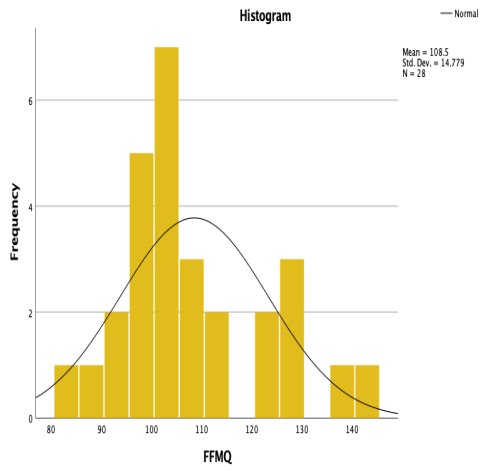


Figure 35: Histogram and Q-Q Plots for Pre and Post WHOQOL

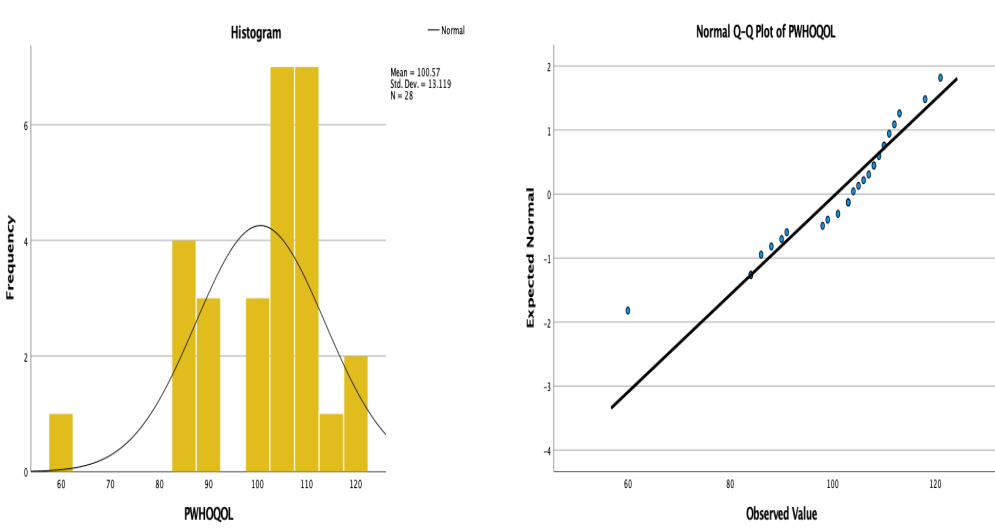
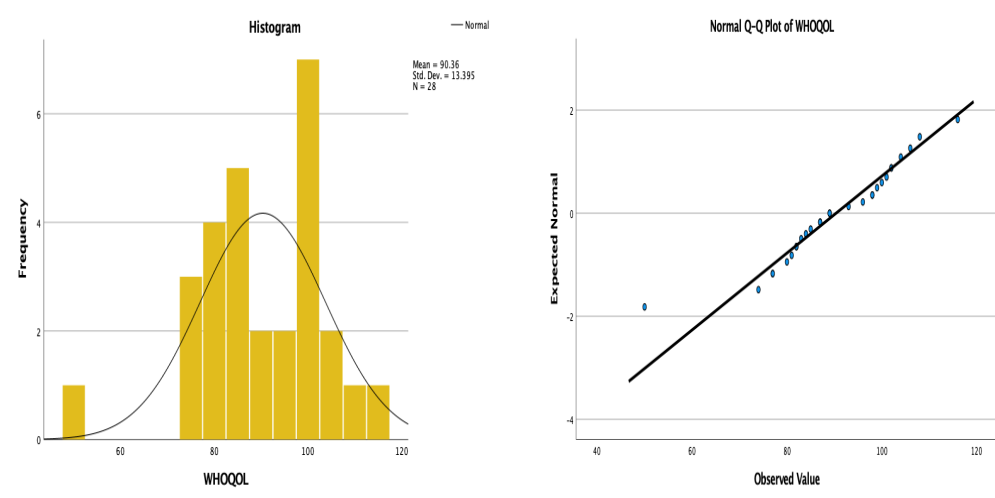
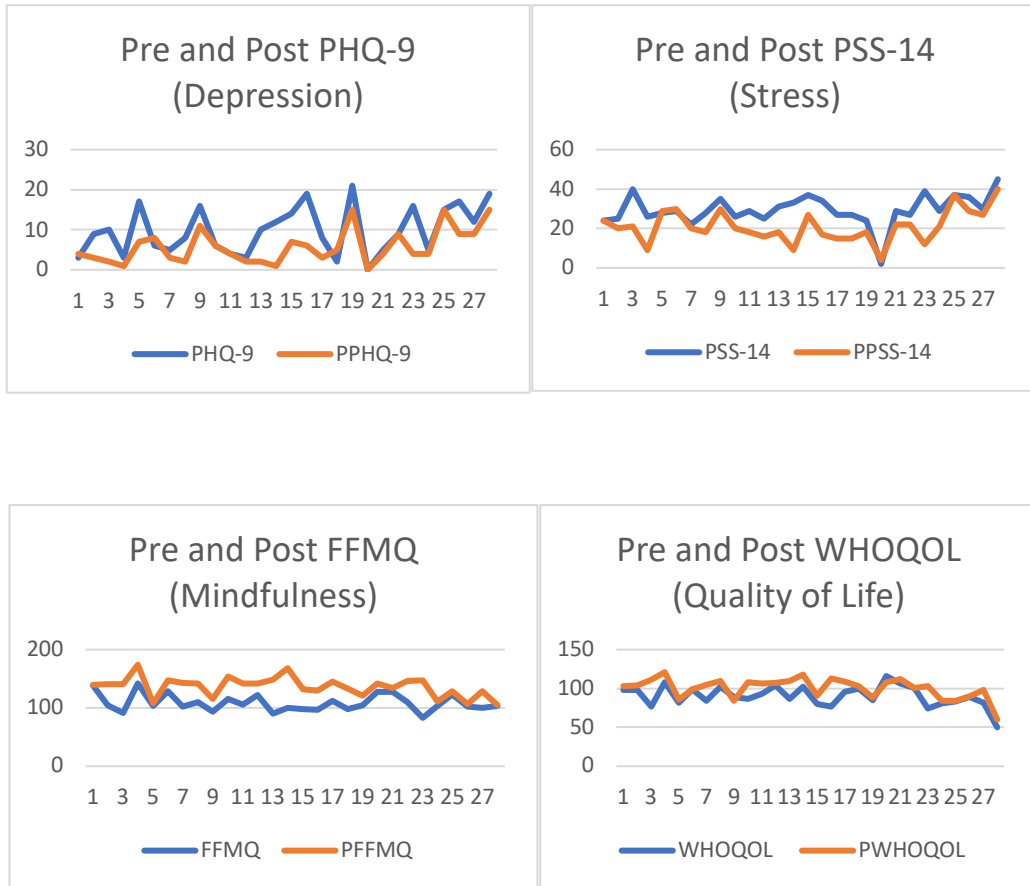


Figure 36: Raw score graphs for all questionnaires



Codebook (Study 2)

Theme 4: Adopting varied techniques during the MBCT training deemed as extremely beneficial				
<i>Sub-Theme 4.1: The body scan technique was perceived as means for improving one's overall wellbeing</i>				
Participant	Group 2, Participant 2	Group 3, Participant 2	Group 1, Participant 3	Group 4, Participant 2
Quote	“Maybe the longer ones, for example, the scan, the long ones. And a lot of them were saying, Oh, they weren't so comfortable with it, but I liked the, it takes me that amount of time to really get in touch with my body and what, how it's sitting and what, and the thoughts that go through. And recognizing that they're there. So I	“then the body scans were good. They were they were, they were quite good for helping like any for me to get rid of any like negative inner monologue sort of thing, and to be a bit kinder to yourself, and to allow yourself to have some time, and then that will be beneficial in the long run”	“Yeah, like I say, with the body scan, um, I do find that very helpful, but I find it's, I have to be kind of. I have to set aside that time to do it because there's quite a lot of distractions”	“The body scans, a lot of people in my group were using them to relax before they went to sleep”

	like the length of time for that one. It's. That that's possibly my favorite because you have to allocate time to do that"			
Code	Enjoyed the body-scan technique			
<i>Sub-Theme 4.2: Mindfulness with movement was another popular and beneficial technique which helped with relaxation</i>				
Participant	Group 2, Participant 5	Group 3, Participant 2	Group 1, Participant 7	Group 1, Participant 4
Quote	"The mindfulness walk in. I did want to, when I was walking the dog, so I found that quite useful. Um, so more of the move movement type stuff I found rather than the sit in for 20 minutes type stuff. Um, yeah, it wasn't so, um, useful for me"	"definitely the mindful movement. And then I started to turn it into, like mindful yoga. So now I've found it, like a free online course, which is, like mindfully based, but it's mindful yoga. So kind of, I try and do mindful movement. When I'm out. And	"but I really quite liked the idea of when we did, um, what was it? It was one session when we did more of a relaxation through movement and the facilitators, they try to encourage that we could incorporate that into like usual	"So yeah, just for the mindful practices actually. That were, that were helpful for me, the affirmations and the mindful movement as well, with things that hadn't done before. And I found really, really good"

		about, I've also kind of transferred into a yoga mindful yoga session as well”	routine activities and things”	
Code	Enjoyed mindfulness with movement techniques			
<i>Sub-Theme 4.3: Feeling relaxed after adopting the breathing exercises on a daily basis</i>				
Participant	Group 2, Participant 5	Group 2, Participant 2	Group 3, Participant 3	Group 4, Participant 1
Quote	“Going back to that breathing space and yeah. Um, you know, um, Part of what the reason for going on the course was is that I do my thoughts do spiral and they do go to the worst case scenario. And I've been using the breathing space to bring myself back to that moment in	“Um, I think it's the 10 to 20 minutes breathing exercise is the most useful because I use it. Sit down to relax to do it. I use it in the shower, in the shower. Actually, very convenient. It is because I used to dash in and out of the shower so quick. Cause I'm rushing around	“I think definitely the breathing space. The thing it's five minutes on the audio clip that we had, but you know, three Five Minute breathing space doing that a few times a day because that was. So it's like such a quick and easy way to just check in with yourself that you can kind of do it,	“The, yeah, the, the three-stage breathing exercises. I've found that quite helpful. It's to kind of drop into the days, like a very quick exercise to kind of like send them myself and, yeah”

	time and not to allow that to happen”	doing this, that, and the other”	wherever. Because sometimes I found that a bit tricky because I'm, I'm not working from home having to come into the office and I share an office with someone as well. So it's not like I can sort of sit and get my phone out and listen to the recordings that much throughout the day. So kind of learning that as a technique was quite good so that I could do it”	
Code	Perceived breathing exercises as useful			
<i>Sub-Theme 4.4: Displaying a strong preference for sitting meditation techniques</i>				
Participant	Group 3, Participant 3	Group 1, Participant 1	Group 6, Participant 1	Group 4, Participant 3

<p>Quote</p>	<p>“You know, a few times a day. And then towards the end of the weeks when it came to the sort of sitting, or Yeah, sitting practices. I like to use the ones the ones that were kind of like working with difficulty ones. I just yeah, found those the most helpful”</p>	<p>“Probably the next one would have been some of the sitting meditation. So, um, I think there was a 10 minute and a 35 minute, maybe those ones just to kind of, I guess, break up the day a bit or, or a short amount of time that you can kind of spend on yourself and feel a bit refreshed”</p>	<p>“I liked the sitting meditation”</p>	<p>“I think also, um, because it ran for the, for the eight weeks, it made me get a little bit of, um, a little bit more regularity in doing my meditation practice. So I thought that was good. I thought the, um, yeah, so probably those are the two, probably those are the two main things I think”</p>
<p>Code</p>	<p>Sitting meditation technique</p>			

Study 3



**University of
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**Faculty of Medicine & Health Sciences
Research Ethics Committee**

Faculty Hub
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Nottingham University Hospitals
Nottingham, NG7 2UH
Email: FMHS-ResearchEthics@nottingham.ac.uk

22 November 2021

Nazm Berry

PhD Student in Health Psychology Research
Psychiatry and Applied Psychology
School of Medicine
Yang Fuhia Building
University of Nottingham Jubilee Campus
Wollaton Road
Nottingham
NG8 1BB

Dear Ms Berry

Ethics Reference No: FMHS 320-0821 – please always quote	
Study Title: Emotional Intelligence, Self-Efficacy and Coping Strategies among Nursing Students in United Kingdom (UK): A Mixed-Method Study	
Chief Investigator/Supervisor: Dr Elena Nixon, Assistant Professor, Psychiatry and Applied Psychology, Institute of Mental Health, School of Medicine	
Lead Investigators/student: Nazm Berry, PhD student in Health Psychology Research	
Other Key investigators: Dr Holly Blake, Associate Professor Behavioural Science, School of Health Sciences	
Proposed Start Date: 01/12/2021	Proposed End Date: 01/03/2022

Thank you for your responses to the comments made by the Committee and the following documents were received:

- FMHS REC Application form and supporting documents version 2.0: 11.09.2021

These have been reviewed and are satisfactory and the study is given a favourable opinion.

A favourable opinion is given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Dr Bethan E Phillips, Associate Professor
Clinical, Metabolic & Molecular Physiology, Medical Sciences & Graduate Entry Medicine
Acting Chair, Faculty of Medicine & Health Sciences Research Ethics Committee



*Saving one life will
make you a hero, but
saving hundred lives
will make you a nurse*



If you are a student nurse in the University of Nottingham, please spare a few minutes to complete an online survey (following the link below) to tell us about the stress you experience, and how you cope with stress.

LINK:

<https://nottingham.onlinesurveys.ac.uk/stress-and-wellbeing-in-nursing-students>

You may be asked at a later point to take part in a brief interview/focus-group session should you wish to do so.

All participants will enter a draw where two student nurses will receive a £15 amazon gift voucher for questionnaire completion, one student will receive the same for the interview completion, and similarly for the focus-group session.

If you have any queries regarding the study, please email the researcher (Nazm Berry) at nazm.berry@nottingham.ac.uk

Stress and Wellbeing in Nursing Students: FMHS Research Ethics Committee Application Form Final Version 2.0 Date 11.09.2021



**University of
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**Faculty of Medicine & Health Sciences
School of Medicine
Division of Psychiatry & Applied Psychology
Institute of Mental Health,
Jubilee Campus, Triumph Road,
Nottingham, NG7 2TU**

PI/Supervisor name, status: Dr Elena Nixon, Assistant Professor
PI/Supervisor contact details: elena.nixon@nottingham.ac.uk
Lead researcher contact details and status [PhD student]: Nazm Berry
Study mobile number/webpage /email address etc: nazm.berry@nottingham.ac.uk



Study Title: Emotional Intelligence, Self-Efficacy and Coping Strategies among Nursing Students in
United Kingdom (UK): A Mixed-Method Study

Interview Guide

(Final Version: 2.0 Date: 11/09/2021)

1. What made you decide that you want to become a nurse?
 2. What are your thoughts about the nursing programme? (prompts: teachers, course material, learning, likes and dislikes about the course)
 3. Do you experience stress at work/school? If so, what are the possible reasons as to why you feel stressed? (prompts: academic wise, or during placement)
 4. How does this stress have an impact on your wellbeing? (prompts: quality of life, work-life balance, mood)
 5. How do you cope with stress? (prompts: do you talk to a friend or someone you trust; do you contact your personal tutor or a professional service such as GP or university welfare service; do you engage in activities such as personal hobbies; or do you completely avoid the situation)
 6. Try to think of a time when you received negative feedback from your peers or a teacher. How did you cope with that situation?
 7. Have you ever felt demotivated when it comes to completing tasks during or after school? If so, how did you overcome this challenge?
 8. In terms of your personality, what do you think are your strengths and weaknesses?
 9. If you notice a fellow student is going through a difficult time (either with academics or in their personal life), how would you approach them and offer help? (prompt: listen to their issues, offer advise)
 10. How confident are you in successfully completing your nursing course?
-



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Faculty of Medicine & Health Sciences
School of Medicine
Division of Psychiatry & Applied Psychology
Institute of Mental Health,
Jubilee Campus, Triumph Road,
Nottingham, NG7 2TU

PI/Supervisor name, status: Dr Elena Nixon, Assistant Professor
PI/Supervisor contact details: elena.nixon@nottingham.ac.uk
Lead researcher contact details and status [PhD student]: Nazm Berry
Study mobile number/webpage /email address etc: nazm.berry@nottingham.ac.uk

Study Title: Emotional Intelligence, Self-Efficacy and Coping Strategies among Nursing Students in United Kingdom (UK): A Mixed-Method Study

Focus-Group

(Final Version 2.0 Date: 11/09/2021)

Situation 1: “You are caring for a disabled child on a paediatric ward who requires an emergency surgery. Their parent approaches you as you are due to start your shift and are about to go into a handover meeting. The parent starts shouting and demanding that they see their child, and asks you to tell them about the surgery. What would you do in this situation”?

Prompts: Option 1- You will sympathise with the parents and leave the meeting to talk to them about their child’s condition.

Option 2- You will explain to them that you have a meeting and the doctor will speak to them regarding the surgery and any other formalities that need to be done.

Situation 2: “You have a deadline for an essay due in a week’s time but your close relative falls severely unwell and you are required to take care of them. You attempt to complete your work in between your caring responsibilities but you find yourself struggling to concentrate due to worrying about your relative and lacking the motivation to keep going. What would you do”?

Prompts: Option 1- You will explain to your professor the condition of your relative and ask for a later submission date for the essay so you can devote all your time for your relative.

Option 2- You will make a time plan as to when you can fit in your work and taking care of your relative.

Option 3- You will seek support from your peers and ask what is the best solution for this situation.

Situation 3: “After a seminar on different physiological systems of the body, yourself and 3 other people are grouped together in order to create a presentation based on one physiological system. Your group chooses the digestive system, and you set out in the session which section of the presentation each of you will focus on. Later that week, the day before the presentation is due, one of your group member states they have not done that part of the presentation as they were not keeping well. What would you do”?

Prompts: Option 1- You tell your professor the situation and how one team member did not contribute due to the fact that they were unwell, and ask for another presentation date.

Option 2- You seek help from other peers from the same team to come up with solutions because you want to give the presentation on that same day as planned.

Option 3- You contact the same team member who did not show up, asking for help so another team member can present the same part.

Ground Rules:

Each of the 3 scenarios will be allocated randomly to one of the 3 participants in the Focus Group. Each of the scenarios/situations will be presented one the screen in a seriatim order (starting from Scenario 1 and subsequently moving to Scenario 2 and then 3).

The participant who has been assigned the respective scenario will be allocated 5 minutes to indicate which option they would have chosen in order to resolve the situation depicted in the given scenario and will be prompted by the researcher to elaborate on the rationale for their answer. If the participant needs extra time, up to an extra 5 minutes can be allocated.

After the participant has presented the option they would have chosen in order to resolve the given situation of the scenario, the ground will open up to the other two participants for discussion. They will be encouraged to also express their views on the scenario and the option they would have selected and why. The group discussion will take approximately 15 minutes.

Following completion of group discussion for Scenario 1, the same procedure will be completed for the other two scenarios.

Participants will be asked to have their cameras on and their mics on at all times (except in the case of signal noise when participants and the researcher will mute their microphones when they do not talk). Participants will also be asked to respect the others’ views and not intervene when the other is talking. Participants will be asked to press the ‘raise hand’ option on MS Teams when they wish to talk. The researcher will ensure that all participants have had the chance to talk by prompting them to express their views but should a participant not wish to talk or answer they will be informed they can say ‘pass’ and no reason will have to be offered.

The researcher will keep an eye on the clock to ensure the timings per scenario are observed and to adhere to the specified total duration of the focus group session that should not exceed 60 mins.

Figure 37: Histogram and Q-Q Plot for Perceived Stress Scale-14 (PSS-14)

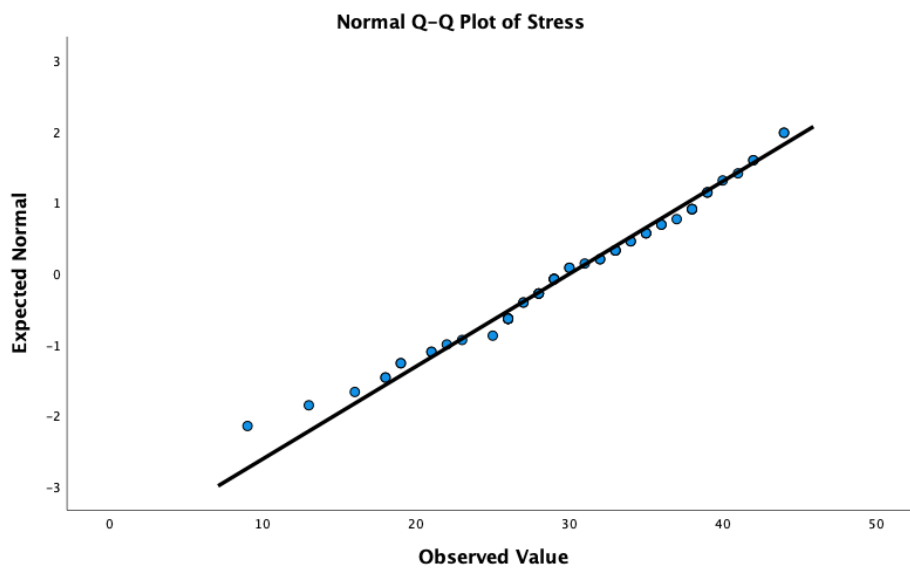
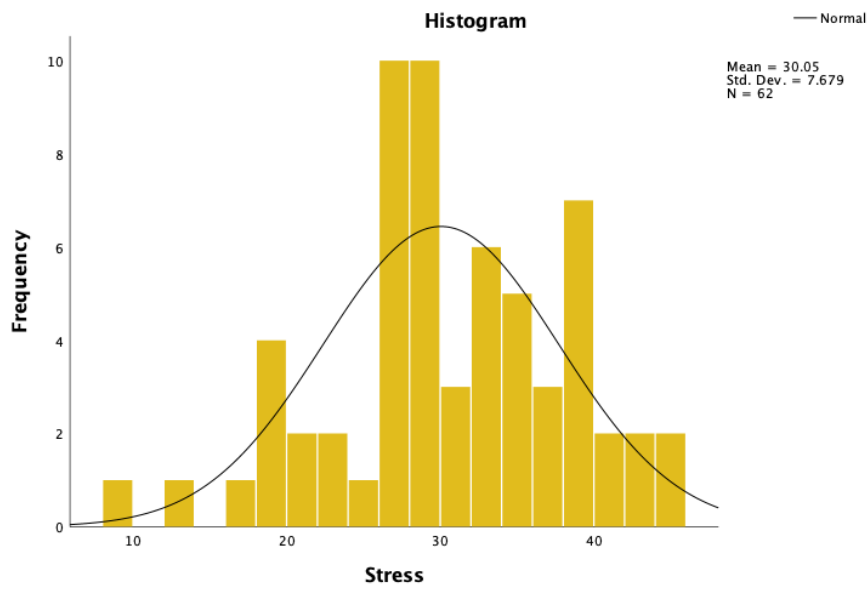


Figure 38: Histogram and Q-Q Plot for Brief COPE (Problem-Focused Coping)

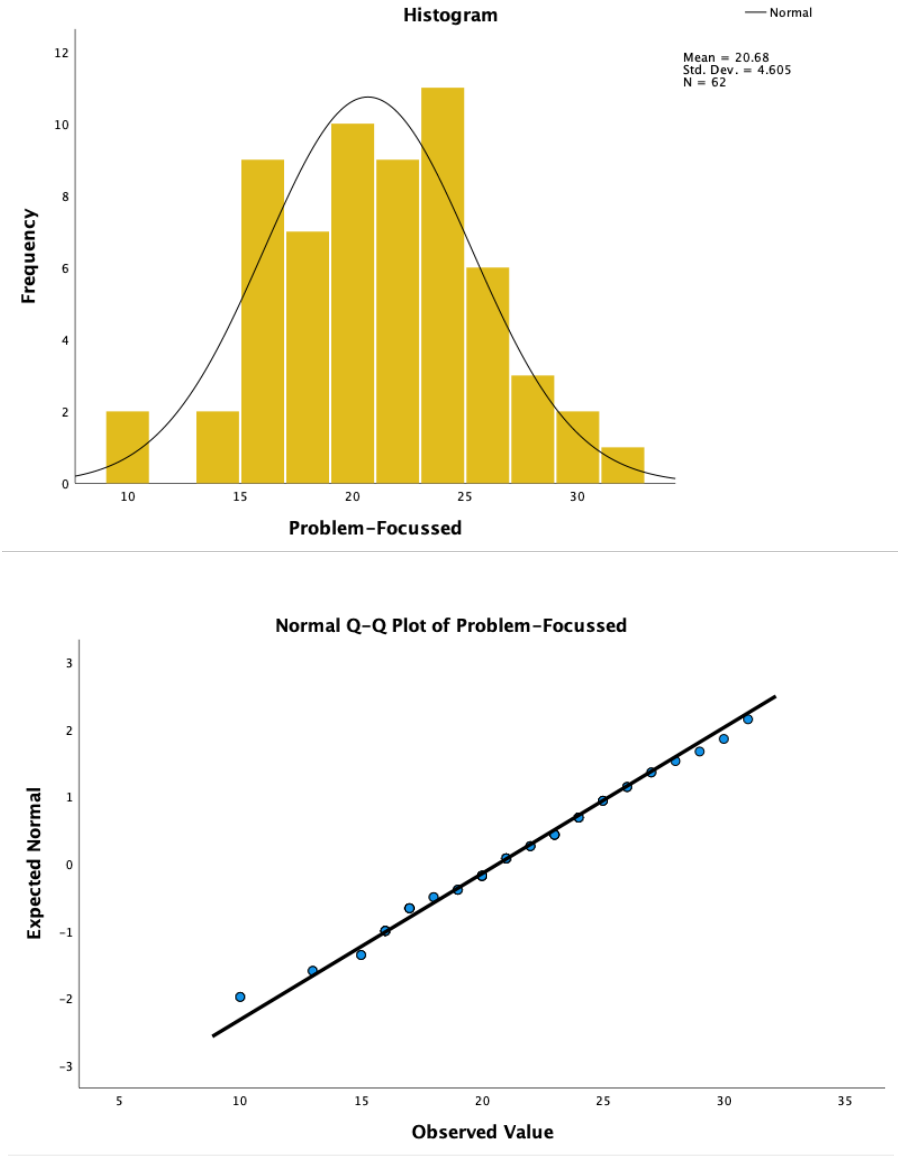


Figure 39: Histogram and Q-Q Plot for Brief COPE (Emotion-Focused Coping)

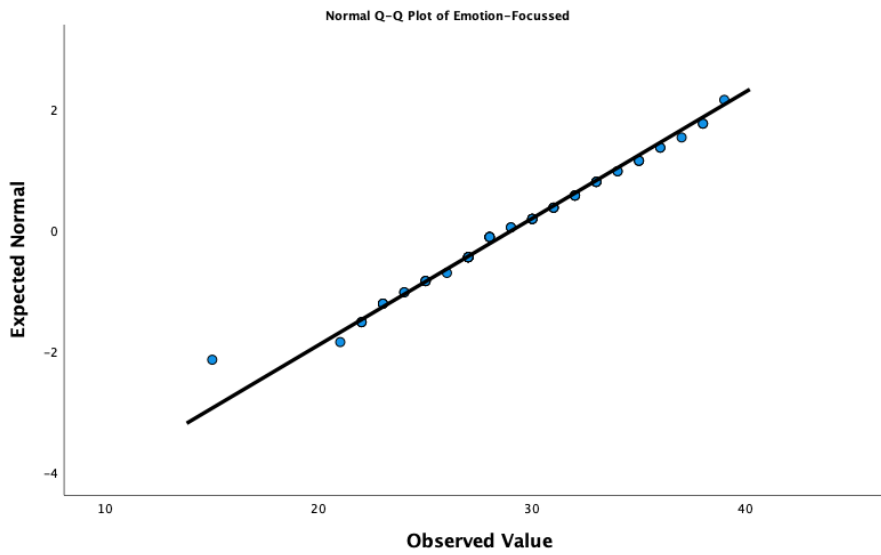
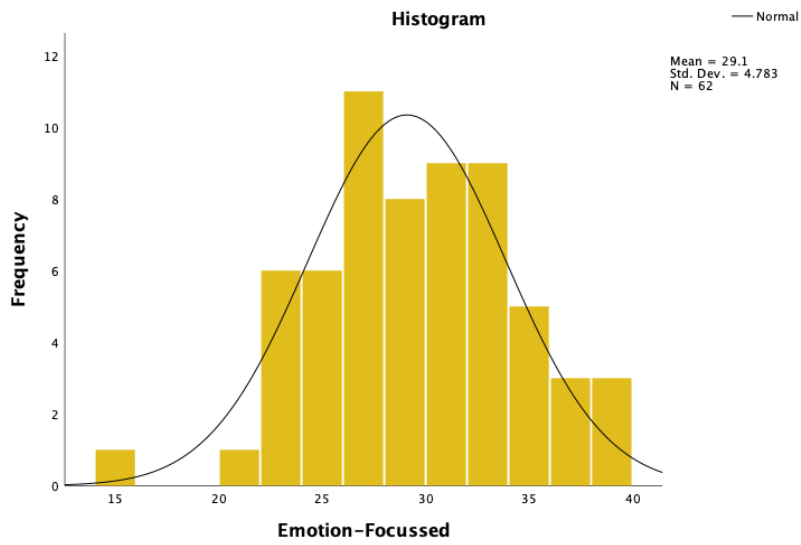


Figure 40: Histogram and Q-Q Plot for Brief COPE (Avoidance Coping)

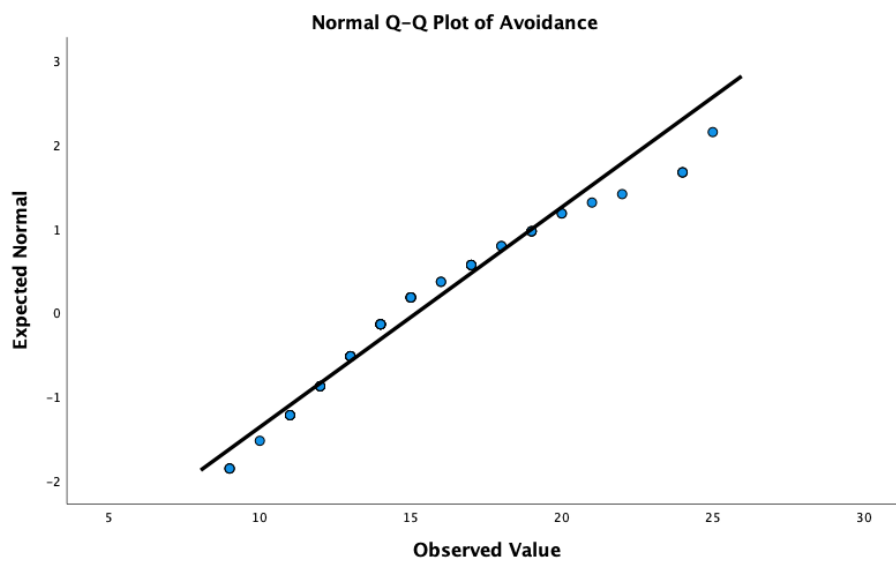
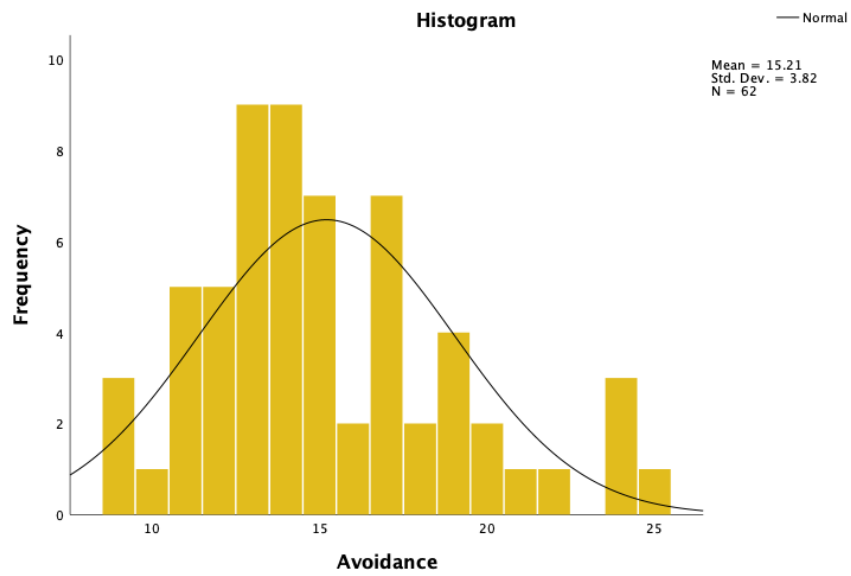


Figure 41: Histogram and Q-Q Plot for Schutte Self-Report Emotional Intelligence Test (SSEIT)

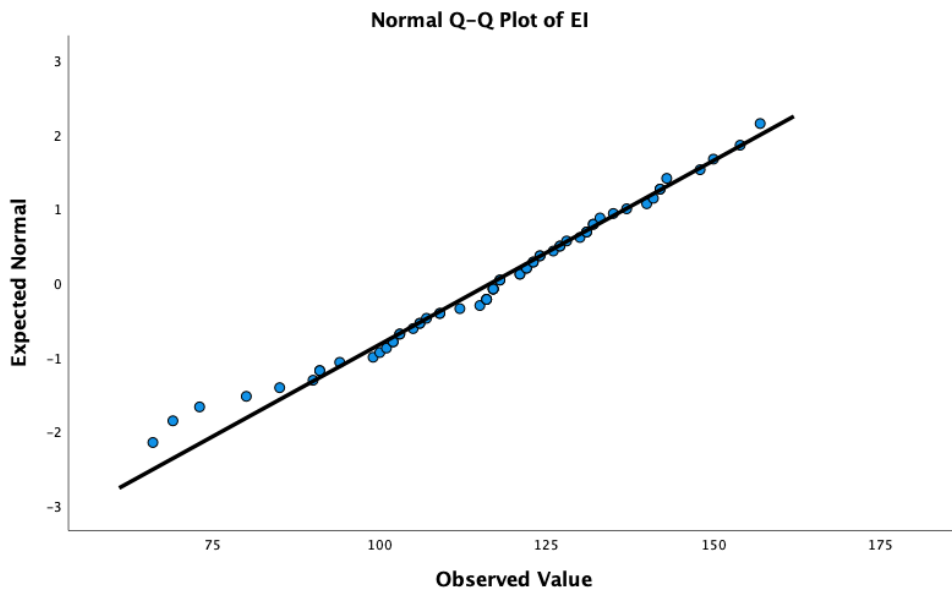
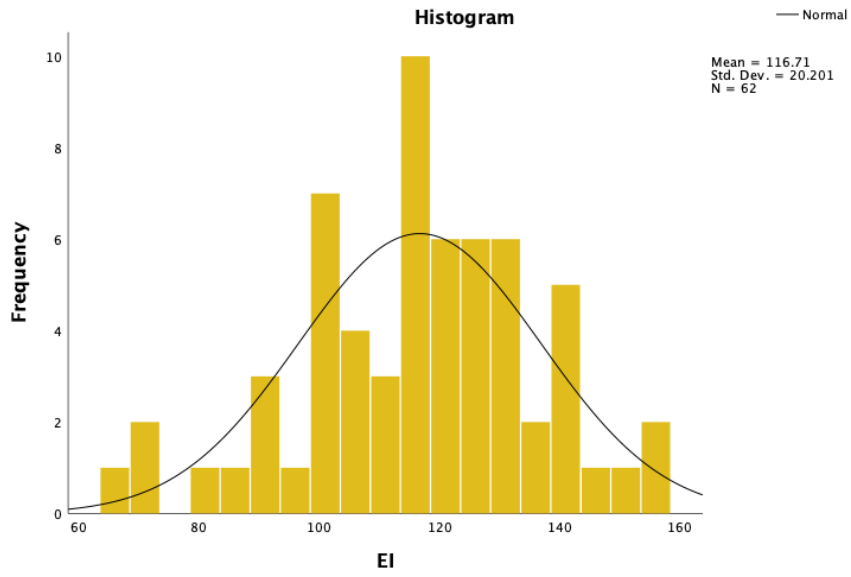
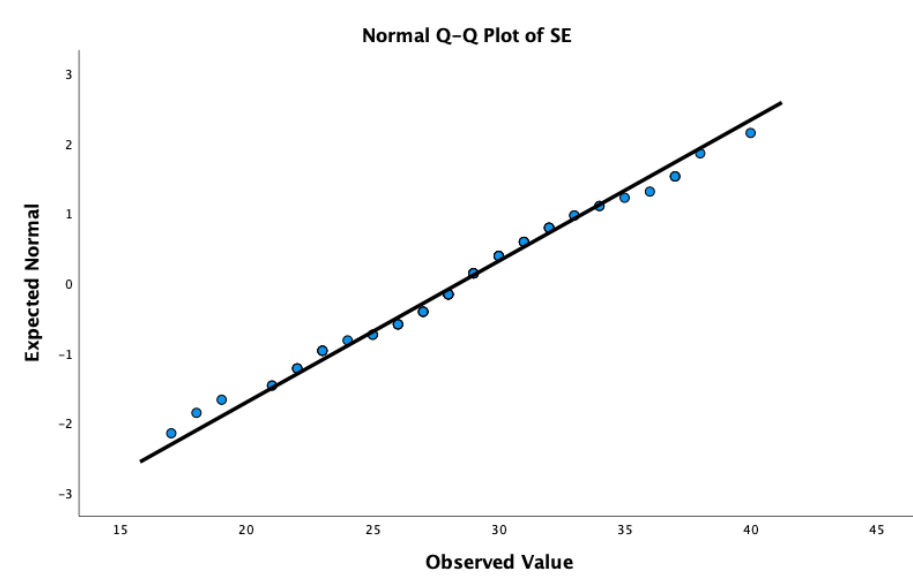
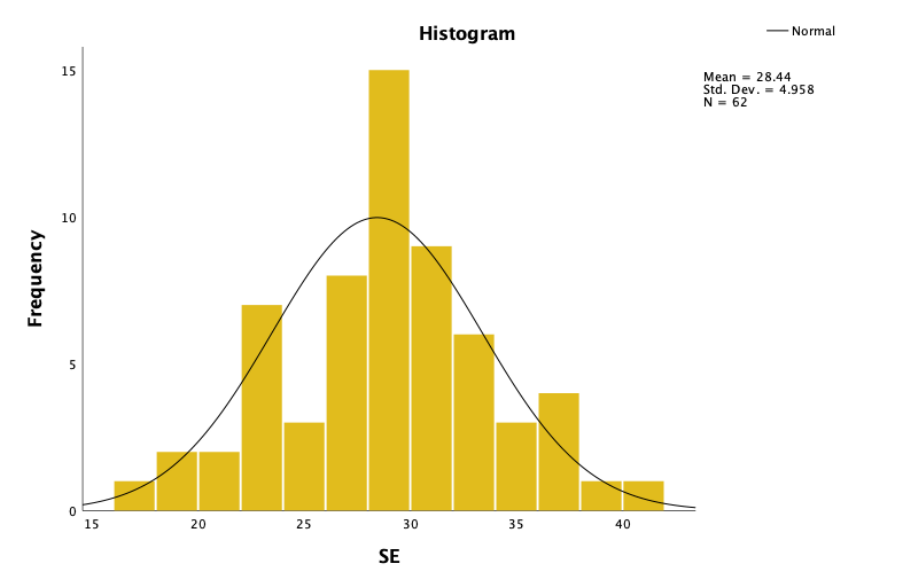


Figure 42: Histogram and Q-Q Plot for General Self-Efficacy Scale (GSE)



Codebook (Study 3)

<p>Theme 4: The nature of the course deemed to be highly demanding, adversely affecting student engagement</p>			
<p><i>Sub-Theme 4.1 Overwhelming course material made it difficult for students to keep up</i></p>			
Participant	11	18	3
Quote	<p>“Uhm, I don't appreciate the amount of written assignments that we have to do versus everything else, because that is 90% of my assessments and I just don't think that nursing is so much of a written. It is quite so, I would assume like or at least I assume that all my assessments would be more practical, more</p>	<p>“The learning material that we get up that's connected to like lectures and things, I'd say sometimes it's a bit more difficult to understand, Some other tutors are better than the others at doing it. Or maybe that's just because I learn and there's different ways. Yeah, but yeah, it's kind of trying to learn in your</p>	<p>“Uh, it's been very weird. It's been a lot of PowerPoints, which isn't very good”</p>

	on site, but they're more about research and ethics”	own way and then change you know something that you might not understand”		
Code	More focus on theory than practical	Course material requires more self-study	Do not like the course material	
<i>Sub-Theme 4.2: Challenging to keep up with deadlines for assignments</i>				
Participant	4	9	19	1
Quote	“And then workload wise, obviously it can cause stress if you've got a lot of deadlines coming up at the same time and things like that”	“Academic wise, I think it's more about time management and just having a lot to do in like a short space of time. I think that stresses me out a lot”	“It's probably when lots of things start mounting up on top of each other. That's when I would get stressed”	“So it's kind of in that kind of part having a deadline that's gets shorter and shorter. Or you know there's a lot of other work to do at the same time”
Code	Keeping up with the deadlines			

<i>Sub-Theme 4.3: Struggling with extensive research and academic writing</i>				
Participant	11	6	19	18
Quote	“Uhm, I don't a lot, to be honest, I'm more stressed when I'm researching”	“Assignments and I think it's a bit of perfectionism really I think 'cause, I I do struggle to write and I know what I want to say. I understand the knowledge, but writing it coherently for me it is a bit of a struggle, but that's my own individual”	“But yeah, I'd say that's the main thing that stresses, it's the thing that stressed me out before starting the idea of writing like assignments because I hadn't written. I went to uni like 15-20 years ago and I haven't written essay in all that time.	“I would say assignments is one of my biggest stressors. Sometimes it's because I don't really understand what I've got to do”
Code	Stress of researching	Struggle with academic writing		
<i>Sub-Theme 4.4: Restrictions due to COVID-19 acted as a barrier for interaction among peers and teachers</i>				
Participant	3	2		

Quote	<p>“Yeah, the pandemics been stressful. So that's been a thing. And then starting university in the middle of that is very stressful”</p>	<p>“Sad actually, because they started off phenomenally well and then COVID hit. A lot of students quit or was mentally poorly or physically poorly. I know myself. I kind of had mental health issues, my mental health and a lot worse. Uh, my. My stress levels were through the roof”</p>
Code	Stress due to COVID-19	

Excluded studies from chapter 2 (Scoping Review)

Author and Year	Aim of the Study	Population	Intervention and Study Design	Reason for Exclusion
Shapiro et al. (2005)	To examine the effects of MBSR on healthcare professionals.	N=38, USA	MBSR; RTC	Study was conducted outside NHS U.K.
Kate Barret and Ian Stewart (2020)	To examine the effects of ACT and CBT on stress and burnout among social and healthcare workers.	N=42, U.K., USA, Philippines and Ireland	ACT and CBT; Intervention study (pre/post)	Study was conducted outside NHS U.K.
Raab et al. (2015)	To examine the effects of MBSR on self-compassion, burnout, stress and quality of life among mental health professionals.	N=22, Canada	MBSR; Intervention study (pre/post)	Study was conducted outside NHS U.K.
Andrés Martín-Asuero and Gloria García-Banda (2013)	To examine the effect of mindfulness on distress reduction among healthcare professions.	N= 29, Spain	MBSR; Intervention study (pre/post)	Study was conducted outside NHS U.K.
Matthew J. Goodman and John B.	To examine the effects of MBSR on mental wellbeing and	N= 93, USA	MBSR; Intervention study (pre/post)	Study was conducted outside NHS U.K.

Schorling (2012)	burnout among healthcare providers.			
Oman et al. (2006)	To examine the effects of a self-management tool based on passage mediation among healthcare professionals.	N=61, USA	Passage mediation; RTC	Study was conducted outside NHS U.K.
Lou et al. (2022)	To examine the effects of self-help interventions on stress and mental health among healthcare workers.	N/A, China	Self-Help Plus; RTC	Study was conducted outside NHS U.K. Also, results are not yet published.
Suyi et al. (2017)	To examine the effects of mindfulness on stress, burnout, mindfulness and compassion among healthcare workers.	N=37, Singapore	MBSR; Intervention study (pre/post)	Study was conducted outside NHS U.K.
Ireland et al. (2017)	To examine the effects of mindfulness training in stress and burnout among medical practitioners.	N= 44, Australia	MBSR; Intervention study (pre/post)	Study was conducted outside NHS U.K.

Ruths et al. (2012)	To examine the effects of MBCT on stress, psychological wellbeing, satisfaction with life, worry, trait anxiety, and awareness among mental health professionals.	N=27, UK	MBCT; Intervention study (pre/post)	Study was conducted outside NHS U.K.
Weiner et al. (2020)	To examine the effects of the 'My Health too' CBT programme among healthcare workers.	N=120, China	Online CBT; Intervention study (pre/post)	Study was conducted outside NHS U.K. Also, results are not yet published.
Godfrind and Heeringen (2010)	To examine the effects of MBCT on the relapse of depression among participants.	N=106, Belgium	MBCT, RTC	Study was conducted on general population and not on NHS healthcare staff.
Bee et al. (2010)	To examine the feasibility of telephone-delivered CBT.	N= 53, UK	Telephone CBT; RTC	Study was conducted on general population and not on NHS healthcare staff.
McCrone et al. (2018)	To evaluate the cost effectiveness on computer-delivered CBT among patients.	N=274, UK	Online CBT; RTC	Study was conducted on general population and not on NHS healthcare staff.

Li et al. (2020)	To examine the effects of CBT for psychological distress among patients.	N=93, China	CBT; RTC	Study was conducted on general population and not on NHS healthcare staff.
Carrieri et al. (2018)	To understand what interventions can help minimize mental ill-health among doctors.	N/A, UK	N/A	Suggestions on what wellbeing interventions should be adopted.
Simon et al. (2021)	To explore the views of NHS commissioners and managers on IAPT implementation.	N/A, UK	N/A	Exploring views regarding interventions.
Blake et al. (2013)	To deliver and evaluate a 5-year wellness programme for improving the wellbeing among NHS employees.	N=1134, UK	Workplace wellness programme; Intervention study (pre/post)	Physical/behavioral wellbeing intervention.
Cole et al. (2020)	To learn ways of delivering psychological wellbeing interventions during the pandemic.	N/A, UK	N/A	Exploring views regarding interventions.
Simpson et al. (2021)	To determine the responsiveness to change of NHS	N=402, UK	NHS Practitioner Health;	Study was conducted on general population

	practitioner health.		Intervention study	and not on NHS healthcare staff.
Karkou et al. (2022)	To determine the helpful and unhelpful factors of a new creative psychotherapy.	N=13, UK	Arts for the Blues; Qualitative study	Study was conducted on general population and not on NHS healthcare staff.
Dawoodbhoy et al. (2021)	To align issues in patient flow among mental health units with AI solutions.	N=20, UK	Qualitative study	Study was conducted on general population and not on NHS healthcare staff.
Goodyer et al. (2017)	To assess the effects if different psychotherapies on depression.	N=470, UK	CBT and short-term psychoanalytical therapy; RTC	Study was conducted on general population and not on NHS healthcare staff.
Talwar et al. (2018)	To examine the effects of music therapy among patient with schizophrenia.	N=115, UK	Music therapy; RTC	Study was conducted on general population and not on NHS healthcare staff.
Johnson et al. (2018)	To assess the impact of self-management interventions facilitated by peer support works on the reduced rate of readmission among acute patients.	N=434, UK	Peer supported self-management; RTC	Study was conducted on general population and not on NHS healthcare staff.

Estevao et al. (2020)	To examine the implementation and effectiveness of the Scaling -up Health-Arts programme to study the effects of arts on mental health.	N=400	SHAPER; RTC	Study was conducted on general population and not on NHS healthcare staff; results not yet published.
Thomson et al. (2011)	To examine the benefits of heritage-in-health intervention using psychometric measures of happiness and wellbeing.	N/A	Heritage in-health; Intervention study (pre/post)	Study was conducted on general population and not on NHS healthcare staff.
Slade et al. (2015)	To examine the impact of REFOCUS on the values, strengths and goals of patients, by targeting staff behavior.	N=297, UK	REFOCUS; RTC	Study was conducted on general population and not on NHS healthcare staff.
Stiles et al. (2006)	To compare the outcomes of contrasting approaches among patients practices in routine care.	N=1309, UK	CBT, person-centred therapy, psychodynamic therapy; Intervention study (pre/post)	Study was conducted on general population and not on NHS healthcare staff.

Ross et al. (2014)	To determine the uptake of HeLP-Diabetes among patients and services.	N/A, UK	HeLP-Diabetes; Intervention study (pre/post)	Study was conducted on general population and not on NHS healthcare staff; results not yet published.
Galante et al. (2016)	To determine the effects of mindfulness on psychological distress, resilience and academic performance.	N=550, UK	Mindfulness training; RTC	Intervention offered to university students in UK; results not yet published.
Ponzo et al. (2020)	To assess the effects and efficacy of BioBase and paired wearable device BioBeam on anxiety, and stress among students.	N=262, UK	Mobile App BioBase; RTC	Intervention offered to university students in UK.
Papadatou-Pastou et al. (2019)	To assess the feasibility and acceptability of an online psychological wellbeing and study skills support system.	N=13, UK	MePlusMe; Intervention study (pre/post)	Intervention offered to university students in UK.

Galante et al. (2018)	To assess the effects of mindfulness courses on resilience to stress among students.	N=182, UK	Mindfulness Skills for Students; RTC	Intervention offered to university students in UK.
Kidger et al. (2021)	To examine the effects of an intervention on the mental health and wellbeing of teachers.	N=25, UK	Mental Health First Aid Training, mental health awareness session, confidential staff peer support service; RTC	Intervention offered to teachers for supporting UK university students.
Hood et al. (2021)	To examine the effects of a psychoeducational happiness course on the mental health of students.	N=272, UK	Science of Happiness; RTC	Intervention offered to university students in UK.
Tymms et al. (2016)	To examine the effects of two interventions for improving physical activity and wellbeing.	N=1494, UK	Peer monitoring and Participative learning; RTC	Intervention offered to students for improving physical wellbeing.
Galante et al (2021)	To determine the effects of mindfulness training on the	N=616, UK	Mindfulness Skills for Students; RTC	Intervention offered to university students in UK.

	resilience among students.			
Gordon et al. (2014)	To examine the effects of MAT on the psychological wellbeing of students with low moods, stress, and anxiety.	N=14, UK	Meditation Awareness Training (MAT); RTC	Intervention offered to university students in UK
Short et al. (2020)	To examine the effects of a peer coaching intervention on the wellbeing of students.	N=65, UK	Peer Coaching; RTC	Intervention offered to university students in UK
Greenberg and Tracy (2020)	Protecting the psychological wellbeing of NHS frontline staff.	N/A	N/A	Suggestions offered for what wellbeing intervention needs to be adopted within the UK NHS.
Raw et al. (1998)	Cost-effective smoking cessations guidelines.	N/A	N/A	Suggestions offered for what wellbeing intervention needs to be adopted within the UK NHS.
Billings et al. (2020)	Supporting NHS hospital staff	N/A	N/A	Suggestions offered for what wellbeing

	during COVID-19.			intervention needs to be adopted within the UK NHS.
Juan et al. (2021)	Supporting the mental health and wellbeing of healthcare workers during COVID-19.	N/A	N/A	Suggestions offered for what wellbeing intervention needs to be adopted within the UK NHS.
Tracy et al. (2020)	Guidelines to support the mental health of healthcare staff treating patients in the COVID ward.	N/A	N/A	Suggestions offered for what wellbeing intervention needs to be adopted within the UK NHS.
Gold et al. (2021)	To examine the effects on uptake of automated prompts to clinical staff for inviting patients to NHS Health Check, delivered via computers.	N=7564, UK	NHSHC; RTC	Study was conducted on general population and not on NHS healthcare staff.
Blake and Lloyd (2007)	To discuss the key issues in the development of workplace wellness interventions for	N/A	N/A	Suggestions offered for what wellbeing intervention needs to be adopted

	improving employee health and wellbeing.			within the UK NHS.
Quirk et al. (2018)	To explore the thoughts of NHS leaders regarding the barriers and facilitators for implementing wellbeing interventions.	N/A	Qualitative study	Thoughts and perceptions regarding the appropriate wellbeing interventions to be adopted within NHS.
Brand et al. (2017)	To identify the whole-system healthy workplace interventions among healthcare staff, and to determine whether they improve employee health and wellbeing.	N/A	N/A	Thoughts and perceptions regarding the appropriate wellbeing interventions to be adopted within NHS.
Blake et al. (2015)	To increase physical activity among healthcare employees using health messaging via SMS as delivery channels.	N=296, UK	Active8; RTC	Physical/behavioral wellbeing intervention.
Ravalier et al. (2020)	To gain an in-depth understanding of the work	N=1644, UK	Mixed-method study.	Suggestions offered for what wellbeing intervention needs

	environment and wellbeing among NHS employees.			to be adopted within the UK NHS.
Blake et al. (2016)	To examine the physical activity levels, along with the predictors and barriers of exercise among university students.	N=361, UK	N/A	Physical/behavioral wellbeing intervention among nursing students.
Howard (2020)	To examine the effects of a creative intervention on the NHS staff wellbeing.	N/A	Arts Day; Intervention study (pre/post)	Physical/behavioral wellbeing intervention.
Mhurchu et al. (2010)	To examine the effects of worksite interventions on employee diets.	N/A	N/A	Suggestions offered for what wellbeing intervention needs to be adopted within the UK NHS.
Donnelly et al. (2021)	To outline an approach for initiating supportive strategies using a wellbeing approach for improving resilience.	N/A	N/A	Suggestions offered for what wellbeing intervention needs to be adopted within the UK NHS.

Blake et al. (2008)	To examine the impact of an environmental stair-use intervention for increasing physical activity among NHS employees.	N=7000, UK	Stair-Use; Observational study	Physical/behavioral wellbeing intervention.
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COVID-19 Impact Statement

COVID19 Impact Statement 2020 For use by PGRs with a funding end date after 1st April 2021

The University of Nottingham aims to support all our PGRs to complete their degrees within their period of funded study, by meeting our [Doctoral Outcomes](#). We recognise, and aim to take into account, personal circumstances that may affect a PGR's ability to achieve this.

This Impact Statement should be used to provide details and evidence of impact for:

- applications for an additional funded period of registered study;
- applications for a funded extension to Thesis Pending;
- the thesis examination.

It will also be used to determine both the case and length of a COVID extension to study **up to a maximum of six months** (twelve for part time PGRs). **Please note that it is expected that most approved extensions will reflect the duration of enforced change in activity during lockdown, and that extensions of longer duration will be the exception rather than the rule.** You should show in this form how you have attempted to lessen the impact of the COVID pandemic on your research progress.

Please keep a completed copy of this form as you may want to refer to it as evidence of impact in your annual review process and/or thesis examination. You will also need to use it copy/paste your responses for submission in the online version of the form which will be the format used to make your extension request.

Please carefully consider your case for any extension with reference to the University's online [Policy](#) on Circumstances Affecting Students' Ability to Study and Complete Assessments (under Exceptional Guidance to Extenuating Circumstances Panels) and section 16 of the PhD Regulations (see [Appendix 2](#), section 1), relating to existing regulations on circumstances that may or may not be usual grounds for an extension, and the Exceptional Regulations for UKRI funded PGR extensions (which can be found on the same site as this form).

We strongly encourage you to discuss the completion of this form with your supervisors. If you prefer, you can alternatively discuss the form with an appropriate member of PGR support staff such as your DTP/CDT Director or Manager, DTP/CDT Welfare Officer, School Postgraduate Student Advisor, School PGR Director or other member of the Welfare team, or the [Researcher Academy Faculty Lead](#) (formerly Associate Dean for the Graduate School).

To ensure that you cover the full impact of the COVID-19 pandemic on you and your research **since March 15th 2020**, please complete all relevant sections of the form. You can be very brief but please include all relevant information even in note or bullet form.

When applying for an extension to either your period of registered study (i.e. when active data collection is to be done) or to Thesis Pending, or both you should show, briefly how/whether your work to date already meets some of the University and QAA Doctoral Outcomes, and clarify which doctoral outcomes are not currently met and how your plan will enable you to meet these ([Appendix 1](#)).

Under the exceptional conditions of the COVID-19 pandemic, in addition to the usual circumstances that may be grounds for an extension, you can and should also consider, and evidence if asked to do so, the additional circumstances listed in Section 1. These include but are not limited to:

- your ability to work effectively now that you are not in your usual working environment;
- any change in access to research settings or facilities, such as archives, field-sites, laboratories, software, or databases;
- any changes in your personal circumstances or environment resulting from remote working, or national restrictions , including those related to:
 - caring responsibilities,
 - disability and/or [being at higher risk from coronavirus](#)
 - impacts on your supervisory team that have affected your research progress
 - your mental health, and whether you have access to mental health support if needed,
 - any financial impacts, either personal or on the research in progress or planned.
 - any other considerations that should be taken into account, whether these do or do not relate to any protected characteristics.

This form should capture the impact of the pandemic on you and your research progress, not solely any impact of the University closure itself.

For further information including addressing future impacts; [privacy and confidentiality](#) of information submitted, and additional notes and guidance please see [Appendix 2](#).

The information collected in this form will be used for the purposes of assessing your case for a funded extension to your doctoral studies, to provide information to your funder; to inform the University of the range of impacts that our PGRs have experienced, and to inform policy decisions on how to support our PGRs in future. The document will also aid discussion and decision making, to ensure consistency in evaluation of the impacts for different people.

All information used for other than the stated purposes will be anonymised, and all personal information through which anyone could be identified removed. The information on this form will not be shared with anyone, including supervisory teams, for other than the stated purposes, without your permission.

Background Information – your details

Family Name:	Berry	First Name(s)	Nazm
ID:	14341991	School:	School of Medicine
Please identify your relevant funder(s)	Self Funded	Dates of impact: (the date from which the impact has had an effect).	1 st April, 2020
Start date		Funding end date	
Length of extension requested: (up to a maximum of twenty six (26) weeks)	6 months	Programme length (3, 3.5, 4 years) and full time or part time	Full-Time

The primary areas of impact:

Please tick all that are relevant for the ways in which you have been affected by the COVID pandemic and the resulting effect(s) on you and/or your research progression. You can give more details on these impacts, if you wish, on the next page.

Note: We will ask you to explain whether and how you have been able to manage or reduce any of these impacts in Section 2, on p.5.

The ways in which you have been affected (choose all that apply)

- additional/new caring responsibilities
- specific impact resulting from remote working as a result of a disability*
- being at higher risk of coronavirus;
- personal financial impact;
- new illness, accident or hospitalisation, including any mental health problems
- lack of access to mental health support (if needed);
- death or illness of a partner/close relative*
- illness of a relative for whom you are a carer
- impacts related to any protected characteristics*
- an impact on your supervisory team that has affected your supervision or progress
- military or other service (e.g. NHS) that has not already been accommodated
- parental leave that has not already been accommodated
- redeployment to work in another area (e.g. COVID) where this has not already been accommodated.
- other events not on this list that are specifically related to the COVID pandemic (please describe below)

The ways in which your research activity has been affected

(for each that applies, please also indicate whether you have tried to mitigate the effect in this area).

	Was any mitigation possible?
<input checked="" type="checkbox"/> Disruption of planned activities	Yes
<input checked="" type="checkbox"/> Access to facilities/archives/lab/equipment/field sites etc	Yes
<input checked="" type="checkbox"/> Postponement of critical activities where alternatives are not available	No
<input checked="" type="checkbox"/> Access to other research resources including financial impact	No
<input checked="" type="checkbox"/> Ability to achieve a planned outcome/ milestone/deliverable	No
<input type="checkbox"/> Access a research partner, including research-related placements	Yes/No

- | | |
|--|--------|
| <input type="checkbox"/> Inability to devote your usual time to research activity | Yes/No |
| <input type="checkbox"/> *Lack of usual supervisory support for thesis progression/writing | Yes/No |
| <input type="checkbox"/> *Lack of usual supervisory support to help manage risk and mitigate plans | Yes/No |
| <input type="checkbox"/> Other (please describe below) | Yes/No |

*We are collecting this information in order to fully understand how you have been affected. Any information that you give here will only be used as information to inform us and will not be shared with anyone other than the teams considering the cases for extension and collating information for submission to UKRI.

1. DESCRIBING THE IMPACT

(Please complete this section to provide us with more detailed information)

For example you could write a short clear description of the nature of the impacts or problems that you face/have faced, make making this description as brief, and specific as possible. You could also give more detail on the nature of the impacts on your research progress.

We understand that personal and research impacts will be related, so if it helps you could structure the content in line with the impacts you identified in the tick boxes above.

[Section 1](#), additional guidance

The impact **on you**:

The pandemic came with several consequences with regard to my studies and my personal life. This is especially true in terms of conducting Study 1 of the thesis (exploring the impact of stress and work performance among nurses working in the NHS); wherein I was struggling with ethics for over a year (since, July 2019), followed by difficulties recruiting participants for the study. Given that this was a mixed-method design, which required questionnaire completion from approximately 107 nurses and semi-structured interviews from 25-45 nurses, the pandemic caused further delay for commencing the study. The ethics documents/forms were kept on hold as more priority was given to studies which directly focused on COVID-19. This induced immense stress for myself, as I mostly waited in uncertainty for the study to start.

In addition, given the current circumstances, my family's business has not been flourishing and were unable to achieve profit due to lockdown restrictions in place. Thus, it was a crucial time for me and my family to arrange the funds so I could continue with my PhD.

The impact on your research:

Since all three studies in the current PhD project focused on healthcare professionals and healthcare students; recruitment during peak download conditions seemed next to impossible. This could be attributed to the fact that healthcare professionals (and nurses, in particular) are overwhelmed taking care of patients during this difficult time. Therefore, there significant delays in terms of recruiting participants, especially for Study 1. Further, considering that I was unable to physically approach participants (due to lockdown restrictions), I had to rely on the COMMS team for spreading the study flyer and encouraging nurses to participate. This, further caused delay due to back and forth emails; however, I eventually received help and support for commencing the recruitment around September 2020.

2. ACTIONS TAKEN TO MINIMISE THE IMPACT

a) How have you tried to mitigate the risk to your project?

Please **briefly** explain how you are trying to minimise the impact of the situation on your research activities and progress. **With reference to the time between the COVID pandemic, national lockdown and the end of your funded period, if you have not tried to alter your plans to lessen the impact of this on your research progress, it's particularly important to explain here why you have taken this decision.**

For example,

- have you discussed how to do this with your supervisors?
- have you considered different ways to get the research done, such as changing your research plans to alter the order in which you do different elements?
- have you altered your research design, for example to conduct research online, or using other digital resources?
what constraints or barriers did you have to try to remove, modify or overcome?
- **If you have not tried to alter your plans at all, why not?**

Try to show how/whether your work to date already meets some of the University and QAA [Doctoral Outcomes](#), clarify which doctoral outcomes are not currently met and how your plan will enable you to meet these.

up to 200 words

[Section 2](#) additional guidance

My academic supervisors (Dr Elena Nixon, and Dr Holly Blake) have been extremely supportive throughout this difficult journey. They offered helpful suggestions and alternatives to how to recruit the participants for ongoing study. Given the current circumstances of COVID-19, and bearing in mind the extra pressures experienced by the study population, we decided to expand the avenues of recruitment. This allowed me to advertise the study through additional sources; through links to the study flyer posted on social media (e.g. Facebook, Twitter, etc.) and other professional networks/bodies. No changes was made in terms of the study design or methodology; a simple non-substantial minor amendment was required, after which I could go ahead with the recruitment as planned. The study sponsor has also been extremely approachable and supportive for handling any ethics related issue.

Together with my supervisors, we also decided to expand the scope of recruitment to include nurses working in the Nottinghamshire Healthcare Foundation Trust, instead of just focussing on nurses in the Nottingham University Hospitals. We thought this would be a crucial step, as it would help increase the number of study participants.

b) List the aspects of your research plan that you have managed to achieve or progress during the period of impact.

I applied for a non-identifiable/non-substantial amendment form, explaining how I would like to recruit participants for the study using the social media route. The NUH COMMS team responded shortly and offered to help with the distribution of study flyers. Also, I managed to expand the scope of recruitment to include nurses working in the Nottinghamshire Healthcare Foundation Trust, by applying for another non-substantial minor amendment.

3. NEXT STEPS

Please **list** what you have planned to do, in order to continue to lessen the impact on your research **once you are able to** resume the specific activities listed in Section 1

For example, what plans do you have to make sure that elements of your research that you have been unable to undertake due to the University closure restart quickly, or to efficiently complete the work you started during the closure?

up to 200 words

[Section 3](#) additional guidance

Upon receiving the ethics approval, and given the hybrid mode of learning, the data collection of all studies commenced in March 2020. However, the progression was still slow it is as participants (nurses, in particular) were finding it difficult to spare time to participate in the study. Meanwhile, I made use of the social media platforms for approaching participants in the Trust and the NUH; explaining to them the benefits of taking part in this study and hoping to attain more participants. The platform of Microsoft Teams has been extremely beneficial for having regular meetings with my supervisors; and also for conducting interviews across all three studies. Further, I made use of this time for focussing on academic writing; along with attending various training courses offered by the school.

4. EVIDENCE

List any evidence that you have to demonstrate the impact you have detailed in section 1.

Please do not provide the evidence with this form, we will request it from you if we need to see it.

Please also provide here:

- a brief bullet list of the doctoral work completed prior to COVID-19 impact
- a revised research plan **that shows how the requested length of extension is justified by the work that remains to be done to enable you to meet the [Doctoral Outcomes](#)**;
- only if available, a previous work plan for comparison

up to 200 words

Since the beginning of the PhD (2018), I have worked on several areas of the project; starting with literature review, to finalising the research questions and identifying the study population. I finalised the draft of the scoping review (Chapter 2), during this time period. Given that the current thesis consists of three studies; during the lockdown, I started the data collection for the MBCT study (Chapter 5) which, back then, involved three groups of participants. The aim of this project was to evaluate the MBCT programme delivered to the NHS staff, with regard to the participants' wellbeing, and work performance; and to explore the participants' thoughts and perceptions regarding the programme and its service delivery. My role in this study was pivotal in terms of data collection (pre and post questionnaire data, followed by semi-structured interviews). Here, I managed to collect data from 25 participants, with more groups expected in the upcoming MBCT sessions in 2021. This project had formed a crucial part of the thesis, given that the results of the scoping review demonstrated MBCT as the most popular intervention, adopted by various NHS Trusts for improving the psychological wellbeing of the NHS employees.

Alongside, I collected data Study 1, on nurses working in the NUH and Nottinghamshire Healthcare Foundation Trust. Meanwhile, I also submitted the ethics documents for Study 3 (Chapter 6) which involved recruitment of nursing students in the University of Nottingham.

5. CONFIDENTIAL INFORMATION

Please use this section to provide any confidential information that you would like to be considered. Information given here will only be shared with the team assessing your case and returning the information to UKRI for their consideration of your application.

The only confidential information I have already disclosed is the financial impact that my family and I experienced during the pandemic. Therefore, we found ourselves struggling to fund the tuition fee, as the family business was not flourishing.

I confirm that I have completed this form after/in discussion with:
(indicate all those that apply, discussion with only one person is required)

Primary supervisor/other supervisor SPSA School PGR Director
DTP/CDT Director

DTP/CDT Manager DTP/CDT Welfare Officer other member of the Welfare
Team

Researcher Academy Faculty Lead (RAFL, aka Associate Dean of the Graduate School)

[RAFLs](#) are: Prof A Grabowska (MHS), Dr L Bradnock (Arts), Prof R Graham (Science) and Dr N
Porter (Eng).

**I confirm that the information provided in this form is true and request an extension for the
reasons and purposes outlined above.**

University of Nottingham Criteria for award of PhD and other qualifications at Doctoral Level

- (i) the creation and interpretation of new knowledge, through original research or other advanced scholarship, of a quality to satisfy peer review, extend the forefront of the discipline, and merit publication;
- (ii) a systematic acquisition and understanding of a substantial body of knowledge which is at the forefront of an academic discipline or area of professional practice;
- (iii) the general ability to conceptualise, design and implement a project for the generation of new knowledge, applications or understanding at the forefront of the discipline, and to adjust the project design in the light of unforeseen problems;
- (iv) a detailed understanding of applicable techniques for research and advanced academic enquiry.

Typically, holders of the qualification will be able to:

(a) make informed judgements on complex issues in specialist fields, often in the absence of complete data, and be able to communicate their ideas and conclusions clearly and effectively to specialist and non-specialist audiences;

(b) continue to undertake pure and/or applied research and development at an advanced level, contributing substantially to the development of new techniques, ideas, or approaches;

and will have:

(c) the qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and largely autonomous initiative in complex and unpredictable situations, in professional or equivalent environments.

Additional Guidance notes.

What to include:

Section 1, Describing the impact. Please limit the information on this form to impacts that have occurred, and only extend this forwards to future impacts that can be predicted to result from current impacts. If future plans might be disrupted you should show how you plan to adjust the project or use other means to mitigate the risk that this presents. This form will continue to be available on the [R&I sharepoint](#) or through the Graduate School and you can use it if needed to record longer-term or future impacts of COVID-19 on your work over the coming months.

Please do not feel that you have to write a large amount in any of the sections of this form. Your statement of impact can be brief and to the point, please see the sample form also available to view alongside this form.

Please only include research activities that you had planned to undertake during the Lockdown , and the periods immediately before and after this, if relevant. For example, if you had planned a period of research activity at another organisation before or after lockdown that has had to be cancelled, or postponed and cannot be rescheduled within your registered period of study?

Section 16 of the [Postgraduate Regulations](#) describes the usual acceptable and unacceptable circumstances for extensions

16. Acceptable and Unacceptable Circumstances (for extension to Thesis Pending):

The following circumstances may result in an extension being granted:

- Exceptional personal circumstances (eg illness, hospitalisation, accident) if significantly impacting on the writing-up process (or resubmission/minor corrections process relating to paragraph 37 below)
- Maternity
- Paternity
- Death of a close relative, or illness of a close relative where the student is the carer
- Illness or death of a partner
- Prolonged jury service
- Expeditions for sport of national significance (providing the extension is acceptable to the student's funding body)
- Requirement for a student to undertake military service.

The following are examples of circumstances which would not normally warrant an extension:

- Taking up employment during the thesis pending period (or resubmission/minor corrections process relating to paragraph 37 below)
- voluntary service overseas.

Section 2, Action taken. Please list the people with whom you have discussed your research plans and what advice and support you have had in adjusting your activities to mitigate any risk to the progress of your research. You are not obliged to consult or discuss the completion of this form with your supervisors, but we encourage you to do so, before finalising the form. Include if and how your plans have changed as a result of either these discussions or your own planning.

It may be that you feel that you have experienced COVID-related impacts on your research but you have decided not to alter your research plans in any way. If this is the case, we would like to understand the reasons why you have decided that this is the best course of action for you.

Please also detail the things that you have managed to achieve or move forwards under the current conditions, even if you feel that you haven't managed to achieve as much as you planned. Please show how your achievements relate to your previous and future research plans.

Section 3, next steps. It's important to plan both how to deal with a current or emergent situation that disrupts your research, and also how to get back into 'normal' working once you are able to do so. These plans should include how you will get everything back on track, getting started and up and running as quickly as possible. What can/could you be doing now to make sure there are no added delays in resuming 'normal' activity?

If there is anything that is still presenting you with a problem, and that is likely to continue to be a problem once things change, please record it here. Give information on why this might be an ongoing concern and give brief information on discussions you have had to try and solve the problem.

Section 4 Other (please specify below), documents and evidence: We advise you to support your case with evidence wherever possible, but we recognise that there may be circumstances in which evidence is not available to you. Under such circumstances please explain the case in a way that includes the reason why you cannot provide supporting evidence.

Your future/revised plans do not need to be complicated, nor in Gantt chart form unless this is a planning method that you already use. A simple table of milestones, deadlines, and outputs is sufficient.

Privacy and confidentiality: We encourage everyone to discuss the information contained in the form, and its completion with a member of the PGR support staff in the University, particularly with your supervisors. We do however recognise that there may be aspects of this form that you might wish to keep confidential, and so you could alternatively discuss things with your SPSA, your School PGR Director(s), your DTP/CDT Director, Manager or Welfare Officer, or if none of these other supports available to you is appropriate, the Researcher Academy Faculty Lead (Arts - Dr L Bradnock, Science - Prof R Graham, MHS - Prof A Grabowska, Engineering - Dr N Porter, Social Science – TBC).

If the circumstances you describe have an impact on your final thesis assessment, it will probably be necessary to share key information with the examiners/internal assessor. If there is anything that you wish to keep confidential please only include it in section 5 of the form. This will enable sharing of the rest of the information in a way that will let the assessors/examiners understand the impact on you and your research without sharing this confidential information.

Documentation for extension requests, including information on this form will be kept confidential to the staff considering cases for extensions.

For use in thesis assessment: We suggest that you save a copy of this form, with any confidential material redacted, and include it with your submitted thesis, as a record of how you have managed and mitigated the impact of the COVID pandemic on your achievements during this time.

The Researcher Academy Faculty Leads are the Faculty representatives with responsibility for our PGRs. They have oversight of PGR support and activities at Faculty level, and they also work closely with the Graduate School/Researcher Academy. They can advise and support you in completing this form, if there is no-one else that you feel comfortable with, in sharing this information. They should not however be the first person that you approach, as it would be best to discuss this with someone that you know and who knows you, if possible.

The Researcher Academy Faculty Leads are: Prof A Grabowska (MHS), Dr L Bradnock (Arts), Prof R Graham (Science) and Dr N Porter (Eng). There is unfortunately no official RAFL in Social Sciences at the moment, but if you are in Social Sciences please talk to your School PGR Director if needed.