Chronic Low Back Pain: A Representation of Liminality in Illness Identity and Professional Identity

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Abstract

Background: Chronic low back pain (CLBP) accounts for most of the negative consequences associated with low back pain (disability, costs, productivity). Certain risk factors, particularly pain beliefs, facilitate the occurrence and progression of CLBP. Patients' beliefs may be influenced by healthcare professionals' (HCPs') beliefs and the sociocultural context. HCPs' beliefs are critical to the uptake of recommended biopsychosocial approaches for CLBP. However, the beliefs of Ghanaian patients and HCPs are unknown. Therefore, this research explored patients' and HCPs' CLBP beliefs and how these affected CLBP management in Ghana.

Methodology/Methods: A Straussian grounded theory situated within a critical realist philosophy underpinned this research. This facilitated understanding the beliefs, agencies and structures embedded within the management pathways for CLBP in Ghana. Data was collected from physiotherapists, doctors, and patients (n=63) using semi-structured interviews. The study settings were two teaching hospitals in Ghana.

Results: The interpretative frameworks for this study were drawn from Charmaz's (1995) work on illness identity and Tajfel and Turner's (1979) and Turner et al.'s (1987) work on social identity approach (SIA). Identity was the derived core category, with illness identity and professional identity as sub core-categories. This study proposed the illness identity state, liminality (Turner, 1967), to explain the protracted states of rejection and engulfment, and the limited acceptance and enrichment recorded. Rejection, engulfment and liminality were fostered by patients' and HCPs' bio-medical/mechanical beliefs, maladaptive beliefs/behaviours and the psychosocial impact of CLBP. Acceptance was facilitated by patients themselves. Foucault's (1979) theory on panoptic surveillance provided an explanatory framework for the 'power' of HCPs, evidenced in their significant influence on rejection, engulfment and liminality in this study. HCPs' beliefs were mostly influenced by their professional identities (described in terms of paternalistic and bio-medical/mechanical care). Socialization at work was identified as the major intragroup dynamic within doctors and physiotherapists, influencing their practices. Intergroup dynamics identified between doctors and physiotherapists were medical dominance (explored using Freidson 1970), the referral pattern of 'specialist before physiotherapist' and limited appreciation of the roles of other HCPs.

Conclusion: The dominant maladaptive illness identity states, bio-medical/mechanical framework and limited collaboration identified in this study highlights the need for evidence-based practice, interprofessional working, biopsychosocial model, patient empowerment and increased professional autonomy for physiotherapists.

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List of Abbreviations and Acronyms

LBP	Low Back Pain
CLBP	Chronic Low Back Pain
LMICs	Low to Middle Income Countries
SSA	Sub-Saharan Africa
FABs	Fear-Avoidance Beliefs
HCPs	Healthcare Professionals
GPs	General Practitioners
NHIS	National Health Insurance Scheme
SBAHS	School of Biomedical and Allied Health Sciences
GPA	Ghana Physiotherapy Association
UHAS	University of Health and Allied Sciences
MoH	Ministry of Ghana
GHS	Ghana Health Service
CPGs	Clinical Practice Guidelines
JBI	Joanna Briggs Institute
PCC	Population, Context, Concept
MSDs	Musculoskeletal Disorders
GBD	Global Burden of Disease
BMI	Body Mass Index
ICF	International Classification of Function
IASP	International Association for the Study of Pain
NICE	National Institute for Health and Clinical Excellence
NSAIDs	Non-Steroidal Anti-Inflammatory Drugs
STG	Standard Treatment Guideline
RCTs	Randomized Controlled Trials
SR	Systematic Review
PABS	Pain Attitude and Beliefs Scale
Back-PAQ	Back Pain Attitudes Questionnaire
BBQ	Back Beliefs Questionnaire
BPS	Biopsychosocial
CR	Critical Realism
GT	Grounded Theory
PIS	Participant Information Sheet
UoN	University of Nottingham
MRI	Magnetic Resonance Imaging
SIT	Social Identity Theory
SCT	Self-Categorization Theory

SIA	Social Identity Approach
EBP	Evidence-Based Practice
I/T	Indeterminacy/Technicality
WHO	World Health Organization
IPE	Interprofessional Education
MDT	Multidisciplinary Team
PPI	Patient-Public Involvement

Published Papers and Conference Presentations

Published Papers

Ahenkorah, J, Moffatt, F, Diver, C, Ampiah, PKA (2019) Chronic Low Back Pain Beliefs and Practices in Africa: Time for a Re-think? **Musculoskeletal Care** 17(4):376-381.

Conference Presentations

U21 Virtual Doctoral Health Research Forum, August 25, 2020 (A Socially Prescribed Professional Identity Influences the CLBP Beliefs of Healthcare Professionals in Ghana).

American Congress of Rehabilitation Medicine (ACRM) Virtual Conference. October 21-24, 2020 ("It's a Mechanical Pain": A Grounded Theory Approach to Understanding how Pain Beliefs of Healthcare Professionals Influence Chronic Low Back Pain Management in Ghana).

IASP Virtual Series on Pain and Expo! September 2020-March 2021 (Understanding how Pain Beliefs of Patients Influence CLBP Management in Ghana).

IASP 2021 Virtual World Congress on Pain. June 9-June 18, 2021. (Understanding how Pain Beliefs of Patients Influence CLBP Management in Ghana).

Research Festival: School of Health Sciences, University of Nottingham July 14-17, 2021. (Liminality in Illness Identity: An exploration of CLBP beliefs)

Chapter 1: Introduction

1.0 Background

Low Back Pain (LBP) is defined as pain/discomfort in the posterior aspect of the back from the 12th rib to the gluteal folds with or without referral to the lower limbs (Hoy et al., 2014). LBP is the leading cause of disability worldwide. It accounts for 60.1 million disability adjusted life years worldwide (Hoy, March, Brooks et al., 2014). LBP incurs huge costs arising from productivity losses and associated healthcare (Dagenais, Caro, Haldeman, 2008). The global burden of disease study (2010) indicated a 54% rise in the prevalence of LBP globally, from 1990, with the highest rise observed in low-to-middle income countries (LMICs), of which sub-Saharan Africa (SSA) belongs (Hoy et al., 2014). The annual prevalence of LBP in Africa is 57% (Morris, Daniels, Ganguli, Louw, 2018). According to a SAGE study, prevalence of LBP in Ghanaian adults >50years is 41% (Williams, Peltzer, Yawson, 2015). LBP that persists beyond 3months is termed chronic low back pain (CLBP) (Rodrigo, AnnaClaudia, Niece, 2015). CLBP forms a smaller percentage of LBP with an estimated global prevalence of 19.6% (Rodrigo et al., 2015). However, most of the negative effects (disability and costs) resulting from LBP are from the percentage of patients experiencing CLBP due to its multifactorial contributors (Sullivan, 2012).

CLBP beliefs are important psychosocial factors that affect the course and management of CLBP (Gardener, Refshauge, Smith et al., 2017). Furthermore, HCPs' LBP beliefs affect patients' beliefs (Darlow, Perry, Stanley et al., 2014). Systematic reviews (SRs) assessing the effect of fear-avoidance beliefs (FABs) on LBP outcomes (Wertli, Rasmussen-Barr, Held et al., 2014a; Wertli, et al., 2014b) have indicated that FABs and catastrophizing negatively affect pain, disability and work-related outcomes. Conversely, self-efficacy beliefs are associated with positive treatment outcomes (Jackson, Wang, Wang, Fan, 2014). However, there is a paucity of literature assessing the beliefs and practices related to CLBP in African contexts, with no study assessing HCPs' beliefs (Ahenkorah, Moffatt, Diver, Ampiah, 2019)[1]. In particular, the specific psychosocial components that may be critical in effective CLBP management in Ghana remain unexplored. Studies conducted in African countries (Ghana, Nigeria and South Africa) suggest that the management of CLBP involves the use of passive therapies linked to a biomedical approach to care (Oppong-Yeboah and May, 2014; Igwesi-Chidobe, Kitchen, Sorinola, Godfrey 2017; Major-Helsloot, Crous, Grimmer-Somers, Louw, 2014). A biomedical model of care for CLBP management however results in only short-term

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[1] The article by Ahenkorah et al., 2019, was published from part of the literature review section of this thesis.

benefits and fosters patients’ dependency on the healthcare system (Oliveira, Maher, Pinto et al., 2018).

Findings from studies conducted around CLBP in African countries (Oppong-Yeboah and May, 2014, Major-Helsloot et al., 2017) reflect some of the initial triggers that motivated the principal researcher towards CLBP research. In a bid to situate this study within relevant contexts, the personal reflections of the researcher are discussed in the following section. This chapter also describes the research context; the relevance of the study is then discussed and ends with a description of the content of the chapters contained in this thesis.

1.1 Personal Reflections/Motivations

Having graduated with a BSC in Physiotherapy in 2010, I started working at a teaching hospital in Ghana, where I developed interest in musculoskeletal physiotherapy. Treating patients with musculoskeletal conditions, I primarily used electrotherapy, heat therapy and exercises (based on knowledge acquired from training and what pertained where I worked). I soon realized that there were inherent challenges with patient outcomes and the caseload since patient discharge was not commensurate with the rate of patients’ referral for physiotherapy. This translated into repeated re-referrals to doctors to sanction more physiotherapy sessions covered by the National Health Insurance Scheme (NHIS) and increasing personal costs for patients. Sometimes, the tussle was perceptible: patients feeling that their recovery was not optimal and therapists having to ensure that the resources met patients’ demand by discharging patients who had received physiotherapy over a considerable period and had made progress to make room for new ones. I noticed with worry and dissatisfaction that the trend described above was particularly noticeable in patients with CLBP. Another trend I was frustrated with was the timing of patients reporting for physiotherapy, which was often late in their care pathway. I wondered why physiotherapy appeared to be a late point of call and why most referrals came from neurosurgery/orthopaedic surgery.

My passion for physiotherapy and patient care stirred a personal desire for a potential solution. I believed a positive step was to gain specialist and evidence-based knowledge around musculoskeletal care. Therefore, I enrolled onto a masters in physiotherapy programme at a UK University, where I was exposed to varied treatment approaches, including the biopsychosocial approach to care. I was poised for change. However, through interactions with colleagues, lecturers, and existing literature, I realized that to effect change, understanding the contextual ‘structures and agencies’ underpinning the processes for CLBP management in Ghana was crucial. In particular, the literature exposed the magnitude of the paucity of foundational knowledge around CLBP and its management in Africa, specifically HCPs' and patients' CLBP beliefs/management.

1.2 Research Context

1.2.1 Demography

Ghana is a West-African country and is part of sub-Saharan Africa (SSA) (World Bank, 2019). Ghana is made up of sixteen (16) regions, with Accra in the Greater-Accra region as its capital (Figure 1). With a population growth rate of 2.5%, the population of Ghana is estimated to be around 31million (World Bank, 2019). The population of Ghana consists of 50.6% males and 49.3% females, and is largely youthful, with a life expectancy of 66 years (World Bank, 2019). Ghana is a multilingual country, with English as its Lingua Franca and Akan (Twi) being the most widely spoken local language (The Bureau of National Languages, 2013). Ghana is a lower middle-income country (World Bank, 2011); a largely religious country, with the majority (>70%) being Christians (Ghana Statistical Services (2013).

Figure 1: Map of Ghana

1.2.2 The Historical Evolution of the Healthcare Professions in Ghana

The history of healthcare delivery in Ghana is best described in terms of pre/post colonialism. In precolonial era, traditional forms of medicine were the norm (Twumasi, 1981). Therefore, herbalists, traditional priests and clerics were the main healthcare providers (Twumasi, 1981). In 1868, the influx of British colonialists into Ghana generated the need for formalized health institutions. Therefore, a medical department consisting of three branches (a medical department (hospitals, clinics), laboratory department and sanitary department) was established in urban areas and areas habited by the British (Twumasi, 1981). The medical department expanded and became the major form of healthcare provision in the Goldcoast (now Ghana). However, hospitals and clinics were mostly situated in urban areas (Twumasi, 1981), and to date rural areas remain poorly served by medical services (Mariwah, 2021). Therefore, traditional medicine practices continue to be popular in rural areas and efforts to formalize traditional medicine through university training and research have only commenced in Ghana in recent times (Krah, Kruijf and Ragno, 2018).

The medical profession in Ghana can be traced to 1868, with formalized medical training of doctors in a Ghanaian University commencing in 1962 (Dumett, 1999). Conversely, some Allied Health Professions in Ghana (Physiotherapy, Medical Laboratory Sciences, Radiography) began degree training programs in 2001 (SBAHS, 2021). Medicine and the allied health professionals are regulated by different regulatory bodies, under the health professions regulatory Act 2013, Act (825) (Ghana Assembly Press, 2013b).

Physiotherapy was started in Ghana in the 1940s by a British female physiotherapist (GPA, 2021). Physiotherapy in Ghana was gradually expanded through recruitment of other Ghanaian HCPs (e.g. nurses, laboratory technicians) for physiotherapy training in the UK, Romania and the Netherlands, and more recently (2001 and 2012) training of physiotherapists in two Universities in Ghana (SBAHS, 2021; UHAS, 2021). Physiotherapy departments can be found in teaching, regional, and some district hospitals, and private facilities (GPA, 2021). Physiotherapy is an autonomous profession in Ghana; however, physiotherapy is mainly dependent on doctors' referral, since physiotherapy is not practiced as first-point-of contact in Ghana (GPA, 2021).

1.2.3 The Ghanaian Healthcare System Now

Ghana's healthcare system is overseen by the Ministry of Health (MoH) (Aseweh Abor et al., 2008). The MoH administers its mandate mainly through public and private sector institutions (Aseweh Abor, Abekah-Nkrumah Abor, 2008). Although the MoH is mandated to have oversight over traditional and alternative medicine practices, this has not been adequately institutionalized and regularized (Krah, Kruijf and Ragno, 2018). The Ghana Health Service (GHS) is the major public sector institution responsible for decentralization of healthcare administration and services of the MoH. Therefore, the GHS manages the regional and district hospitals, polyclinics, and health centers by decentralized regional and district administrative offices (Aseweh Abor et al., 2008). Furthermore, the five teaching hospitals in Ghana are public sector hospitals that have autonomous regulatory boards and are directly supervised by the MoH (Aseweh Abor et al., 2006). A last category of public sector hospitals named quasi government hospitals are hospitals that are linked with institutions that perform other primary functions (e.g. Police hospital, Ghana Atomic Energy Hospital) (Aseweh Abor et al., 2008). The private sector is made up of mission-based hospitals and private hospitals and forms 40% of Ghana's hospitals and clinics. Figure 2 provides a summary of Ghana's healthcare structure.

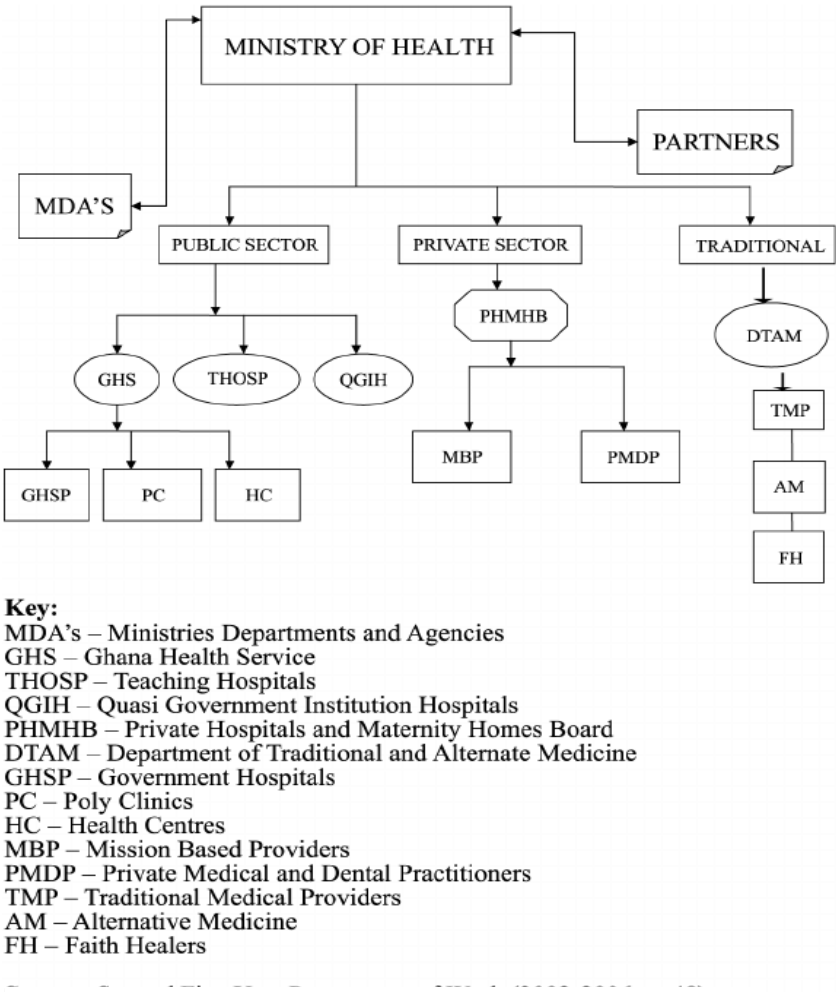

Figure 2: Organogram of the Ministry of Health, Ghana
Source: Aseweh Abor, Abekah-Nkrumah and Abor,2008

The MoH is headed by a Minister and the GHS headed by a director-general (doctor) and sixteen regional directors (doctors) (MoH, 2021). The teaching hospitals board structure constitute a director each for pharmacy, nursing, finance and administration, with no director of allied health professions (CCTH, 2021) (Figure 3). The GHS includes high ranked allied professions (e.g. chief physiotherapist) in the organizational/managerial structure at the headquarters in Accra. However, it does not have a designated directorate for rehabilitation/allied health within its directorates structure (GHS, 2021).

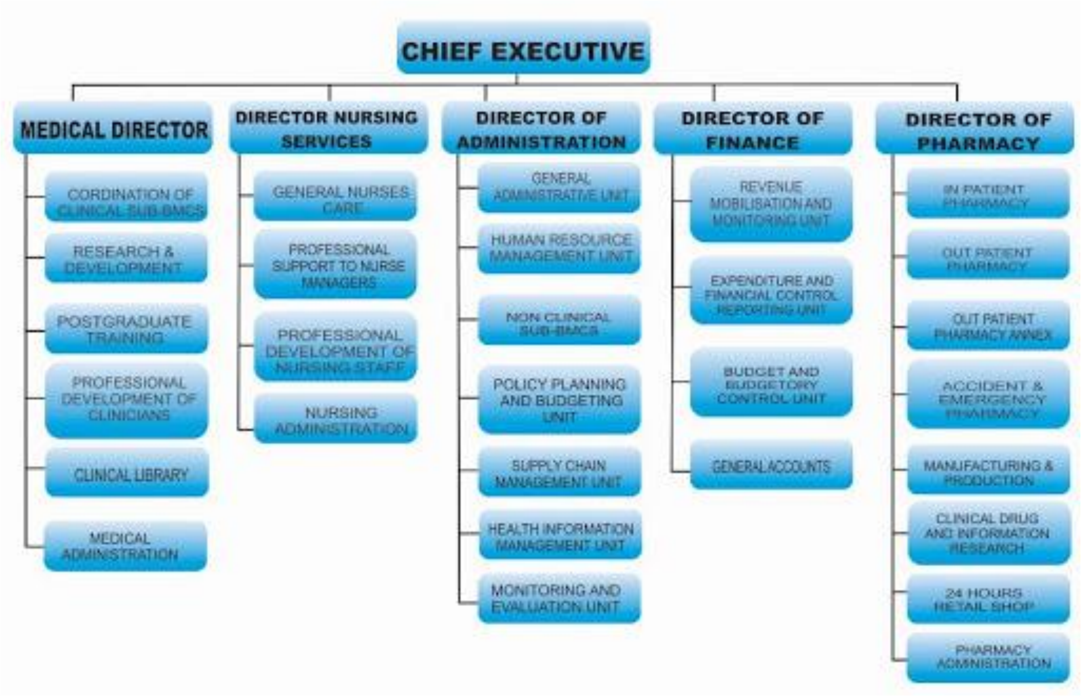

Figure 3: Organogram of Teaching Hospitals in Ghana
Source: ccthghana.org/

Healthcare in Ghana is largely funded by the National Health Insurance Scheme (NHIS), though this does not exclusively cover all conditions (Wang, Otoo, Dsane-Selby, 2017). The NHIS requires payment of a yearly token for annual renewal to maintain membership and benefits of the NHIS (NHIS, 2021). The NHIS caters for outpatient and in-patient physiotherapy services (NHIS, 2021).

1.3 Relevance of the Study

CLBP poses significant burden to individuals, families and healthcare systems of developing countries, including Ghana (Morris et al., 2018; Williams, Peltzer, Yawson, 2015). Utilization of evidence-based approaches, such as biopsychosocial approaches, are potentially efficient and cost-effective, although context-specific implementation is mostly required (Pope, 2003). The adoption and successful implementation of evidence-based approaches in CLBP management depend on the expertise of healthcare professionals (HCPs) and are influenced by LBP beliefs of HCPs and patients (Nijs, Russel, vanWilgen, Koke, 2013).

This study provides contextual understandings of beliefs and management practices utilized in CLBP care in Ghana. These understandings may serve as foundations for change implementation or the adoption of more effective strategies for CLBP management. Furthermore, CLBP is a long-term condition, requiring long-term adjustments and patients' commitment (Sullivan, 2012). Therefore, understanding patients' beliefs and coping strategies may provide a better understanding of the factors that need to be considered to foster feasible long-term goals and coping to reduce the adverse impact of CLBP on the patient and other stakeholders involved. The next section describes the structure of the chapters contained in this thesis.

1.4 Thesis Structure

This thesis contains eight (8) chapters. The structure of chapters 2 to 8 are presented below.

Chapter 2: Literature Review

This chapter, using narrative review methods, discusses the burden of CLBP globally, making comparisons with the burden of LBP in Africa and Ghana. The risk-factors of LBP are highlighted. The role of psychosocial factors in CLBP (risk-factors and consequences) is also discussed. Additionally, CLBP management practices in developed countries are appraised and compared to the Ghanaian CLBP management pathways; thus, generating discussions around biopsychosocial versus biomedical approaches to CLBP care. The remaining sections of the chapter review studies around patients' and HCPs' CLBP beliefs to facilitate an understanding of the concept of CLBP beliefs and highlight the gap in the literature with respect to CLBP beliefs in the Ghanaian context. The aims and objectives of the study are then enumerated to set the scene for the study.

Chapter 3: Methodology and Methods

Chapter 3 discusses the methodological underpinnings of this research and describes the methods and considerations that affected the conduct and analysis of the research. Therefore, it appraises the use of qualitative methodology, critical realism and semi-structured interviews and the impact of the researcher's position on data collection and analysis. It also discusses ethical considerations that applied to the research.

Chapter 4: Transitioning from Biopsychosocial to Biomedical Beliefs: Patients' Beliefs Regarding CLBP and its Management

Chapters 4 to 7 present the findings of this study. Chapter 4 highlights how the beliefs of patients evolved from the inception of CLBP, through healthcare provision and engagement within the sociocultural context. Therefore, it highlights the influences of the stages of interactions when chronic illness begins: the self, HCPs, the sociocultural environment. The limitations with physiotherapy as an option for CLBP care, as indicated by patients, are also discussed. A discussion of the patients' data in relation to the extant literature is also contained in this chapter.

Chapter 5: Bio-medical/mechanical Perspectives, Sociocultural Perspectives and Gatekeeping: Doctors' Beliefs Regarding CLBP and its Management

Doctors' beliefs regarding the course and prognosis of CLBP are discussed in this chapter. Additionally, the beliefs underpinning doctors' management choices and coping advice are discussed. This chapter reveals the gatekeeping role of doctors, and the influence of this on CLBP management as it pertains in Ghana. The influence of the sociocultural environment and the healthcare environment on doctors' beliefs and practices is also revealed.

Chapter 6: Bio-mechanical/medical Perspectives, Sociocultural Perspectives and the Role of Doctors: Physiotherapists' Beliefs Regarding CLBP and its Management

This chapter discusses physiotherapists' beliefs regarding CLBP, its causes, prognosis, coping and management practices. It also discusses the influence of the healthcare environment and sociocultural environment. It argues the limitation with physiotherapy referrals from doctors. A discussion of the physiotherapists' and doctors' data in relation to the extant literature is presented in this chapter.

Chapter 7: Illness and Professional Identity: A Composite of Power, Group and Sociocultural Dynamics

A synthesis of the patients', physiotherapists' and doctors' data is presented in this chapter. This chapter illustrates the central mechanisms driving the participants' beliefs. It argues that how patients and HCPs formulate their illness and professional identities respectively delineates the beliefs attached to CLBP, its management and coping practices. Illness identity is discussed using Charmaz's (1995) work on chronic illness as an interpretative lens. The 'powerful' role of HCPs is discussed using the Foucauldian lens of power (Foucault, 1979). The role of inter/intra-group dynamics in the practices and beliefs of the HCPs is represented in this chapter using social identity approach as an interpretative lens (Tajfel and Turner, 1979, Turner et al., 1987). Furthermore, the ‘powerful’ role of doctors is interpreted using the concept of medical dominance (Freidson, 1970). Therefore, this chapter presents a theory, depicting the CLBP beliefs and practices of patients, physiotherapists and doctors, and the underlying mechanisms.

Chapter 8: Discussion and Conclusion

Chapter 8 presents a summary of the findings of the study discussed in chapters 4 to 7. This facilitates discussion of concepts that may help address the mechanisms underlying the maladaptive beliefs and practices underpinning CLBP management in Ghana. Therefore, this chapter argues the need for evidence-based and biopsychosocial interventions, professional autonomy, interprofessional working, health literacy, patient empowerment and autonomy. Furthermore, harnessing the social identity approach as a framework for change implementation is discussed. The chapter ends with recommendations for practice, training, policy and research.

Chapter 2: Literature Review

2.0 Introduction

This section provides a narrative review around the research area: LBP, the biopsychosocial model and CLBP beliefs. A narrative review allows for critical, theoretical, contextual and methodological discussions around a topic/theme to identify current state and gaps (Terezinha, 2007). It is useful where the use of a single topic will produce inadequate information and/or result in a loss of the "narrative thread" that brings together the holistic picture related to a particular concept (Collins and Fauser, 2005).

The objectives of this review are to:

1. Appraise the burden of LBP globally, in Africa and Ghana.
2. Appraise the causes of LBP, especially the precipitators of LBP to CLBP
3. Understand the role and impact of psychosocial factors in CLBP
4. Highlight the current CLBP management pathways in developed countries and Ghana
5. Appraise CLBP beliefs among patients and HCPs
6. Identify the current gap in literature as regards CLBP management and beliefs in Ghana.

2.1 Narrative Review Methods

Articles used within this narrative review were derived from a systematic search of the literature using five databases: Pubmed, Embase, CINAHL Plus, AMED, and Web of Science. All searches were done from 2007 to June 2021 to allow for coverage of African studies and inclusion of current literature. Due to the lack of a single identifiable question for the review, five different searches were developed based on the keywords derived from the review objectives. This allowed for identification of relevant articles in each sub-section. Keywords were generated based on the 'PCC' concept; Population, Concept and Context (JBI, 2015). Synonyms of keywords (Figure 4) were derived and combined using each database specific strategy. Details of how the various searches were refined are presented (Appendix 1: Figures 19-23). In all, 53 research articles (24 systematic reviews and 29 primary studies) and 2 clinical practice guidelines (CPGs) were used in this review (Appendix 2: Figures 24-30).

Terms: Burden/Impact of LBP/CLBP	**Justification**
1.Burden (limited to title/keywords) Combinations: Prevalence, incidence, cost, occurrence, loss, impact 2. Psychosocial Impact/Effect Combinations: psychological impact/effect, social impact/effect, experiences, coping, loss, living	These words ensured that studies relating to prevalence, costs, psychosocial or any burden related to LBP was captured
Low Back Pain (limited to title/keywords) Combinations: LBP, CLBP, Chronic Low Back Pain, Lumbar spine pain, Musculoskeletal disorders, MSDs, MSK	This ensured studies related to LBP/CLBP were captured. Inclusion of MSDs allowed for identification of LBP prevalence through studies that identified prevalence of MSDs including LBP.
Global: *Prevalence search only* (limited to abstract/topic) Combinations: Developing, Western, developed countries, International, low to middle income countries, LMICs, Africa, Ghana	These allowed identification of prevalence, impact and experiences studies across various clusters so comparisons could be made with African and Ghanaian figures.
Separate searches were conducted for prevalence/costs and psychosocial impact (Figures 19 & 21)	
Terms: Causes/Risk-factors of LBP/CLBP	**Justification**
Causes (limited to abstract/topic) Combinations: risk factors or contributors	To enhance identification of causes
Low Back Pain (limited to title/keywords) Combinations: LBP, CLBP, Chronic Low Back Pain, Lumbar spine pain, chronic lumbar spine pain, Musculoskeletal disorders, MSDs, MSK	This ensured studies related to LBP/CLBP were captured. Inclusion of MSDs allowed for identification of risk factors through studies that identified risk factors of MSDs including LBP.
Global (limited to abstract/topic) Combinations: Developing, Western, developed countries, International, low to middle income countries, LMICs, Africa, Ghana	These allowed identification of risk factors studies across various clusters so comparisons could be made with African and Ghanaian figures.
Terms: Effectiveness of BPS	**Justification**
Effectiveness (limited to abstract/topic) Combinations: effect, efficacy	To enhance identification of effectiveness studies
Biopsychosocial (limited to abstract/topic) Combinations: BPS, biopsychosocial model/treatment/management	These ensured that studies related only to BPS interventions were identified
Low Back Pain (limited to abstract) Combinations: LBP, CLBP, Chronic Low Back Pain, Lumbar spine pain, chronic lumbar spine pain	These ensured studies were limited to CLBP/LBP only
Terms: Patient and HCPs beliefs	**Justification**
Patients or Healthcare Professionals(Title/Keyword) Combinations: Population, HCPs, physiotherapists, physical therapists, doctors, general practitioners, GP, PT, physicians	These allowed for identification of studies that assessed beliefs among the relevant population under study.
Beliefs (limited to Abstract/Topic) Combinations: Appraisals, culture, perception	Beliefs are one of the main focus of the narrative review
Low back Pain (limited to title/keyword) Combinations: LBP, CLBP, chronic low back pain, Lumbar spine pain, chronic lumbar spine pain	These ensured that health beliefs relating to only LBP/CLBP were identified.
Management Guidelines and Pathways: These were searched using basic search since specific national guidelines were sought. *Boolean operators and phrases were used across all databases searched.* **Keywords were limited to abstract/topic when a variety of ideas could be used to represent the keyword**	

Figure 4: Search Terms

2.2 Burden of LBP

Ten studies (Hoy et al., 2014, Wang, Naghavi, Allen, et al., 2016, Rodrigo et al., 2015, Dagenais et al., 2008, Fejer and Ruhe, 2012, Morris et al., 2018, William et al., 2015, Miller, Hassan, Kirk, et al., 2019, Bio, Sadhra, Jackson et al., 2007, Abledu, Offei, Abledu, 2014) that assessed the burden of LBP globally, in Africa or Ghana were included in this section (Figures 19 & 24).

2.2.1 Global Prevalence and Burden

Epidemiological studies conducted globally indicate that LBP is widespread (Hoy et al., 2014). The point prevalence of LBP is 9.4% (95% CI 9.0-9.8) (Murray, Ortblad, Guinovart et al., 2014) and LBP prevalence increases until the age of 80 (Hoy et al., 2014). The global burden of disease (GBD) study 2010 ranked LBP as the leading cause of disability worldwide accounting for 10% of years lived with disability (Hoy et al., 2014). In terms of overall disease burden, LBP ranked sixth after ischaemic heart disease, lower respiratory infections, stroke, diarrheal diseases and HIV/AIDs (Hoy et al., 2014). To assess the global burden of LBP, Hoy et al., (2014) conducted a systematic review of 117 studies from 85 countries (including four African countries: Egypt, South-Africa, Sudan, Nigeria). Only population-based studies, studies that assessed prevalence of LBP for ≤1 year and relevant unpublished data were included. Risk of bias of studies was assessed with sensitivity analysis conducted after excluding low risk studies. Research methods utilized were therefore rigorous, strengthening the reliability of the findings.

A more recent GBD study (1990-2015) involving the study of 315 diseases and injuries in 194 countries revealed a rise in the burden of LBP. LBP ranked 4th in terms of overall disease burden (Wang et al., 2016). Methods used were rigorous and comparable to the 2010 GBD study. Prevalence rates for CLBP derived from a systematic review (Rodrigo et al., 2015) revealed that global prevalence of CLBP among individuals aged 20 to 59 years was 19.6%. Prevalence was derived from 28 population-based studies from twelve countries, including one African country (Nigeria). However, half of the included studies had inadequate response rates (<70%), which might have influenced generated prevalence figures.

In addition to the substantial effect of CLBP on disability, CLBP accounts for huge economic burden worldwide. A systematic review (Dagenais et al., 2008) pooled 27 studies from USA, Australia and Europe that assessed the healthcare and indirect costs of LBP. Dagenais et al., (2008) revealed that work productivity loss (indirect costs) was the highest contributor to costs incurred from LBP. For instance, it was estimated that the UK incurred £1.6 billion and £10.7 billion annually as direct and indirect costs respectively from LBP. Within this corpus of literature concerning global burden of LBP, there is limited consideration of African countries, due to limited population-based African studies. This limitation may be due to the skewing of health research/funding within Africa towards infectious diseases (malaria, tuberculosis and HIV/AIDS). These conditions have been described as the most funded health conditions in Africa by a systematic database for mapping biomedical research funding (Adam et al., 2020). Additionally, the reports indicate that funding for non-communicable diseases mostly focused on cancer, mental health, and diabetes (Adam et al., 2020). Consequently, global prevalence rates may not accurately represent the African situation. The following paragraph considers LBP in Africa.

2.2.2 Prevalence of LBP in Africa and Ghana

LBP, in the past has been assumed a problem of developed nations (Louw, Morris, Grimmer-Somers et al., 2007). LBP was however recorded as the 2nd cause of disability and the 13th ranked overall burden in West Africa (Hoy et al., 2014). A SR (Morris et al., 2018) assessed the prevalence of LBP in Africa. Sixty-five studies from fifteen African countries were pooled for the review. Most of the studies were from Nigeria (47%) and South-Africa (25%), with only two studies from Ghana included. Most included studies utilized workers as the study population (58%). Risk of bias was reliably assessed, and data extraction completed using two reviewers. Results indicated that the point, annual and life-time prevalence of LBP in Africa was 39%, 57%, 47%. These prevalence figures were higher than global estimates of the burden of LBP, suggesting a significant burden of LBP in Africa. However, due to the inclusion of studies that were not population-based, the extent to which these figures reflect true prevalence rates in Africa is questionable. A further confounding factor may be the varied economies and health priorities in Africa. For example, South-Africa is one of the highest HIV endemic countries in Africa, and HIV has a negative impact on the musculoskeletal system (Hamill, Pettifor, Ward et al., 2017). Consequently, general extrapolation of prevalence figures derived from Morris et al., (2018) may be problematic. The figures derived do however suggest that prevalence of LBP in Africa is potentially increasing. This rising trend could be attributed to increasing attention given to musculoskeletal disorders (MSDs) in Africa, industrialization and technological advances in Africa and increased recognition of LBP as an ailment (Morris et al., 2018). This is evidenced in the increasing research on MSDs especially among workers. Increased recognition of LBP as an ailment may be occasioned by influence of western culture (Lin, Sullivan, Coffin et al., 2013). Also, conditions such as nutritional deficiencies and HIV/AIDs contribute to LBP prevalence in Africa (William et al., 2015).

A SAGE study conducted among the elderly population (50+ years) of six LMICs (Ghana, Mexico, India, Russia, South-Africa and China) revealed a LBP prevalence of 41% and 39% in Ghana and South-Africa respectively (Williams et al., 2015). A weighted sample of 29,807 from the six countries and random sampling methods were used. In comparison, a systematic review of musculoskeletal pain among elderly populations in developed countries reported back pain as the commonest musculoskeletal pain (29%) (Fejer and Ruhe, 2012). The different prevalence rates recorded for the elderly Ghanaians and elderly population in developed nations could be attributed to sample variations in the SAGE study (adults 50+years) and the SR (adults 60+years). Furthermore, although 85 articles were included in the SR, data was extracted from only one database and by one author. The possibility of missing studies is high and challenges the rigor of the SR. Nonetheless, social and health support systems differ in developed and developing countries and might contribute to prevalence variations (Morris et al., 2018). A recent study by Miller et al., (2019) assessed the prevalence of LBP among adults (>18years) visiting five mobile clinics in rural parts of the Volta region of Ghana. A response rate of 99.7% (682 participants) was recorded. The study found a comparatively low point prevalence (15.1%) when compared to other global, African and Ghanaian studies, although most of the individuals were involved in agriculture (an occupation considered high-risk). The study is limited by a lack of standardized questioning when local interpreters were used. The lack of random sampling techniques limits the representativeness of the study. The study findings suggested that about 75% of those who reported current LBP, had moderate to very severe disability. This highlights the possibility of the impact of interpreter bias on participants’ responses, hence skewing prevalence rates towards moderate to severe back pain.

Few studies have explored the prevalence of LBP among Ghanaian workers. A study conducted amongst taxi-drivers in Accra revealed LBP as the highest MSD (34.3%) (Abledu, Offei and Abledu, 2014). This study has limited generalizability due to lack of random sampling techniques and its focus on workers. Another study assessing prevalence of LBP among Ghanaian miners established a prevalence of 67% (Bio et al., 2007). Miners are a high-risk group for LBP hence high prevalence is expected (Hoy et al., 2014). A systematic sampling technique was used, sample size was adequate, and standardized data collection tools used, increasing confidence in the study findings.

2.2.3 CLBP in Africa

CLBP is the most challenging form of LBP in terms of management and impact on the individual and society (Sullivan, 2012). However, no African study has distinctly estimated the prevalence/burden of CLBP. The limited studies around CLBP/LBP prevalence in Ghana could be attributed to limited skilled/well-trained human resource within African contexts (including Ghana) to lead research within the area (Kasprowicz et al., 2020) and/or limited attention given to MSDs within the African health research domain (Louw et al., 2007). CLBP was reported as the commonest LBP seen by physiotherapists in Ghana (Oppong-Yeboah and May, 2014). Chronicity in LBP may be due to beliefs, health literacy and inaccessibility to healthcare systems-a major problem in Africa. Hence patients only report ailments when they persist or become unbearable (Williams et al., 2015). Although developed nations have better and more accessible healthcare systems, CLBP is common in developed countries (Rodrigo et al., 2015) suggesting CLBP may result from factors that are beyond infrastructure.

2.3 Risk Factors of LBP/CLBP

LBP/CLBP risk factors may be modifiable or non-modifiable (Ferreira et al., 2013). Non-modifiable risk factors for LBP include socio-demographic factors (e.g., being female) and having a family history of LBP (Ferreira et al., 2013, Hoy et al., 2014). Modifiable risk-factors for LBP include comorbidities, biophysical and psychosocial factors (Hartvigsen et al., 2018). Biophysical risk factors include physical inactivity, smoking and performing manually intensive jobs (e.g., agriculture) (Igwesi-Chidobe et al., 2017, Ramond, Bouton, Richard, et al., 2011, Driscoll, Jacklyn, Orchard et al., 2014). Psychosocial factors for CLBP include LBP beliefs, depression, low social support, low educational levels, and anxiety (Ramond et al., 2011). Psychosocial risk factors are particularly important in the transition of LBP to CLBP, and they affect CLBP outcomes (Sullivan et al., 2012). The knowledge and beliefs concerning the risk-factors of CLBP are important drivers for the prevention and management of LBP/CLBP (Hartvigsen et al., 2018). Three studies on prevalence of LBP (Hoy et al., 2014, Morris et al., 2018, Williams et al., 2015) and four studies on risk factors of LBP/CLBP (Igwesi-Chidobe et al., 2017, Ramond, Bouton, Richard, et al., 2011, Stubbs, Koyanagi, Thompson, et al., 2016, Driscoll, Jacklyn, Orchard et al., 2014, Alhowimel, Alotaibi, Alenazi et al., 2021 and Alhowimel et al., 2018) were included in this section (Figures 20 & 25). These studies explain the non-modifiable and modifiable risk-factors (comorbidities, biophysical and psychosocial) identified globally and in African contexts.

2.3.1 Socio-demographic factors

Globally, in Africa and Ghana, LBP is reported to increase with age and being female (Hoy et al., 2014; Morris et al., 2018; Williams et al., 2015). Degenerative changes associated with ageing are possible reasons for the association between age and LBP (Meucci et al., 2013). Increased prevalence in females is attributed to menopause, osteoporosis, pregnancy and having to combine domestic and occupational tasks (Meucci et al., 2013). High body mass index (BMI) has also been associated with the onset of LBP (Webb, Brammah, Lunt et al., 2003). In the systematic review conducted in Africa (Morris et al., 2018) and the SAGE study (Williams et al., 2015) however, BMI was not reported as a risk factor, and this may not have been thoroughly explored within Africa and Ghana.

2.3.2 Other Risk Factors

Smoking has been identified as a risk factor for LBP (Meucci, Fassa, Paniz et al., 2013). Nicotine found in cigarettes decreases blood perfusion to the intervertebral discs and increases pro-inflammatory cytokines which heightens pain signals to the central nervous system (Meucci et al., 2013). Co-morbidity, physical inactivity and previous history of LBP tend to increase the occurrence of LBP (Williams et al., 2015; Hoy, Brooks, Blyth, Buchbinder, 2010; Chen, Liu, Cook et al., 2009). The next section discusses psychosocial risk-factors and the psychosocial impact of CLBP. 2.3.3 The Role of Psychosocial Factors

The role of psychosocial factors on LBP/CLBP outcomes may be conceptualized broadly within three facets: prognostic abilities, treatment effect (moderators or modifiers) and treatment mediators (Hill et al., 2011). The prognostic abilities of psychosocial factors are evident in their abilities to affect/predict CLBP outcomes irrespective of the therapy administered (e.g., Ramond et al., 2011). The moderating role of psychosocial factors are evident through studies that show the relationship between baseline psychosocial factors, interventions and the associated outcomes (e.g., Alhowimel et al., 2021). Psychosocial factors as mediators of CLBP depicts how psychosocial factors play an intermediary role between intervention and outcome (Hill et al., 2011). Psychosocial risk factors are important in precipitating LBP to CLBP and the progression of CLBP (Igwesi-Chidobe et al., 2017). Moreover, the potential for CLBP to generate adverse psychosocial impacts has been discussed in Western contexts (Froud, Patterson, Eldridge et al., 2014). This depicts the pluralistic positioning of psychosocial factors. Psychosocial factors such as social support have however been described as having a positive impact on the experience of CLBP (Snelgrove and Liossi, 2013). Therefore, this section reviews the psychosocial risk-factors and psychosocial impact of CLBP globally.

2.3.3.1 Psychosocial Factors as Predictors, Mediators and Moderators of CLBP

A SR assessing the predictive value of psychosocial factors for precipitating LBP to CLBP identified depression, psychological distress, passive coping strategies and FABs as having significant predictive values for the progression of LBP to CLBP (Ramond et al., 2011). Twenty-three studies were included, but few (three) databases were searched.

More than 70% of the included studies were of European origin with none conducted in Africa. Only six of the included studies were of high quality and the rest had inadequate power, perhaps contributing to the inability to establish predictive abilities of some psychosocial variables. The study thus provides moderate evidence on predictive abilities of psychosocial factors. Two recent systematic reviews (search from 5 databases) assessed the predictors of pain and disability in individuals treated for CLBP conservatively (15 studies) and the psychosocial factors associated with change in CLBP pain and associated disability following physiotherapy treatment (10 studies) (Alhowimel et al., 2021; Alhowimel et al., 2018). The former reported that baseline FABs, depression, self-efficacy and catastrophizing predicted future disability in CLBP patients irrespective of the conservative interventions received, depicting their prognostic abilities. Furthermore, the review by Alhowimel et al., (2018) showed that there was an association between baseline fear-avoidance beliefs, catastrophizing, depression and self-efficacy beliefs and pain and disability, following physiotherapy; thus depicting the modifying abilities of psychosocial factors. Additionally, self-efficacy was found to play a mediating role between some psychosocial factors (e.g., fear) and future disability and pain.

Stubbs et al., (2016) in a study of 190,593 adults in 43 LMICs (including Ghana) assessed the relationship between LBP and mental health. Data was obtained from the World Health Survey. Nationally-representative data were included, and questionnaires adequately captured the psychological factors being explored; strengthening the study's rigour. Regression analysis showed significant relationship between LBP/CLBP and depression, sleep, anxiety and stress sensitivity, highlighting psychological factors as a significant aspect of LBP/CLBP in LMICs.

A study was conducted in rural Nigeria on biopsychosocial factors associated with CLBP disability (Igwesi-Chidobe et al., 2017). Relevant and validated data collection tools were used in the study. Data collection questionnaires were translated into the local language and validated. However, participants were interviewed by trained community health workers due to low literacy levels creating a risk of interviewer bias. A multi-staged cluster and stratified sampling method was used, enrolling 200 participants. The study reported illness perceptions and FABs as the most prevalent factors associated with CLBP disability. Other factors found to affect self-reported disability were pain intensity, catastrophizing and anxiety. Performance-based disability was adversely affected by being female and lack of societal support.

Social determinants such as work and socio-economic factors also increase LBP risks globally. Work-related tasks account for an approximate 21.7million disability-adjusted-life-years (DALYs) according to a global study of occupational-related LBP (Driscoll et al., 2014). Tasks such as lifting, forceful movements, awkward postures and vibration were identified as accounting for LBP (Driscoll et al., 2014). Data was derived from the GBD study 2010 (Hoy et al., 2014). Global findings on the epidemiology of LBP identified 'low educational level, reduced levels of support at work, whole body vibration and job dissatisfaction' as possible risk factors of LBP (Hoy et al., 2010). However, Ramond et al., (2011) did not find socio-occupational factors as significant predictors for the progression of LBP. Low educational level and rural dwelling were found to increase susceptibility to LBP in the SAGE study (Williams et al., 2015). Low educational status, low wealth and rural dwelling are suggested to be associated with performance of manual or high physical demanding tasks, hence an increase in LBP (Williams et al., 2015). In addition, agriculture was identified as having the highest risk associated with the development of LBP worldwide (Relative risk, 3.3) (Driscoll et al., 2014) and the main source of livelihood for Ghanaian rural folks is farming (Williams et al., 2015). The effect of low socioeconomic status and education on LBP may be explained by environmental and lifestyle related factors (e.g., living in areas of high pollution, unhealthy diet, involvement in physically demanding jobs), low health literacy, and job-dissatisfaction, which are commonly associated with individuals from low socioeconomic backgrounds (Hartvigsen et al., 2018). However, the mediating/moderating roles of psychosocial factors, particularly LBP beliefs, could potentially affect the outcomes of patients with LBP in low-to-middle income countries, including Ghana.

2.3.3.2 Psychosocial Impact of CLBP

Esson, Cote and Mirror (2020) explained the impact of CLBP in Canada, using the International Classification of Function (ICF) framework. They conducted three focus groups (total participants: 12 individuals with CLBP). Four themes relating to the 'invisible and ambivalent nature of CLBP, social isolation, stigmatization and marginalization' were derived. Using the ICF, they explained how limited bodily functions and structures resulted in difficulty with performing previous work or domestic tasks and how these affected social relationships and participations.

The psychosocial impact of CLBP has been widely investigated in developed countries through qualitative studies exploring the lived experiences of individuals with CLBP. This has resulted in four meta-syntheses exploring the lived experiences and/or impact of CLBP (Snelgrove and Loissi, 2013; Bunzli, Watkins, Smith et al., 2013; Froud et al., 2014; McNeela, Doyle, O'Gorman et al., 2015) (Figures 21 & 25). However, the gendered or cultural perspectives regarding the psychosocial impact of CLBP has been specifically investigated in only three studies: Iranian women (Tavajian, Gregory, Montazeri, 2008), Aboriginal Australians (Lin et al., 2013) and a cross-cultural UK study involving Punjabis (Singh, Newton, O'Sullivan et al., 2016). Since the metasyntheses provide comprehensive accounts of the psychosocial impact of CLBP, these are discussed in detail in this section.

The four metasyntheses involved a search of 5 or more databases. Three out of the four metasyntheses (Bunzli et al., 2013; Snelgrove and Loissi et al., 2013 and McNeela et al., 2014) involved synthesis of 25, 28 and 33 articles respectively on experiences of CLBP; while Froud et al., (2014) synthesized 49 articles on the impact of CLBP. The studies included in the reviews were conducted in Europe, USA, Iran, South-Africa, Israel and Australia. The inclusion of only one primary study conducted in Africa (South-Africa) in these four high quality metasyntheses further highlights the limited scope of CLBP research within African contexts and specifically in Ghana. It emphasizes the limited availability of qualitative studies that explore patients' stories on the negative psychosocial impacts of CLBP. However, psychosocial factors are important to provide tailored/holistic management approaches for patients with CLBP (Kamper et al., 2015).

According to all the metasyntheses, CLBP affected all aspects of patients' lives: self, relationships, work, domestic tasks and social life. This was described as 'the disempowering impact of CLBP on all levels' by McNeela et al., (2015). CLBP created a devalued sense of self (Snelgrove and Liossi, 2013). The impact of CLBP on the self resulted from the loss of abilities to perform previous tasks. A devalued sense of self was linked with increased withdrawal and decreased function (Snelgrove and Loissi et al., 2013). Furthermore, all the metasyntheses suggested patients' representation of a dual self: an external painful body and the valued pre-CLBP self, suggesting a lack of illness integration.

All the reviews explained that a lack of legitimatization of patients' conditions by a diagnosis or visible signs resulted in stigmatization and marginalization from family, friends and work colleagues. Patients sometimes felt being discredited by HCPs and their CLBP diagnosed as a 'psychological problem' (Bunzli et al., 2013, Froud et al., 2014). This sometimes resulted in amplifying symptoms to maintain endorsement/legitimization of their pain from family and friends (Froud et al., 2014). Those who endeavored to work through pain to counter stigmatization and the fear of losing jobs mentioned the tendency of this approach to reinforce delegitimization (Froud et al., 2014). The presence of CLBP was accompanied by frustration, anger, anxiety and depression (McNeela et al., 2015). Family and friends support was described as a paradoxical element by Froud et al., (2014), since patients reported the benefit from family and friends support; while it also served as a source of guilt, shame and helplessness due to the perceived burden on family and friends. Financial difficulties, caused by inability to work, were also mentioned in all the metasyntheses. Some patients feared for their future and perceived a sense of premature ageing (Snelgrove and Liossi, 2013).

Patients generally looked forward to a diagnosis and cure and a return to pre-illness states; described as a period of 'biographical suspension' by Bunzli et al., (2013) and being 'enmeshed in pain' according to Osborn and Smith (2006) in Snelgrove and Liossi et al., (2013). All the metasyntheses however reported that individuals gradually began to realize the impossibility of returning to pre-illness states and embraced adaptation and acceptance. The metasyntheses validated the complex and multidimensional nature of CLBP that permeates physical, psychological and social aspects. Moreover, the increasing burden and identified triggers of CLBP highlight the need for a comprehensive approach to CLBP management as discussed below.

2.4 CLBP Management: The Paradigm Shift

CLBP had, until late 1970s, been considered as a purely biomedical process, therefore its cause was linked to a defect in structures within the musculoskeletal system only (Nielson and Weir, 2001). However, the biomedical model failed to fully explain the recurrent nature of LBP and the existence of CLBP even after initial pathology that caused LBP episode had healed (Gatchel et al., 2007). Increasing research in pain and CLBP management (Melzack and Wall, 1965, Waddell, 1987) revealed the need for a holistic model of treatment. Advances in pain neuroscience revealed a link between psychosocial states and brain processes which cause heightened/sustained pain states and precipitate disability (Nielson and Weir, 2001). Consequently, CLBP management focus shifted from pain relief to pain management and consideration of an illness model rather than a disease model (Gatchel, Peng, Peters et al., 2007). The definition of pain by the international association of pain (IASP) also highlights the potential of psychosocial states as a source of pain, with pain identified as a physical, sensory and emotional response that could occur in the absence of tissue damage (IASP, 2020), hence the inception of the biopsychosocial model for CLBP (Engel, 1977).

2.4.1 Management Guidelines for CLBP

Two SRs of clinical practice guidelines (CPGs) (Lin et al., 2020, Oliveira et al., 2018), two national CPGs (NICE, 2016, STG, 2010) and one cross-sectional survey (Oppong-Yeboah and May, 2014) were included in this section (Figure 26). Evidence-based guidelines from the UK and several high-income countries integrate the BPS model with recommendations for early consideration of psychosocial risk-factors in the management of CLBP (Oliveira et al., 2018; NICE, 2016). Oliveira et al., (2018) conducted a systematic review of 15 CPGs (9 of which are for CLBP) for nonspecific LBP management in primary care. Lin et al., (2020) systematically reviewed 44 CPGs on musculoskeletal pain management (15 LBP) in primary care/emergency. Current CPGs recommend cognitive behavioural therapy, exercise, multidisciplinary (biopsychosocial) treatment, trying to keep patients at work and educational interventions for the management of CLBP (Lin, Wiles, Waller et al., 2020; Oliveira et al., 2018; NICE, 2016). Passive strategies such as rest and electrotherapy are discouraged. NSAIDs and manual therapy are recommended as adjuncts; routine imaging is discouraged.

2.4.2 Management Pathway for CLBP in Ghana

In Ghana, physiotherapy is not practiced as first-point-of-contact; therefore, all patients presenting with LBP report to a doctor. The standard treatment guidelines (STG) for doctors in Ghana propose routine imaging for all LBP cases and an option for physiotherapy referral (STG, 2010). Though the STG acknowledges psychosocial risk-factors in CLBP, there is no indication of a management pathway addressing psychosocial components (STG, 2010). Also, a recommendation of routine imaging emphasizes a biomedical approach to management (Airaksinen et al., 2006); contradicting management guidelines in western countries. Currently, there are no STGs for physiotherapists in Ghana. The lack of published updated STG for doctors and absence of treatment guidelines for physiotherapists could be attributed to variations in clinical practice between developed/developing countries, limited emphasis on evidence-based practice or difficulty with developing Ghanaian-specific guidelines due to limited high-quality research (Dizon et al., 2017). A web-based survey was conducted by (Oppong-Yeboah and May, 2014) to ascertain LBP management practices among physiotherapists in Ghana (n=44). A well-structured questionnaire was used and a good response rate (67%) was recorded. This response rate was derived from the number of physiotherapists reached via email (n=66). However, a considerable number of eligible physiotherapists (n=36) did not participate; which limits the generalizability of the findings. The study however provides relevant information on practices utilized by Ghanaian physiotherapists. The results indicated that most CLBP patients attend numerous (>8) physiotherapy sessions which are mostly self-funded or funded by the NHIS. Numerous treatment sessions suggest a biomedical approach (Oppong-Yeboah and May, 2014). Though recommended guidelines such as exercise and advice were used; passive modalities such as electrotherapy were also commonly used (Oppong-Yeboah and May, 2014). Advice given was mainly on ‘postural awareness and technique modification’, highlighting an overall lack of consideration of psychosocial factors. The biopsychosocial model is discussed in the subsequent section.

2.5 The Biopsychosocial Model of Care

The biopsychosocial model was proposed by Engel, (1977). It is currently the recommended model for diagnosing and managing CLBP by national guidelines (e.g. NICE, 2016). It recognizes the effects of psychosocial factors on CLBP (Nijs et al., 2013). It further proposes the consideration of the biological, psychological and social components in the diagnosis and management of CLBP (Gatchel et al., 2007). There is a lack of definitive composition of a BPS model for CLBP, therefore strategies assessing and managing biopsychosocial components are the emphasis (van Erp, Huijnen, Jakobs et al., 2019). The BPS model for CLBP is usually considered within individual treatment sessions by specific HCPs (van Erp et al., 2019) or a multidisciplinary team(Kamper et al., 2015) . It is delivered as part of educational sessions such as back schools, incorporation of cognitive-behavioural therapy or self-management strategies (Kamper, Apeldoorn, Chiarotto et al., 2015). Successful adoption of BPS model may require multi-professional involvement thus human and financial resources may pose challenges (Kamper et al., 2015).

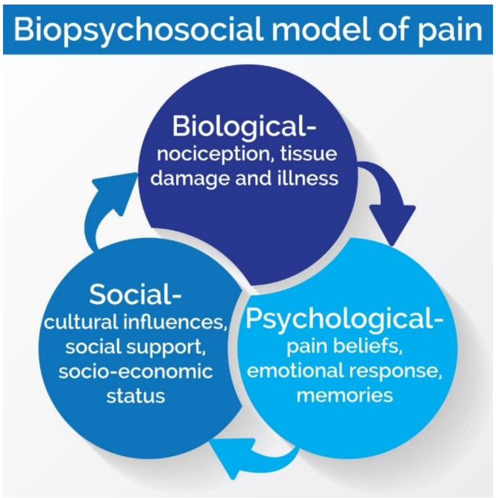

Figure 5: Biopsychosocial Model

2.5.1 Effectiveness of Biopsychosocial model for CLBP

Two systematic reviews (van Erp et al., 2019, Kamper et al., 2017) on the effectiveness of biopsychosocial approaches for CLBP were included in this section (Figures 22 & 27). The SR by van Erp et. al., (2019) (7 RCTs conducted in Western countries) assessed the effectiveness of physiotherapist-led BPS interventions in primary care settings. The SR provided moderate-quality evidence suggesting that BPS approaches were more effective than education/advice (e.g., staying active, appropriate medication use) in the short, medium and long term and were as effective as physical activity programmes (e.g. manual therapy, motor control, exercises) for managing CLBP. The included studies were of moderate to low quality. The biopsychosocial components for the study included graded exposure, neurobiological conditioning, cognitive functional therapy, education & empowerment. Main outcomes were pain, disability, work factors, psychological factors and quality of life, and most studies (5 RCTs) performed follow-up measurements at 12months.

Another systematic review assessed the effectiveness of a multidisciplinary BPS approach (Kamper et al., 2015). Forty-six RCTs (6858 patients) met the inclusion criteria after a search of six databases. All studies were conducted in European countries. Studies mostly included patients who had experienced failed treatments. Multidisciplinary BPS care was identified as treatment delivered by two or more professionals with the intervention addressing physical and psychosocial components. The study found moderate evidence (16 RCTs) and low evidence (19 RCTs) that multidisciplinary BPS care was more effective than usual care and physical treatments respectively. Multidisciplinary BPS care was more effective than physical treatments (8 RCTs) but not usual care (7 RCTs) for occupational outcomes. Two included RCTs (Fairbank, Frost, Wilson-MacDonald et al., 2005, Hellum, Johnsen, Storheim et al., 2011) also found surgery was no more effective than multidisciplinary BPS care for CLBP, though surgery imposed adverse effects.

These systematic reviews suggest that BPS approaches are effective for managing CLBP. They highlight that, in the absence of a multi-disciplinary team, BPS care may be administered by a knowledgeable HCP and still provide positive outcomes. The non-inclusion of African studies within the SRs by van Erp et al., (2017) and Kamper et al., (2015) highlights the possibility of limited focus on BPS approaches to care within these contexts. According to Nijs et al., (2013), the competence and beliefs of HCPs as well as the beliefs of the patient, are key to successful adoption, implementation, and effectiveness of a BPS approach for CLBP management.

2.6 CLBP Beliefs

Pain beliefs are mental appraisals and constructions concerning individual pain experiences (Iles, Davidson, Taylor, 2008). Pain beliefs are moulded by socio-cultural influences, health literacy and previous pain experiences (Tan, Smith, O'Sullivan et al., 2014). Pain beliefs initiate psychological processes and attitudes that affect the course and management of chronic pain, including CLBP. CLBP beliefs are mainly premised around causes of pain, treatment expectations, diagnostics and outcome goals (Main, Foster and Buchbinder, 2010). Generic CLBP beliefs include fear-avoidance beliefs, catastrophizing, and self-efficacy beliefs (Main, Foster, Buchbinder, 2010). Three SRs assessing the effect or prognostic abilities of FABs, catastrophizing and self-efficacy in LBP were included in this section (Figures 23 & 28).

2.6.1 Fear-Avoidance Beliefs

Fear-avoidance beliefs (FABs) are cognitive-behavioural influences associated with fear of pain and avoidance of activity or work (Waddell, Newton, Henderson et al., 1993). It is unclear whether the avoidance is occasioned by the fear of pain or the consequences of pain (Lethem, Slade, Troup, Bentley, 1983). The FABs model proposes two extremes: "confrontation and avoidance". Confrontation leads to overcoming fear whilst avoidance reinforces fear and promotes disability (Lethem et al., 1983).

A SR (Wertli et al., 2014b) assessing the prognostic ability of FABs involved a search of 10 databases from which 21 quantitative studies (all from Western countries) were identified. Most studies (70%) accounted for only a few prognostic factors (<8/16), which limits the strength of the studies in attributing prognostic findings solely to FABs. However, the studies exploring sub-acute LBP accounted for ≥9 prognostic factors. Most of the included studies had inadequate power with only studies conducted in work populations having large samples. From the review, FABs were most convincingly predictive of work-related outcomes (sick leave and return to work) in sub-acute patients (Wertli et al., 2014b), with two studies (Ang, Bair, Damush et al., 2010, Magnussen, Strand, Skouen et al., 2007) indicating an association between CLBP and return to work.

2.6.2 Catastrophizing Beliefs

Pain catastrophizing is a cognitive phenomenon related to heightened negative interpretation of pain, which results in exaggeration of actual symptoms (Sullivan et al., 2001). It is also described as thoughts associated with feeling helpless due to pain or perceiving a pain experience as insuperable (Sullivan et al., 2001). Catastrophizing may be used as a negative coping strategy (Main et al., 2010). It is unclear whether there is a link between catastrophizing and fear-avoidance as some authors have proposed that catastrophizing precedes fear-avoidance; while FABs have been suggested to occur independently of catastrophizing thoughts (Brox, 2014).

A systematic review that included 19 publications from 16 quantitative studies, following an extensive search, found catastrophizing negatively affected work-related outcomes in two out of five studies. Eight studies found catastrophizing increased pain and disability in all LBP groups (Wertli et al., 2014a). A risk of publication bias is possible as studies may not report “unfavourable” findings and some of the included studies had inadequate sample size (Wertli et al., 2014a).

2.6.3 Self-Efficacy Beliefs

Self-efficacy is the conviction in oneself to successfully complete a task. It describes an individual’s faith in their ability to manage stressful situations such as LBP and feel better (Bandura, 1997). Self-efficacy is negatively correlated with disability, pain and psychological distress as reported in a meta-analysis on the effect of self-efficacy on treatment outcomes in patients with chronic pain. Eighty-six studies (15,616 participants from Western countries), with 27 studies concentrating on CLBP, were used in the meta-analysis(Jackson et al., 2014).

Though generic beliefs such as catastrophizing, fear-avoidance and self-efficacy have been a focus in CLBP beliefs research, this approach has some inherent limitations. Firstly, these beliefs (and subsequent validation of questionnaires around these beliefs) were derived from studies conducted in Western countries. Therefore, most CLBP beliefs questionnaires reflect CLBP beliefs situated within a western culture. Also, the use of, and concentration on, pre-identified beliefs may hinder the identification of core/particular beliefs among different CLBP patient groups, therefore interventions targeting positive beliefs may not be specific enough and well-tailored. However, these generic beliefs have contributed to the understanding and management of CLBP. The next section reviews literature around CLBP beliefs among patients and general populations.

2.6.4 Patients’/Populations’ CLBP beliefs

Patients’ CLBP beliefs have been assessed in various settings, excluding Ghana. A recent SR by Morton, Brun, Krajewska, et al., (2019) assessed LBP beliefs and behaviours and their associations among the general populace. Nineteen quantitative studies (13 moderate quality, 5 inconclusive quality, 1 low quality) conducted in Europe (12), Australasia (6), and North America (1) were included in the review. Eight validated questionnaires on LBP beliefs (e.g. back beliefs questionnaire (BBQ)) were used across the included studies. Beliefs about the negative consequences of LBP (e.g. LBP will stop you from working) were common. However, FABs were not consistently reported in most studies included in the SR. Variability in the rate of endorsement of beliefs related to staying active and resting was noted in the SR. Furthermore, unhelpful beliefs (e.g. activity will worsen LBP) were associated with being older, having a low income, low education, poor self-rated general health and mental health. The review by Morton et al., (2019) is limited by non-inclusion of qualitative studies which could provide in-depth information regarding LBP beliefs. Subsequent paragraphs elaborate on fifteen primary studies (Darlow, Perry, Stanley et al., 2014, Pierobon, Policastro, Solino et al., 2021, Christie, Nzamba, Desarzens et al., 2021, Hall, Coombs, Richmond et al., 2021, Bunzli, Smith, Schutze et al., 2015, Darlow, Dean, Perry et al., 2015, Setchell, Costa, Ferriera et al., 2017, Briggs, Jordan, Buchbinder et al., 2010, Singh et al., 2016, Gron, Jensen, Jensen et al., 2019, Ng, Cicuttini, Wang et al., 2017, Nesto and Ina, 2017, Igwesi-Chidobe et al., 2017, Honeyman and Jacobs, 1996, Lin et al., 2013)(Figures 23 & 29) that align more with the literature review aims of this study, i.e. studies that focused on exploring/evaluating LBP beliefs among patients and/or populations.

Population-based cross-sectional surveys were conducted among adults in New Zealand (Darlow et al., 2014), Argentina (Pierobon et al., 2021), the French speaking part of Switzerland (Christie et al., 2021) and Canada (Hall et al., 2021) to ascertain CLBP beliefs. The back-pain attitudes and beliefs questionnaire (Back-PAQ) was used to collect data from a representative sample in all three studies. Darlow et al., (2014) randomly selected 1000 adults and 612 responded to the survey. The studies by Christie et al., (2021), Pierobon et al., (2021) and Hall et al., (2021) involved 1,129, 1092 and 428 participants respectively. Questionnaires were distributed via social media and snowballing (Pierobon et al., 2021; Christie et al., 2021) and post (Darlow et al., 2014; Hall et al., 2021). Unhelpful beliefs were prevalent in all three studies (evidenced by high mean Back-PAQ scores: >111/170). Beliefs related to the vulnerability and need for protection of the back, and poor prognosis of LBP were highly rated in all three studies. Additionally, Darlow et al., (2014) indicated that most of the participants had varied FABs. Previous/current experience of LBP was associated with unhelpful beliefs (Darlow et al., 2014; Pierobon et al., 2021). Additionally, the study by Hall et al., (2021) found beliefs relating to the importance of scans for diagnosis and resting. However helpful beliefs related to staying active were present among most patients in the study by Christie et al., (2021) and Darlow et al., (2014).

Similarly, two qualitative studies (Singh et al., 2016; Darlow et al., 2015) and one mixed-methods study Bunzli et al., (2015) assessing the beliefs of patients with LBP found themes related to unhelpful beliefs about the vulnerability of the back, the need for protection (rest, avoidance, posture control and muscle strengthening) and catastrophic thoughts. The study by Bunzli et al., (2015) explored the beliefs of a sub-group of patients with CLBP (36 patients with high kinesophobia scores) using semi-structured interviews and found that patients beliefs were centred on the fear that activity would cause damage or worsen CLBP. In addition, Darlow et al., (2015) through semi-structured interviews (12 acute LBP and 11 CLBP patients) found that patients with CLBP believed it was associated with a poor prognosis. Singh et al., (2016) conducted a multi-ethnic qualitative study among five British and five Punjabis with CLBP in the UK, who were purposively sampled. The study revealed that both ethnic groups had negative CLBP beliefs. However, the Punjabis used passive coping strategies in the initial stages of LBP but transitioned to active coping strategies, while the British adopted active coping strategies throughout. All included participants had visited HCPs; therefore the transition by the Punjabis may be due to HCP advice. On the contrary, in the other two studies (Bunzli et al., 2015; Darlow et al.,2015), HCPs' interaction did not appear to translate into expressions of more positive beliefs. An influence of CLBP on gender roles, cultural and religious activities was also identified in the study by Singh et al., (2016). These findings may not be transferable but prompts consideration of a potential influence of these factors. Furthermore, a cross-sectional survey of 130 participants with persistent CLBP was conducted by Setchell et al., (2017) in Australia. Mixed methods of analysis (content/discourse analysis, and descriptive statistics) revealed very negative and biomechanical perspectives regarding participants' understanding of LBP; "the body as a machine" interlaced with biomedical perspectives. LBP was believed to be a progressively worsening condition caused by injuries and poor posture. Few participants described LBP as a complex condition linked to biopsychosocial factors.

Two longitudinal studies assessed the back beliefs of patients with LBP/CLBP in Denmark over a period of one year (Gron et al., 2019) and in Australia over a period of two years (Ng et al., 2017) using the BBQ. Another mixed-methods Australian study used validated FABs and catastrophizing questionnaires to assess LBP beliefs (Briggs et al., 2010). These studies suggested that negative LBP beliefs and behaviours were associated with disability and/or high intensity pain. Briggs et al., (2010) further indicated that participants classified as high disability had poorer beliefs and increased FABs and used more passive coping strategies. Bio-medical/mechanical causes related to injuries, posture, manual handling, 'wear and tear', age and overweight were reported in interviews conducted by Briggs et al., (2010). Misconceptions around the prognosis of LBP was found to be common in the study by Gron et al., (2019). However, both longitudinal studies found that, patients had positive beliefs regarding CLBP which were consistent over time. Briggs et al., (2010) and Ng et al., (2017) conducted community-based studies consisting of 117 and 192 participants respectively, while Gron et al., (2019) involved 2295 participants who were receiving care at chiropractic clinics. The strength of these studies lies with the use of validated tools for data collection and analysis and the large sample size by Gron et al., (2019). However, the purposive sampling techniques used in the other two studies may reduce the generalizability of the study findings.

Only two studies explored LBP beliefs in African settings, suggesting a limited understanding/knowledge around patients' beliefs regarding CLBP. A cross-sectional survey (Nesto and Ina, 2017) was conducted in Malawi, around LBP knowledge, attitudes and beliefs of patients attending physiotherapy. Two-hundred and five participants were conveniently sampled, and four separately validated questionnaires were adapted for the study. The study identified most patients possessed fear-avoidance (93%) and catastrophic (72%) beliefs. Since adapted questionnaires were utilized, other specific CLBP beliefs of the respondents were not assessed. A qualitative study of 30 CLBP patients was conducted in rural Nigeria on CLBP beliefs and experiences. Data was collected until saturation was achieved (Igwesi-Chidobe et al., 2017). Reflexivity and how data were translated to ensure richness of content were well-detailed and these strengthen the trustworthiness of this study (Igwesi-Chidobe et al., 2017). Participants believed CLBP resulted from manual work, poverty, degeneration, and infection (biomedical causes); some also believed CLBP was not an illness (BPS orientation). This reveals biomedical beliefs with some biopsychosocial components among participants. Cultural and spiritual connotations were also given to CLBP. Spirituality was a coping strategy used adaptively or mal-adaptively (Igwesi-Chidobe et al., 2017).

From the literature, maladaptive LBP beliefs are predominant among the general population and patients, though some positive beliefs were identified in some participants. Increased disability seems to entrench poorer beliefs. Some beliefs appear to be culturally situated or affected by HCPs' interaction. The context specific nature of beliefs is portrayed in the variability of LBP beliefs recorded in the Australian studies included in this section: very negative beliefs (Setchell 2017) and generally positive beliefs (Gron et al., 2019). This is further explored in the next section.

2.6.5 Factors Affecting Patient CLBP beliefs

2.6.5.1 Culture

Culture is defined as the values/beliefs of a group of people identified by certain characteristics (Odinka, Muomah, Ndukuba et al., 2015). Culture shapes health beliefs. Studies conducted around health beliefs about diabetes and mental health report a substantial influence of culture on the health beliefs and practices of people (Patel and Iliffe, 2017; Odinka et al., 2015).

Although the corpus of literature around the role of culture on CLBP beliefs is minimal, the few studies that have explored this role have indicated how the sociocultural environment influences CLBP beliefs (Igwesi-Chidobe et al., 2017; Singh et al., 2016). A contemporary study (Lin et al., 2013) on Aboriginal Australians' LBP beliefs has found contrasting evidence to previous findings by Honeyman and Jacobs, (1996). Honeyman and Jacobs (1996) conducted observations and interviews among 60-70 Aboriginal Australians in a community. Different LBP beliefs from other Western cultures was recorded: that is, Aboriginal Australians did not perceive LBP as an illness, hence did not report back pain to doctors, highlighting the role of culture on health beliefs. The contemporary study was an ethnographic study of 23 men and 11 women using culturally sensitive interviewing methods such as the interviewer being an aboriginal and conducting interviews in Aboriginal English (Lin et al., 2013). They found that most participants had negative and biomedical beliefs of LBP largely gained from interactions with HCPs and positive beliefs were not associated with HCP interactions. This study suggests the influence of Western culture (including HCPs) on indigenous cultures of Aboriginal Australians. This influence of culture strengthens the assertion that CLBP beliefs might differ across continents, though similar beliefs may also pertain (Tan et al., 2014).

2.6.5.2 Influence of HCPs' beliefs

HCPs have also been identified as one of the sources of patients' CLBP beliefs. A SR assessing the association between HCPs' beliefs and patients' beliefs and outcomes included 17 qualitative and quantitative studies (5 high and 12 moderate quality studies) from 8 Western countries (Darlow, Fullen, Dean et al., 2012). Eight databases were searched, and two reviewers were involved in the data extraction and assessment of the quality of studies. There was strong evidence (3 moderate quality studies) that HCPs' beliefs influenced patients' beliefs and moderate evidence (2 high quality studies) that high FABs of HCPs were associated with high FABs in patients (Darlow et al., 2012). Moreover, a qualitative study on factors that influence LBP beliefs was conducted using semi-structured interviews in 12 patients with acute LBP and 11 patients with CLBP in New Zealand (Darlow et al., 2015). Although participants reported other sources of LBP beliefs such as the internet, they intimated that HCPs had the most significant influence on their attitudes and beliefs.

The study conducted by Darlow et al., (2014) in New Zealand reported that participants who had visited a HCP concerning their back pain were more likely to have positive beliefs concerning activity and LBP. Conversely, participants in the study by Briggs et al., (2010) indicated positive beliefs that did not originate from HCP interactions. Furthermore, although all participants in the Malawi study cited HCPs as their major sources of information and were undergoing physiotherapy, unhelpful beliefs were common (Nesto and Ina, 2017). It is not known whether this is a result of the beliefs of the HCPs influencing those of the patients. Additionally, Setchell et al., (2017) found that

89% of the participants cited HCPs as sources of the unhelpful beliefs they upheld. Therefore, subsequent sections explore HCPs' beliefs and their influence on treatment choices.

2.6.6 HCPs' CLBP beliefs

Three SRs (Gardener, Refshauge, Smith et al., 2017, Werner, Pierre, Brona et al., 2012, Darlow et al., 2012) and eight primary studies (Magalhaes, Costa, Cabral et al., 2012, Regina, Benjamin, Dicken, Samuel, 2015, Bishop, Foster, Thomas, Hay, 2008, Fullen, Baxter, Doody et al., 2011, Simmonds, Derghazarian, 2012, Alsherhri, Alzahrani, Alotaibi et al., 2020, Tan et al., 2014, Christie, Pizzolato, Meyer et al., 2021) were included in this section (Figures 23 & 30).

HCPs' CLBP beliefs have been evaluated in terms of treatment orientation: biomedical or biopsychosocial (e.g., Magalhaes et al., 2012), excluding Ghanaian/African contexts. Therefore, the beliefs underpinning the management practices of Ghanaian/African HCPs are unknown. A validated questionnaire commonly used to assess the CLBP treatment orientation of HCPs is the Patient Attitudes and Beliefs Scale (PABS) (Bishop, 2008). The PABS has two subscales- biomedical and biopsychosocial. The higher the score on each subscale, the higher the health professionals' orientation towards the respective subscale (Bishop, 2008). Surveys were conducted among Hong-Kong primary-care physicians (n=156)(Regina et al. 2015), general practitioners and physiotherapists in the UK (n=1022) (Bishop et al., 2008), Brazilian physiotherapists (n=100) (Magalhaes et al., 2012), Irish doctors (n=750) (Fullen et al., 2011), Canadian physiotherapists (n=108) (Simmonds et al., 2012) and Saudi-Arabian physiotherapists (n= 304) (Alsherhri et al., 2020) using the PABS. All the studies reported that the physicians and physiotherapists had mid-way scores for both the mean biomedical (range:30.9-34.8/60) and biopsychosocial scores (range:31.7-35.6/54). The Hong-Kong study targeted a large number of physicians (1638) through emails; however a low response rate (9.5%) was recorded (Regina et al., 2015). No correlation was found between participants' biomedical and biopsychosocial scores (Regina et al. 2015). This could be interpreted as uncertainty among physicians concerning CLBP beliefs. However, the inadequate sample size could also reduce the chances of establishing a correlation. A significant correlation was however derived between participants' biomedical and biopsychosocial scores in the UK study (Bishop et al., 2008), with a large sample size increasing the external validity. The Brazilian study reported that males and less-experienced professionals had more tendencies towards a biomedical orientation. The representativeness of this study is limited due to convenience sampling. Though most of the participants had post-graduate degrees, biomedical beliefs were a common finding among the physiotherapists

(Magalhaes et al., 2012). The Canadian physiotherapists generally disagreed with beliefs on returning to normal work/activity (Simmonds et al., 2012). The Irish study revealed that doctors who used guidelines and had recently graduated had lower biomedical scores, highlighting the potential influence of engagement with current evidence (Fullen et al., 2011).

A plausible reason for most of the practitioners attaining mid-scores in both sub-scales could be due to the recognition of the essence of biopsychosocial beliefs while still holding on to biomedical beliefs of CLBP. It may suggest uncertainty among HCPs. A qualitative study conducted among 8 Italian physiotherapists who were purposively sampled from private clinics identified that although physiotherapists acknowledged psychosocial factors, physiotherapists felt inadequate to take up a biopsychosocial approach (Zangoni and Thomson, 2017): this might also contribute to physiotherapists' tendency to hold onto biomedical beliefs. The low sample size limits transferability.

Christie et al., (2021) evaluated the beliefs of 288 French-speaking Swiss physiotherapists using the Back-PAQ and a vignette. They found that physiotherapists generally aligned with helpful beliefs, although unhelpful beliefs relating to the vulnerability and 'special' nature of the back were endorsed by some physiotherapists. More years of experience and current experience of LBP were found to be associated with unhelpful beliefs. Another study was conducted among 423 HCPs (Chinese medicine practitioners, physicians, nurses, rehabilitation professionals) in China who were conveniently sampled (Tan et al., 2014). Being a young HCP, working outside a tertiary hospital and personal experience of LBP were linked to greater biomedical orientation and FABs. Post-graduate education was however associated with lower FABs. Though the sample used was in line with pre-defined study power calculation, convenience sampling may introduce some bias (Tan et al., 2014).

2.6.7 Influence of HCPs' CLBP Beliefs on Treatment Approach

SRs have assessed physicians' determinants of granting patients sick-leave (Werner et al., 2012: 11 moderate and high-quality studies); the effect of physiotherapists' beliefs on their treatment (Gardener et al., 2017: 10studies, 9 high quality) as well as the effect of HCPs' (chiropractors, rheumatologists, physiotherapists, physicians) beliefs (Darlow et al., 2012: 12 studies, 5 high quality) on treatment outcomes. The SRs included broad and well-defined searches, with two reviewers involved in data extraction and quality assessment of studies. The SRs report a consistent trend of HCPs' beliefs affecting their treatment approach. There is strong evidence that physiotherapists, and moderate evidence that HCPs with biomedical orientation or high FABs are less likely to adhere to BPS treatment guidelines and therefore advise rest, limited activity and prescribe more sick-leave certification. The review by Werner et al., (2012) produced moderate evidence that physicians' FABs and distress were major determinants of sick-listing patients. Physiotherapists and physicians intimated that patients' beliefs and treatment expectations influenced their treatment approach. This suggests an interaction between patients' and HCPs' beliefs. Therefore, the beliefs of patients and HCPs are paramount if evidence-based approaches are to be implemented by HCPs. Moreover, a study by Christie et al., (2021) on physiotherapists LBP beliefs in Switzerland identified an association between beliefs relating to the vulnerability and the 'special' nature of the back and advice on protecting the back and avoidance. Similarly, Alshehri et al., (2020) found an association between treatment orientation and treatment selection. Increasing biomedical beliefs were associated with increased prescription of passive modalities (e.g. electrotherapy, lumbar supports).

2.7 Summary

LBP is a global problem, and its burden is substantial in Africa. Psychosocial factors play an important role in the occurrence and progression of CLBP. CLBP beliefs are important psychosocial factors that affect the outcomes and course of CLBP. Generally, most patients have negative beliefs about CLBP. Negative HCP and patient LBP beliefs are associated with increased potential for chronicity and disability. Qualitative studies have highlighted the potential influence of culture on CLBP beliefs. Though studies around CLBP beliefs have been extensively conducted in Western countries, there is a gap in the literature around CLBP beliefs in Ghana and Africa. Extrapolating findings from these Western countries to a Ghanaian context is problematic due to differences in health structures and health literacy avenues, continental variations and culture. Also, beliefs are shaped by the unique interaction with one's environment including HCPs interaction. Moreover, most of the current studies around CLBP beliefs are quantitatively grounded using questionnaires derived from pre-identified beliefs from Western countries. This approach seems deficient in a Ghanaian setting where this has been underexplored, with an absence of information on the core LBP beliefs of Ghanaian patients and HCPs.

Studies conducted in the Western world have highlighted the potential for HCPs shaping the beliefs of patients and both biomedical and biopsychosocial beliefs among HCPs. It is unknown whether this situation pertains in Ghana. Ascertaining CLBP beliefs among major stakeholders in Ghana (HCPs and patients) will enable understanding of: the belief system embedded in the typical pathway CLBP patients experience, the beliefs of patients themselves, and whether HCPs are potential sources of patients' beliefs or otherwise. This research will provide new and original information on CLBP beliefs in Ghana and provide information that has potential to impact practice and shape the management of CLBP in line with evidence-based practice. The aims and objectives of this research are listed in the next section.

2.8 Research Question

What are the CLBP beliefs of HCPs and CLBP patients attending physiotherapy in Ghana?

2.8.1 Research Aims and Objectives

2.8.1.1 Aims

- To explore the CLBP beliefs of CLBP patients and HCPs (doctors and physiotherapists) in Ghana.
- To develop a socio-culturally sensitive theoretical model of CLBP beliefs among Ghanaian HCPs and CLBP patients.

2.8.1.2 Objectives:

- To gain ethical approval and negotiate access to study sites and participants.
- To recruit physiotherapists, doctors and patients.
- Use qualitative semi-structured interviews to explore patients’ and HCPs’ beliefs about; the causes, currently utilized management approaches, alternative management approaches, management expectations/goals and coping strategies for CLBP.
- To analyze interviews.
- To compare findings to existing literature.
- To make recommendations for practice and research.

Chapter 3: Methodology and Methods

3.0 Introduction

This chapter describes the research design, philosophy and methods that were used in the research. It aims to provide in-depth discussions and rationale for the methodological decisions that served as the foundations for the research. In doing so it aims to make the researcher's analytical and thought processes accessible to the reader to facilitate assessment of the rigour of the study. The chapter begins with discussing the philosophy underpinning the research, the qualitative research methodology used and how data collection and analysis proceeded. It ends with discussions on ethical considerations related to the research and a conclusion.

3.1 Philosophical Underpinning

Ontology and epistemology are key to the understanding of the origin of knowledge and the world. Ontology refers to the study of reality (Crotty, 1998) while epistemology is concerned with how knowledge is produced (Cohen, Manion and Morrison 2007). This research adopted critical realism (CR) as its underpinning philosophy.

CR aimed to harmonize methods within the natural sciences (positivism) and social sciences (constructivism) (Bhaskar, 1986). Positivism suggests that there is an external objective truth, which can be discovered through scientific investigations that seek to eliminate researchers' influences (McEvoy and Richard, 2006). Although CR approves the presence of an external reality, it stipulates that what we know (epistemology) cannot be reduced to what is real (ontology), and therefore through research we seek to get closer to the truth (Bhaskar, 1998). Furthermore, CR suggests that individuals align themselves with multiple structures as they create the world hence an interplay between agency and structure is evident (McEvoy and Richard, 2006). Agency (individual) and structure (process) are important for holistic understanding of phenomena (Al-Busaidi, 2008). CR also proposes that knowledge proceeds through specific sociocultural contexts, hence the acceptance of multiple 'truths' (Nairn, 2012), and the researcher aligns with this proposition. The acceptance of multiple 'truths' is also shared by constructivism.

Constructivism stipulates that knowledge is produced through the co-construction and interpretation of knowledge by the researcher and the researched (Lincoln and Guba, 1985). Constructivism presupposes that knowledge is constructed from experiences of individuals through their interaction within specific sociocultural contexts; therefore multiple 'truths' of equal merit exists (Schwandt, 1994). This acceptance of equal and multiple 'truths' is criticized by opponents of constructivism as leading to an incessant play of language which results in difficulty in reaching consensus and limited transferability (Nairn, 2012). CR differs from constructivism through the suggestion of multiple ‘truths’ of unequal merit: a superior truth, which is imperfectly apprehendable exists (Smith and Deemer, 2000). This departure of CR becomes useful in research that is change-oriented, since multiple ‘truths’, created through individual experiences, could be explored and more consistent ‘truths’ relied upon to propose change (Fletcher, 2017). This feature of CR aligns with the current research aims of understanding beliefs and management practices of HCPs and patients, to provide foundational knowledge that may serve as a basis for change with respect to CLBP management in Ghana.

CR focusses on “the real” (Bhaskar, 1998) and suggests that reality proceeds through three domains: the empirical, real and actual (Nairn, 2012). The empirical is what may be observed/experienced; the real is the causal forces that underpin a phenomenon; the actual is “what actually occurs” and is influenced by the real (Nairn, 2012). CR thus focuses on the explanation of causal mechanisms surrounding an event since observing an event may not provide an explanation of its causal forces (Clark, MacIntyre and Cruickshank, 2007). CR’s focus on a single albeit imperfectly apprehendable truth is criticized as a means for potentially stifling participants’ experiential explanations and favouring researcher’s interpretations (Fletcher, 2017). CR is however concerned with the observations/explanations of patients (the empirical) in addition to the mechanisms at play (the real) (Bhaskar, 1998). This research similarly sought to explore HCPs’ and patients’ beliefs in addition to causal mechanisms and therefore aimed to preserve the participants’ voices.

3.2 Methodology

3.2.1 Qualitative Research Methodology

Qualitative research involves the study of the complexities associated with human/social behaviour and phenomena (Creswell, 1994). Qualitative research facilitates in-depth exploration to gain a deeper and holistic understanding of a phenomenon (Lincoln and Guba, 1985). In this study, adoption of a qualitative methodology facilitated in-depth exploration of the multidimensional constituents related to HCPs’ and patients’ CLBP beliefs and management practices. The specific qualitative methodology adopted for this study was a grounded theory approach, which is discussed below.

3.2.2 Grounded Theory

Grounded theory (GT) involves generation of a theory that explains a phenomenon/process within a given context (Corbin and Strauss, 2008). The outcome is an all-encompassing theory containing categories and sub-categories that provides in-depth explanation of a phenomenon and its contravening factors (Foley and Timonen, 2015). GT facilitated exploration of the complexity and divergence of views associated with the study of pain beliefs (Higginbottom and Lauridsen, 2014). Furthermore, Mellion and Tevon (2002) suggests that GT is particularly useful when a research question has not been previously explored, is not well understood in a context or when the properties or dimensions of a phenomena have not been fully explored. These criteria applied to the current research. A Straussian GT approach (Strauss and Corbin, 1998) was adopted for this study.

Straussian GT is a version of GT that proposes the use of induction, deduction and a coding paradigm to facilitate theory generation (Strauss and Corbin, 1998). Since the initial conception of GT by Glaser and Strauss (1967), various iterations have emerged (Timonen, Foley, Conlon, 2018). Glaser (a Mathematician) and Strauss (a symbolic interactionist) initially proposed GT to validate qualitative research during an era where quantitative/positivists paradigms dominated (Charmaz, 2006). Glaser and Strauss (1967) proposed that GT should be grounded in data (induction) and therefore the researcher should disengage from literature and approach data collection and analysis as an empty slate to reduce researcher bias and facilitate generation of new knowledge. Although Glaser and Strauss's (1967) text did not align specifically with a research paradigm, their proposition of 'emergence/discovery' of a theory and the emphasis on researcher neutrality points to positivist underpinnings (Charmaz, 2000). Furthermore, approaching data as an empty slate has been described as naïve and unfeasible within current institutional and ethics procedures (Charmaz, 2008). Moreover, the influence of the researcher on the research cannot be overlooked (Charmaz, 2006).

Strauss and Corbin (1990) presented a version of GT that proposed that the researcher could engage with literature to aid theoretical sensitivity and theory development (deduction) and provided processes for analyzing data including the adoption of a coding paradigm. Deduction, and the use of the coding paradigm are considered to increase the analytical dimensions of the theory (Mills, Bonner and Francis, 2006). However, this was critiqued by Glaser (1992) as a means of 'forcing' the data. Other researchers also suggest that Straussian GT may result in theory driven by existing knowledge (Charmaz, 2000, Glaser, 1992). Additionally, the use of the coding paradigm is perceived by opponents of Straussian GT (Bryant and Charmaz, 2007; Evans, 2013) as a means for stifling participants’ narratives; thus, promoting power differentials between the researcher and the participants. Straussian GT is believed to align with positivist/post-positivist paradigms due to its stipulated processes/coding paradigm, which appear to reflect striving towards an objective truth (Charmaz, 2000, Evans, 2013). However, recent texts on Straussian GT (Corbin and Strauss, 2008, 2015) appear to gravitate towards constructivism through the emphasis on the role of the researcher, multiple realities, reflexivity and lesser emphasis on stepwise procedures. More recently, Charmaz (2006) introduced constructivist GT, which acknowledges that knowledge is co-constructed between the researcher and participant, and not via emergence or discovery. Constructivist GT does not necessarily explain causality but provides an explanation and abstract conceptualization of the phenomenon (Charmaz, 2006), and therefore was not fully compatible with the current study’s objectives. Other GT approaches that have emerged include: Situational analysis (Clark, 2003), Feminist GT (Wuest, 1995) and Dimensional analysis (Bowers & Schatzman, 2009).

Straussian GT aligned with the objectives and philosophy underpinning this research (Section 3.2.3 provides a critique of the use of CR in GT). The procedures stipulated within Straussian GT were perceived as helpful rather than restrictive since they provided guidance for the novice qualitative researcher (the principal investigator). The procedures were not used as a rigid framework, but a guide to improve the researcher’s sensitivity to connections that could be possibly made during data analysis. The influence of the researcher’s experiences and engagement with existing literature were important considerations in this research, and these align with Straussian GT principles (Strauss and Corbin, 1998). Corbin and Strauss (2008) suggest that engagement with literature should not foster forcing data but guide theory building that is grounded in the knowledge that emerges/develops from participants’ narratives, and this study aimed at producing an explanatory theory grounded in participants’ narratives. Additionally, Timonen, Foley, Conlon (2018), suggest that engaging with existing literature allows GT to be used to extend existing theories, which was an outcome of this research. Moreover, the Straussian GT approach allows for consideration of macrosocial factors (e.g., conditions) which is in consonance with the research objectives.

However, all the GT versions possess some commonalities: theory must be grounded in data (induction), the use of memos to aid theory development, coding, theoretical sampling, concurrent data collection and analysis, data saturation and constant comparison of data (Timonen, Foley, Conlon, 2018). The next paragraph discusses the processes involved in Straussian GT.

Theoretical sampling refers to sampling based on characteristics/concepts emerging from data; as data collection and analysis occur simultaneously within GT (Strauss and Corbin, 1998). Also, in Straussian GT, data is collected until no new information emerges (data saturation) (Morse, 2004). These ensure generation of an encompassing explanatory theory (Morse 2004). Strauss and Corbin (1998) however emphasize that data saturation should be qualified as a degree of saturation since there is always potential for new knowledge. Theoretical sensitivity refers to how attune the researcher is with data theoretically and conceptually (Strauss and Corbin, 1990). Techniques such as questioning, flip-flop (comparing extremes of one dimension), far-out comparison (comparing opposite things) and deduction are suggested to improve theoretical sensitivity (Strauss and Corbin, 1998). According to Strauss and Corbin (1990), data analysis in GT should proceed through open, axial and selective coding and the use of the 'coding paradigm'. The coding paradigm stipulates that the conditions, actions, interactions and consequences, should be considered during data analysis. Constant comparison, which involves continuous comparison between and within concepts, categories and data to identify relationships, is also a key aspect of Straussian GT that facilitates theory development (Strauss and Corbin 1998). These principles were used to guide data collection and analysis as discussed in section 3.4.

3.2.3 Critical Realism in Grounded Theory

Aside constructivist GT that clearly states its philosophical position, other strands of GT are not necessarily aligned with specific philosophical positions and are adaptable to different theoretical perspectives (Bryant, 2009; Mills, Bonner, Francis, 2006). However, the principles embedded within each version drive their use within certain philosophies (Timonen, Foley, Conlon, 2018). According to Scott (2005), CR has the potential to support varied empirical methods. In this study, the choice of Straussian GT and CR was made since Straussian GT and CR possess numerous commonalities. CR focuses on causal mechanisms, in addition to participants' knowledge and experiences, and this provides deeper and holistic explanation of a phenomena (Clark, MacIntyre and Cruickshank, 2007). Similarly, GT facilitates in-depth understanding of a phenomenon by exploring the varied dimensions of a phenomenon (Strauss and Corbin, 1990). The use of axial coding and constant comparison of data enhances moving the researcher beyond immediate descriptions that are evident in data (Corbin and Strauss, 2008). Moreover, CR presupposes the fallibility of knowledge production (Bhaskar, 1979) and this conforms with propositions by all versions of GT. For instance, Glaser (1998) suggested that theory must be open to revision and Corbin and Strauss (2008) indicated that theory may provide partial explanation of a phenomenon.

CR encourages engagement with existing theories to facilitate abstraction of causal mechanisms (Bunt et al., 2018), and this opposes the emphasis on induction by initial GT (Glaser and Strauss, 1967); but aligns with the proposition of deduction and abduction by Straussian GT (Strauss and Corbin, 1998). Additionally, CR mainly relies on retroduction: a method of inference which guides constant movement between what is observed/experienced (the empirical) and deeper levels of reality (the actual) to identify causal mechanisms (Bhaskar, 1986). Similarly, abduction: a method of inference that aids interpretation of general ideas or concepts embedded in data and forming of relationships between concepts is suggested in Straussian GT (Corbin and Strauss, 2008). Abduction involves considering all plausible explanations, comparing them to the data to ensure identification of the most likely explanation (Charmaz, 2006). Abduction is encouraged by Straussian GT, with the caveat of being reflexive and transparent; that is, using memos to document connections and remaining open to a theory driven by data as the research proceeds (Corbin and Strauss, 2008). Retroduction is believed to complement GT, since it encourages analysis in a reverse direction (effect to cause) by asking the transcendental question, 'what may be the case for this to be' (Bunt, 2018)? Potential causal mechanisms can then be abstracted through an iterative movement between theory and data gathered (Bhasker, 1986). It is the effect of causal mechanisms which can be observed/experienced, therefore an inferential analysis provides opportunities for identifying possible causal mechanisms producing observed effects (Blaikie, 2007).

CR posits that to fully understand phenomena, agency (individual) and structure (context/society) need to be considered (Oliver, 2012). Similarly, Corbin and Strauss (2008) emphasize that the aim of GT is to contextualize events within sociocultural/sociohistorical frameworks, since understanding an experience cannot be detached from the sociocultural contexts involved. The use of the coding paradigm in Straussian GT facilitates this positioning of participants' experiences within the broader sociohistorical/sociocultural contexts (Strauss and Corbin, 1998). Furthermore, the outcome of GT is considered to include a core category that provides greater explanatory power (supersedes or integrates all other categories) (Corbin and Strauss, 2008). Similarly, the generative mechanisms in CR and the proposition of a superior yet imperfect truth aligns with the feature of core-category derivation in GT.

3.3 Positionality of the Researcher: Insider-Outsider

Maykut and Morehouse (1994) describe the position of the researcher as one of paradox: the ability to empathize with the experiences and meanings being expressed by participants and at the same time being reflexive about the influence of personal experiences and bias on data collection and analysis. Insider research refers to studying a population that one is part of; thus the researcher may share similar culture, experiences and identity with the population under study (Asselin, 2003). Outsider research, on the other hand, refers to studying a population which the researcher has no prior experience with and/or does not share any particular trait with (Dwyer and Buckle, 2009).

Researcher bias affects all forms of qualitative research (Galdas, 2017), and Rose (1985) suggests the impossibility of neutrality. However, the tendencies towards researcher bias is more pronounced in insider research. Insider research facilitates openness and hence the depth and breadth of coverage of a phenomenon (Fleming, 2018). This closeness of the researcher to the data potentially challenges the researcher’s objectivity. However, Asselin (2003) suggests that being an insider does not necessarily translate into having experiences that relate to the different sub-cultures within the population being studied. Therefore, the researcher needs to approach the research with an open mind, assuming no knowledge about the phenomenon under study, while being sensitive to the discussions and data to foster probing, in-depth discussions and unbiased analysis (Dwyer and Buckle, 2009). To counter the challenges inherent in insider research, an awareness of the researcher’s preconceptions, reflection on the research processes, and bracketing assumptions are paramount (Tufford and Newman, 2010).

Being an outsider does not necessarily immune the researcher to preconceptions, because the researcher reviews literature around the phenomenon being investigated before embarking on the study (Gair, 2012). All enquiry is thus value-laden (Rose, 1985). Outsider research is thought to increase the possibility of objectivity of the researcher (Acker, 2000). However, outsider research is critiqued as a means that may undermine understanding a phenomenon since being part of a population fosters understanding of the nuances inherent within the population (Lewis, 1973). Nonetheless, being an outsider does not necessarily translate into the inability to empathize with, or understand the meanings and experiences recounted by participants (Hellawell, 2007). It potentially increases the researcher’s ability to analyze data in open, holistic and complex ways that the insider researcher may not be drawn towards (Burgess, 1984).

The binary positioning of insider versus outsider is contested, since being a complete insider or outsider appears unattainable (Hellawell, 2007). Considering the role of the researcher as one that may be increasingly closer to the insider dimension at one point, and increasingly closer to the outsider dimension at another point during the research, is suggested by Hellawell (2007). Dwyer and Buckle (2009) describe this as assuming the position of the ‘space in between’. In this study, the researcher is a Ghanaian physiotherapist, someone who had never experienced LBP, a post-graduate researcher studying in the UK and researching CLBP. This negates the possibility of a single choice of insider/outsider stance in relation to studying the three groups of participants involved in this study.

In studying the patients, the researcher was both an outsider (had never experienced LBP and understood CLBP from the perspective of the literature), and an insider (a Ghanaian physiotherapist who had some knowledge around patients’ beliefs through clinical experience). The researcher felt that studying the patients reflected a central positioning of the researcher on the insider-outsider continuum. Considering the physiotherapists, the researcher was an insider (a Ghanaian physiotherapist who had worked at one of the study sites) and an outsider (a post-graduate researcher who had been exposed to different CLBP management and beliefs). For this group, the researcher perceived her position as one that swung more towards the insider component on the insider-outsider continuum. Lastly, studying the doctors was considered by the researcher as the group where the researcher’s stance was increasingly closer to an outsider. The researcher was a Ghanaian physiotherapist who was aware of some processes involved with doctors’ management of CLBP (e.g., patient referral) (insider) but was unaware of the details concerning the beliefs, processes and decisions that underlie CLBP management from the Ghanaian doctors’ perspectives (outsider). A reflection of the influence of the researcher’s positionality and experiences related to researching the three different groups is provided in Chapters 4-6.

3.4 Methods

3.4.1 Study Settings

The research was conducted in two teaching hospitals in Ghana that serve the Middle/Northern and Southern belts of Ghana. To enhance anonymity of participants, site 1 was used as the pseudonym for the research setting that serves the Middle/Northern belt, while site 2 was used to represent the study site located in the Southern belt of Ghana. The choice of these two hospitals allowed for exploration of CLBP beliefs among Ghanaian patients from varied socio-cultural backgrounds and exploration of views of HCPs situated within different cultural contexts of Ghana. It presented an opportunity to gain a broad and deep insight into CLBP beliefs among the stakeholders involved. The next paragraph outlines the principal researcher’s observations at the two study settings.

Both hospitals provided in-patient and out-patient physiotherapy services and had polyclinics. The polyclinics served as primary health care centers and were mainly run by family medicine practitioners and thus headed by a consultant family medicine practitioner. A variety of patients presented at the polyclinics for medical care. The polyclinics consisted of multiple waiting areas, consulting rooms, wards, medical laboratories, pharmacies and administrative spaces. The out-patient physiotherapy departments consisted of three main treatment sections: the electrotherapy unit, gymnasium and paediatrics unit, and office spaces for patient assessment, administrative work and rest rooms. All the patients presenting with musculoskeletal conditions (except patients with fractures) went to the electrotherapy unit. Both physiotherapy departments were headed by a physiotherapist. Site 1 had a system that grouped similar healthcare providers into directorates (e.g. medicine, radiology). However, physiotherapy was placed under the family medicine directorate (polyclinic). Although physiotherapy was administratively overseen by the family medicine directorate, family medicine practitioners and physiotherapists performed their clinical duties separately.

Due to the researcher’s working history at the physiotherapy department at site 1 and a working relationship with HCPs from site 2, the researcher was privy to clinicians who could serve as gatekeepers within both institutions.

3.4.2 Study Participants

HCPs (doctors and physiotherapists) and patients were recruited from both study sites. Patients were recruited from the physiotherapy departments of both study sites. The inclusion and exclusion criteria are listed in Figure 6 below.

Inclusion Criteria	Justification
Adult male and female patients with non-specific LBP lasting >3months	**In this study, non-specific CLBP was defined as pain in the posterior aspect of the back from the 12th rib to the gluteal folds with or without referral to the lower limbs, lasting for more than three months, that had no immediate identifiable cause.** (Hoy et al., 2014; Sullivan, 2012)**.** This criterion was used to identify participants for the study and perspectives from both genders were sought.
Patients with CLBP who were attending physiotherapy at the study sites	This allowed for inclusion of only CLBP patients who had contact with the healthcare system (i.e. physiotherapy and medical care). Since the research sought to assess the belief system embedded in Ghana's healthcare pathway for CLBP.
Patients with CLBP with varied socio-economic backgrounds (blue-collar & white-collar jobs; literate & illiterate; rural & urban dwellers)	Patients were intended to be recruited across a spectrum of socio-economic variables. This ensured data was not restricted to a particular sect of patients.
Male and female family medicine physicians and physiotherapists involved with the management of CLBP	This ensured perspectives from HCPs of both genders were captured
Family medicine physicians and physiotherapists with varied years of working experience and ranks	This enhanced inclusion of a broad spectrum of HCPs for better coverage of the topic.
Exclusion Criteria	**Justification**
Unwillingness to partake in the study	Participation in the study was entirely voluntary.
Physiotherapy assistants and physician assistants	Physiotherapists and doctors were the professionals who were in charge of patient care.

Figure 6: Inclusion and Exclusion Criteria

3.4.3 Recruitment

Recruitment of the physiotherapists was facilitated by the head of the physiotherapy departments for both study sites, who served as gatekeepers. Participant information sheets (PIS) (Appendix 3) were distributed to physiotherapists personally by the gatekeepers and interested participants informed the gatekeeper or the researcher through a provided telephone number. The gatekeepers followed up on physiotherapists after two weeks if physiotherapists indicated they needed time to contemplate participating but had not gotten back with any responses. The principal investigator also attended doctors' and physiotherapists' clinical meetings to introduce the research briefly. The gatekeepers for the doctors at study site 1 and 2 were the head of directorate (a consultant) and the head of research (a specialist) respectively. PIS (Appendix 3) were made available in the consulting rooms of doctors twice a week in four designated weeks at each study site. This ensured that most doctors were reached and ensured heterogenous representation. Interested doctors contacted the gatekeepers or the researcher via a contact number provided on the PIS.

Recruitment of patients was facilitated by two physiotherapists (one from each study site), who were involved with CLBP management. The physiotherapists provided PIS (Appendix 3) to patients, and in cases where the patient was a non-English speaker or illiterate, the PIS was explained to the patients by the gatekeepers. Follow-up reminders were carried out by gatekeepers and interested patients informed the gatekeepers. For all the three groups, after participants' registration of interest, introductions and interview times were scheduled. A consent form (Appendix 4) and a sheet that contained a participant code and captured demographic details (e.g. age, occupation, rank) (Appendix 5) was administered by the researcher on the interview day. The recruitment processes were designed in line with the ethical/procedural requirements of research and the institutions where data was collected. Figure 7 provides a summary of the recruitment process.

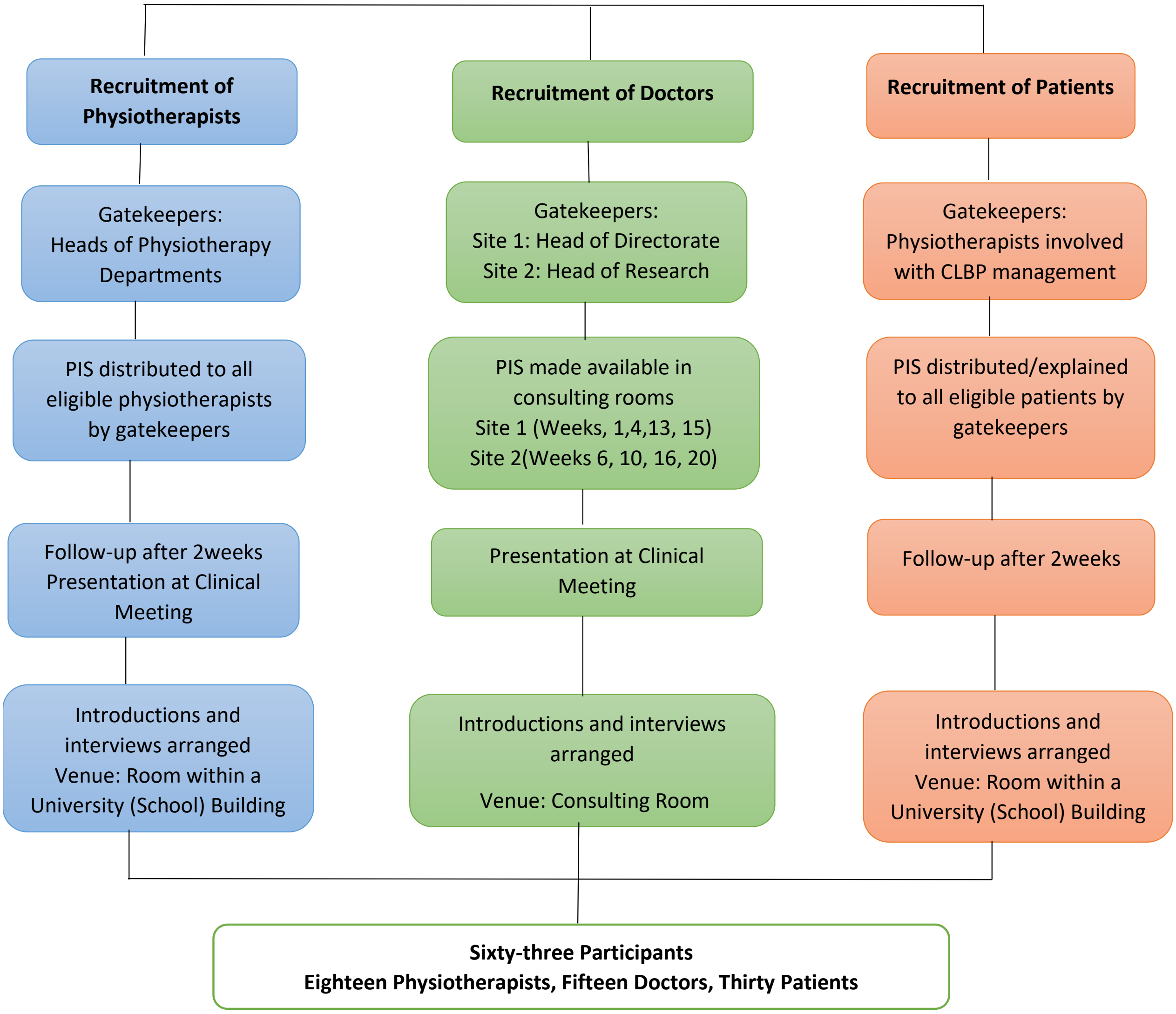

Figure 7: Recruitment Process

3.4.4 Sampling

Qualitative research commonly applies non-probabilistic sampling strategies due to the emphasis on understanding unique experiences, beliefs or processes (Silverman, 2019). Therefore, sampling strategies used within qualitative research paradigms aim to direct the researcher towards identifying participants who can relate with/live with/have experienced the phenomena of interest (Schatzman and Strauss, 1973). Although generalizability is not at the core of qualitative inquiry, applicability and utility of the research findings are essential and fostered by appropriate sampling techniques and in-depth descriptions of the processes underpinning the qualitative inquiry (Coynei, 1997). Accordingly, the following sections provide a vivid description of the processes involved throughout the research.

Purposive sampling was employed in this research to facilitate identification of participants who could provide information-rich narratives that align with the research aims (Patton, 2002). Glaser (1998) buttresses the role of purposive sampling by proposing that initial sampling in GT proceeds through identification of knowledgeable participants around the area being investigated. In the current study, purposively sampling participants meant that patients and HCPs central to the understanding of CLBP beliefs and management were targeted, i.e., patients with chronic non-specific LBP, and doctors and physiotherapists involved with CLBP management. In addition, maximum variation sampling was adopted as an initial sampling strategy to maximize in-depth coverage of the agencies and structures that may underlie participants' beliefs and practices (Silverman, 2019). Therefore, participants were purposively sampled to include differing genders, years of work experience, ranks and socioeconomic status. According to Miles and Hubberman (1994), initial sampling across a variation of participants may suggest the researcher's foreknowledge of the entirety of variation to be uncovered in the research (Miles and Hubberman, 1994). However, in this research, maximum variation was intended to facilitate opportunities for extensive coverage of the beliefs that may pertain within different situations and thus foster opportunities for theoretical saturation. However, data and theoretical saturation were mainly facilitated by theoretical sampling.

Theoretical sampling is considered as a central approach in GT that drives the concurrent and iterative process of data collection and analysis (Glaser, 1998). Theoretical sampling drives the researcher to use the most appropriate sources and methods to proceed with data collection (Morse et al., 2009). Glaser (1998) describes theoretical sampling as a process of data collection that consists of coding and analyzing data as data collection proceeds in order to actively decide what data to collect next and where to collect the data from. Theoretical sampling is employed to ensure in-depth elaboration of an emerging category (Strauss and Corbin, 1990). Each category is tested against incoming data (constant comparison of data) until no new information is derived (data saturation) (Glaser, 1992). Strauss and Corbin (1990) elaborate on theoretical sampling by describing open, relational and variation sampling and discriminate sampling. Open sampling refers to "sampling those persons, places, situations that will provide the greatest opportunity to gather the most relevant data about the phenomenon under investigation" (p. 181) and is akin to purposive sampling. Relational and variation sampling involves comparing different situations emerging from data and theoretically sampling individuals or sites that can develop an emerging category or provide explanations for variations identified within dimensions of a category (Strauss and Corbin, 1990). Discriminate sampling relates to theoretically sampling participants in order to verify the dimensions and relationships established as well as developing poorly developed categories (Strauss and Corbin, 1990). Instances of relational/variation and discriminate sampling (theoretical sampling) in this study are presented in Figure 8. A total of sixty-three (63) participants: (thirty (30) patients, eighteen (18) physiotherapists and fifteen (15) doctors) were involved in this study. Theoretical sampling was initiated after an initial purposive sampling of ten patients, six physiotherapists and six doctors and preliminary coding and analysis of the interviews. Snowballing, which involved recruiting participants through already interviewed participants, was used to recruit doctors and physiotherapists.

Theoretical Sampling	**Identifying participants to densify and elaborate emerging categories and their dimensions (Relational/Variation Sampling)**	**Sampling across study sites to explore variations in data** **(Relational/Variation Sampling)**	**Sampling to verify relationships being established in the data** **(Discriminate Sampling)**
Examples	1. Later sampling of male and female patients to elaborate on the dimension of gendered psychosocial impact that appeared to be emerging from the data. 2. Sampling doctors who had previously experienced CLBP to further develop the dimension related to doctors' views about the seriousness of other comorbidities compared to CLBP. 3. Sampling higher-ranked doctors and physiotherapists to confirm/disconfirm the influence of the work environment on practice since higher ranked HCPs are more likely to practice independently.	Sampling across the two study sites to explore the reasonable variation in: 1. The views of physiotherapy involvement among doctors from the two sites and, 2. Timing of exercise prescription among physiotherapists from the two sites.	1. Sampling CLBP patients with other comorbidities to reconcile accounts from doctors suggesting that patients regarded CLBP as a less disturbing ailment. 2. Sampling patients who were self-referred for physiotherapy to verify if differing beliefs emerged, as a few physiotherapists suggested self-referred patients generally fared better. 3. Sampling patients and physiotherapists with the aim of verifying the emerging finding that suggested the influence of patients themselves on positive strategies.

Figure 8: Instances of Theoretical Sampling During the Research

3.4.5 Data Collection

Qualitative data may be accessed via observation, documents, videos, photographs, individual or focus group interviews (Anderson, 2010). Qualitative interviews are considered as social interactions that foster co-creation of knowledge between the researcher and the researched (Ryan, Coughlan, Cronin, 2009). This research utilized individual interviews due to its ability to facilitate in-depth exploration (Williamson, Given, Scifleet, 2018). Interviews may be unstructured, semi-structured and structured (Williamson, Given, Scifleet, 2018). While structured interviews appear to be more closely related to quantitative research paradigms, unstructured interviews and semi-structured interviews are commonly employed in qualitative research (Williamson, Given, Scifleet, 2018). Unstructured interviews are particularly useful in ethnographic studies and may adopt a more informal approach (Hammersley and Atkinson, 2019).

Semi-structured interviews were used to collect data in this research. Semi-structured interviews proceed with predetermined broad questions which serve as a guide (Flick, 2002). As the interview proceeds, prompts are driven by participants' narratives to enable full coverage of participants' stories (Flick, 2002). These ensure that interviews are contained within the boundaries of the research objectives; while giving room for flexibility (Charmaz, 2006). With CLBP beliefs being an under-researched area in the Ghanaian context, the use of semi-structured interviews provided the flexibility and direction required to investigate HCPs and patients' beliefs. Moreover, semi-structured interviews allowed for comparison across participants' narratives (DiCicco-Bloom & Crabtree, 2006). However, in this study, semi-structured interviews were not designed to stifle or harmonize all participants' narratives (Hill et al., 2005). Instead, each interview was uniquely guided by the personal meanings/beliefs of participants, with the open-ended questions serving as broad questions facilitating containment of the research around its objectives.

Three interview guides (one each for physiotherapists, doctors and patients) (Figure 9) were developed by exploring previous research conducted on CLBP beliefs and management in developing (Igwesi-Chidobe et al., 2017) and developed countries (Singh et al., 2016). Important areas of consideration (e.g., beliefs relating to CLBP causes) that would facilitate a comprehensive understanding of how CLBP beliefs affected CLBP management were then derived, ensuring coverage of the research objectives. Three pilot interviews (one doctor, one physiotherapist and one patient) were conducted to assess appropriateness of the interview structure and venue, and to highlight potential mishaps that may occur. The pilot interviews highlighted unclear questions and therefore one question was re-worded and further prompts were developed to enhance clarity and to drive the interaction further (e.g., prompts were added to clarify the question, what is your experience with managing CLBP?). In order not to exclude non-English speaking participants and potentially patients with low socio-economic backgrounds, interviews were conducted in a local language (Twi) for patients who could not communicate in English. English was however used for all HCPs since all educated persons in Ghana can communicate in English. Therefore, the topic guide for patients was translated to Twi. To enhance the validity of the translated topic guide the following processes were carried out: the translation was done by the researcher who is literate in English and Twi; the translated version was back translated to English by an independent Twi speaker; these were then compared by the researcher and another independent English speaker to ensure meaning was retained. The interview guide contained broad open-ended questions and prompts. In keeping with theoretical sampling and sensitivity, as data collection proceeded, several prompts were added to the guide (e.g., what do you think about the current state/capability of your back? Have you ever experienced LBP? Does it affect the way you manage patients with CLBP?) In the current study, previous interviews influenced subsequent interviews: when dimensions that were not captured in the interview guide emerged, they were explored in subsequent interviews. Prompts around who, what happened, why and how were frequently used throughout the interviews. Corbin and Strauss (2008) indicate that these questions are useful for building categories, dimensions and properties.

According to Ryan, Coughlan, Cronnin (2009), the interview questions, the questioning technique, listening and interviewer-interviewee relations impact on the data collected. The researcher made use of summarizing, providing non-verbal cues that signaled being attentive, verbal affirmations and contextualizing questions to enhance recall and provision of more practical answers from participants (Mason, 2002) (e.g., I am your patient today presenting with CLBP, kindly advise me on how to cope with the pain). Patients' and physiotherapists' interviews were conducted by the researcher in a room within a university building in both hospitals at suitable times indicated by the participants. The venue enhanced safety and provided a neutral environment away from the clinical environment or participants' homes. However, the doctors' interviews were conducted in the consulting rooms due to difficulties with recruiting doctors who were willing to partake in the interviews outside the consulting room (the influence of this is reflected upon in chapter 5). Sin (2003) suggests that the venue where data is collected may impact on the interviewee-interviewer dynamics and the meanings constructed by patients. Data was collected concurrently between both facilities. The researcher visited each study site thrice and spent between three to five weeks on each visit. Data collection spanned 8months. Data collection ended when preliminary analysis of the data suggested that no new information was emerging (data saturation) and emerging dimensions had been adequately explored as suggested by Strauss and Corbin . Interviews were audio-recorded and lasted between twenty (20) to forty-eight (48) minutes. The average interview duration was thirty-five (35) minutes. Out of the sixty-three (63) interviews, fifty (50) interviews were conducted in English and thirteen (13) were conducted in Twi. A diary was used to take notes during interviews, and reflexive notes throughout the research.

Patients Topic Guide	**Sample Prompts**
What do you think low back pain is? What is your understanding of low back pain?	• *What role do you think the spine performs?* • *What do you think caused your LBP?*
What is your experience with low back pain?	• *When and how did it start?* • *How has it affected your activities?*
How have you managed your back pain since it started?	• *How do you cope with the condition?* • *Where did you gain information regarding some of the coping strategies you are using?*
Why are you undergoing physiotherapy?	• *What are your expectations of the physiotherapy treatment you are receiving?* • *What factors inform your treatment expectations?*
Physiotherapists Topic Guide	**Sample Prompts**
What is your experience with managing patients with chronic low back pain?	• *How early do patients come to you? Do patients have any management preferences?*
What are your thoughts about the causes/risk-factors of CLBP?	• *What are some of the causes or risk factors you have identified among the CLBP patients you treat?*
What are your thoughts regarding treatment of CLBP?	• *What may constitute a typical line of management for a patient that comes to you with CLBP?* • *Any interactions with other HCPs?*
Doctors' Topic Guide	**Sample Prompts**
What is your experience with managing chronic low back pain?	• *What are some of the factors that prompt referral?* • *At what stage of back pain do the patients normally report their pain for medical care?*
What are your thoughts about the causes/risk-factors of CLBP?	• *What are some of the causes or risk factors you have identified among the CLBP patients you treat?*
What are your thoughts regarding treatment of CLBP?	• *What may constitute a typical line of management for a patient that comes to you with CLBP?* • *What do you caution them about? What advice do you normally suggest to them?*

Figure 9: Interview Guides and Sample Prompts

3.4.6 Data Analysis

Data analysis refers to how data is 'sorted, organized, conceptualized, refined and interpreted' (Thorne, 2000). It involves explicit analytic processes that transform raw data into a coherent depiction of the phenomenon being investigated (Thorne, 2000). According to Morse (1994), qualitative analysis involves understanding the phenomenon being investigated, synthesizing the data to establish relationships, theorizing the data to comprehend why and how the relationships occur and reconceptualizing the emerging results in the context of existing evidence/literature. In this study, the interviews were transcribed verbatim by the researcher. This enhanced the researcher's sensitivity to the data. Twi transcripts were translated into English to ensure analysis was transparent and verifiable by the research team. Five translated transcripts were randomly selected and back translated to Twi by an independent Twi literate and compared with original Twi transcripts to ensure meaning was retained. Each data set (patients, physiotherapists and doctors) was initially analyzed independently, and distinct categories, concepts and mechanisms derived for each. Later, a synthesis of all the data sets was conducted.

Microsoft word was used to analyze the patients' and doctors' data. Each transcript was coded line by line in Microsoft word and through constant comparison of data, texts referring to a code were grouped together (copy and paste) under the name assigned to the code. In addition, traditional methods such as multiple photocopies, coloured pens and sticky notes were used to identify initial codes and relationships. These provided visual cues that enhanced the researcher's analytical lens. According to Pope, Ziebland, and Mays (2000), although the use of paper and word processors may be considered old fashioned, word processors and paper methods may provide opportunities for more closeness with the data. Moreover, Microsoft word has features such as screen sharing, annotating and searching that facilitate the analytical process. As data analysis proceeded and the researcher gained more confidence in the analysis, the decision to use a software, NVivo, was made to facilitate data management, information retrieval, and introduce the researcher to an alternative and modern way in which qualitative data analysis is supported. Therefore, NVivo version 12 was used to analyze all the physiotherapists' data (identify codes and relationships and mechanisms and amalgamate codes into categories). Transcripts and codes of doctors' and patients' data were stored in NVivo. NVivo facilitates retrieval of data and codes and enhances systematic analysis and thus rigour of the analysis (Edward-Jones, 2014). It also provides sophisticated methods that enhance data analysis (e.g., using algorithms to identify codes occurring concurrently). In this study, the time spent to form codes and establish relationships when using paper and Microsoft word versus NVivo were comparable. According to Edward-Jones (2014) the use of software does not necessarily decrease the laborious work of analytical thinking to establish codes and links between data. Similarly, Maher, Hadfield, Hutchings et al., (2018) in their study on understanding research methods used by designers, validated the use of both traditional methods and software as an appropriate and rigorous method for improving data interaction and generating theory. All data storage was compliant with University of Nottingham (UoN) information goveklrnance regulations. Reflexive memos containing details of the analytic decisions that were made throughout the research were kept; and this provided an audit trail for the research (Corbin and Strauss, 2008). Diagrams were used at different points to conceptualize emerging ideas/relationships, and the final theory generated from the study. (e.g., Figure 9a was used at some point during the research to depict the core-category, mechanisms/factors and categories derived from the patients' data).

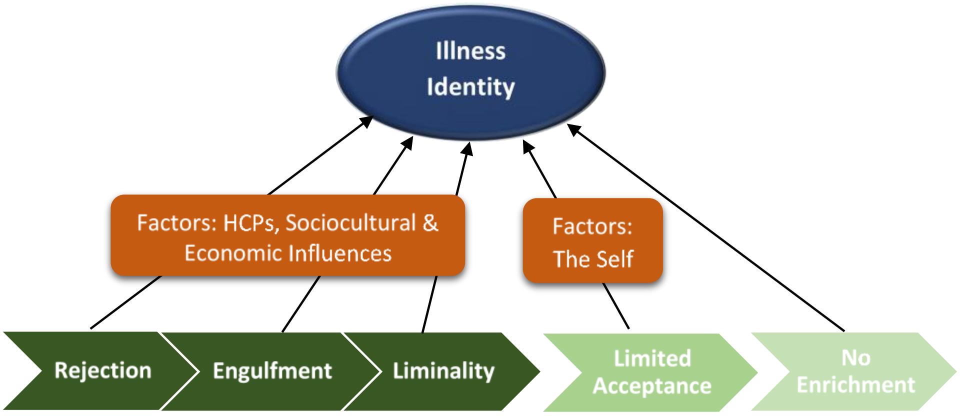

Figure 9a: Example of Diagram Used to Conceptualize Study Findings

Data analysis proceeded through open, axial and selective coding, constant comparison of data and theoretical sampling to aid interpretation and conceptualization (Strauss and Corbin, 1990). According to Thorne (2000), initial data analysis consists of reading and re-reading the data to identify phrases, incidents or behaviours. In this study, initial data analysis consisted of open coding through line-by-line analysis of the data. Descriptive and interpretative codes, derived from the meanings within the participants' data, were assigned to phrases and sentences. Thus, initial coding was an inductive process devoid of external interpretations from existing literature. Some phrases or incidents applied to multiple codes and when this was the case, all the codes related to the phrase were applied. Establishing relationships started in the open-coding phase; hence open and axial coding were carried out as fluid phases.

Axial coding consisted of identifying the relationships between the codes, and the mechanisms underlying the codes being generated (Strauss and Corbin, 1990). Using the coding paradigm, conditions, actions, interactions and consequences were identified. Identifying the codes and mechanisms involved the use of abstraction and induction. In deriving the mechanisms every phrase and sentence was questioned (e.g. What does the data suggest? What are the factors underlying these thoughts? What led to this belief? Why does this person think of this in this way? What does this represent collectively?) (Charmaz and Belgrave 2012, Strauss and Corbin, 1998). Far out comparison (Strauss and Corbin 1998) was also done to compare characteristics of persons who expressed beliefs that appeared to be at extreme/opposing ends. Further sampling of participants assisted in clarifying and generating plausible mechanisms. Transcription and open and axial coding identified new concepts and increased the ability to recognize elements that were relevant to the emerging knowledge and theory and thus served as starting frameworks for theoretical sampling. Theoretical sampling serves as the critical link between data collection and analysis depicting how knowledge produced was driven by data (McCann and Clark, 2003). Through theoretical sampling, categories were fully explored. An example of how theoretical sampling informed a concept in this study is presented in Figure 10.

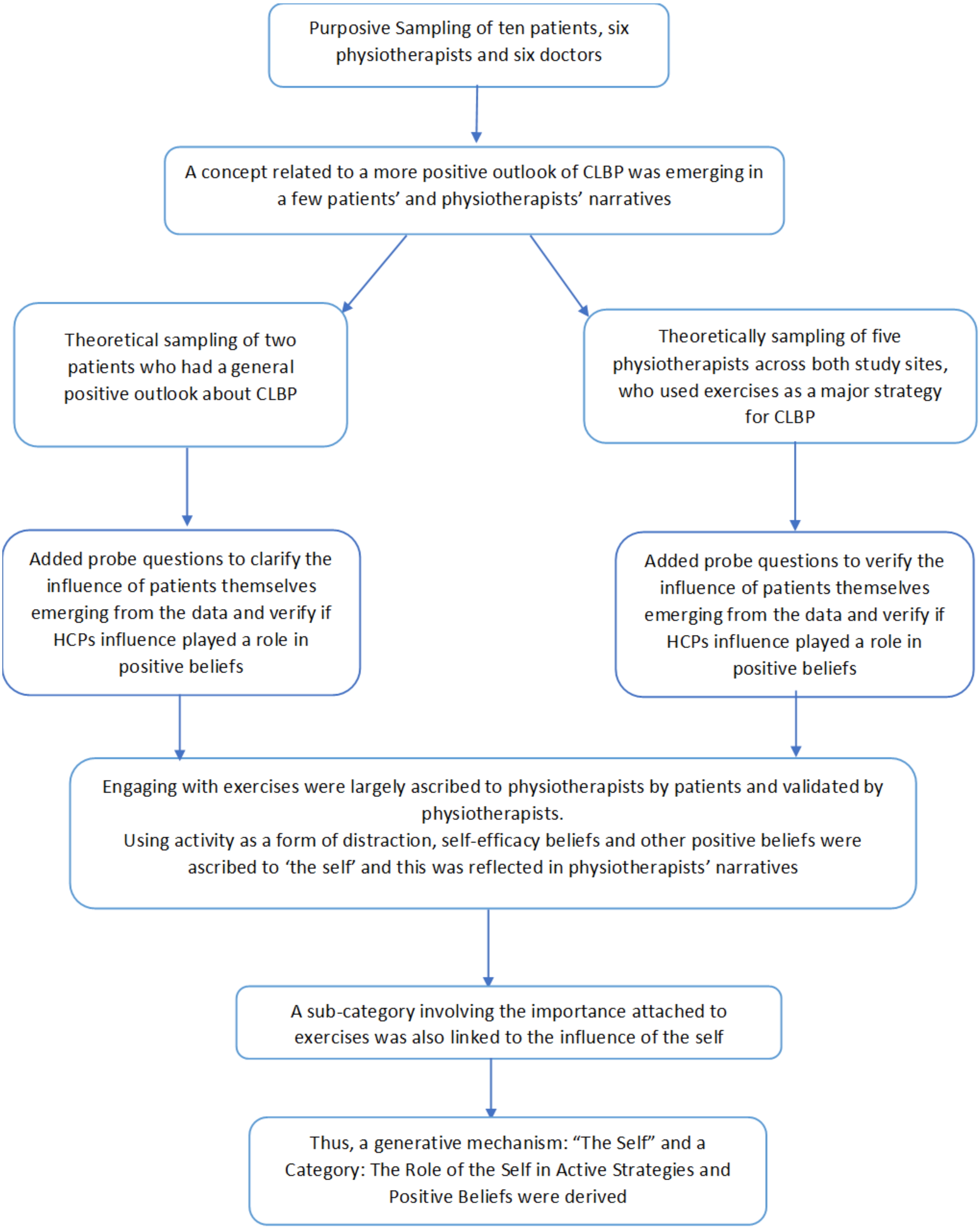

Figure 10: An Example of Theoretical Sampling in Practice in this Research

Concepts were derived by grouping similar codes. Concepts were guided by induction and thus mainly represented by a word/phrase that described the codes that formed the concept. Categories emerged by grouping concepts that related to a higher-level concept (a category) (e.g., Figure 10a). A category consisted of concepts and underlying mechanisms. Naming of the categories was guided by identifying a representation that adequately described the concepts that constituted the category, and how the concepts were described in the extant literature (deduction). According to Strauss and Corbin (1998), the use of induction, deduction and abstraction expands the analytical lens and power of the research. It is however worthy of mention that, the content of the categories was derived from the data (inductively) and through abstraction. Therefore, participants' narrations informed the analysis as opposed to existing literature. Through constant comparison of data, codes were checked against the data, data was compared to data, interview to interviews (within and across the three groups of participants), and categories to categories. Therefore, codes were sometimes revised or moved to different categories. Constant comparison ensured that each category represented all the nuances presented in participants' narratives (Glaser, 1998).

Category: Biomedical/Biomechanical Beliefs

Concept: Biomedical Causes

- Ascertaining the cause/Routine X-Ray Requests (Structural Defect)
- Imaging Should not be Prescribed for all LBP patients
- Structural Defects (Degeneration, Previous Trauma)
- Non-Specific LBP
- Specific Causes of CLBP

Codes

Concept: Biomedical Approaches/Advice

Central Focus on Medications

- Intermittent Long-Term Analgesics Prescription is the main/first line of management for CLBP (NSAIDs, Opioids (Strong Analgesics) Medication for Nerve Pain)
- Patients' Reportage of Ineffectiveness of Painkillers
- Muscle Relaxant
- Supplements (Mixed Views)
- Patients' Quest (Preference) for More (Strong Analgesics)
- Long Term Medical Visits (Dependency on Analgesics)

Concept: Biomechanical Causes

- Manually Intensive/Sedentary Jobs/Inappropriate Furniture/Prolonged Static Postures
- 'Bad' or 'Wrong' Postures

Figure 10a: An Example of Categories, Concepts and Codes Groupings

Selective coding involved identification of the core-category. The aim was to derive an abstract category that incorporated the identified categories and had a strong explanatory power (Strauss and Corbin, 1998). The core-category was identified with the help of memos and diagrams (Strauss and Corbin, 1998). Derivation of the categories for patients, physiotherapists and HCPs revealed similar categories across the data sets. Particularly, the doctors' and physiotherapists' data shared similar mechanisms. Therefore, a core-category each was contemplated for the patients' data and the HCPs' combined data. Identifying the core-category proceeded through induction and abstraction. It involved an iterative process of going back to the data and reflecting on the mechanisms derived from data to infer the central mechanism that holistically explained the categories derived. Two sub core-categories were derived (one for the patients' data-illness identity and one for the HCPs data-professional identity), then a single core-category that encompassed both sub core-categories were extracted (Figure 10b). These constructs will be discussed in detail in Chapter 7.

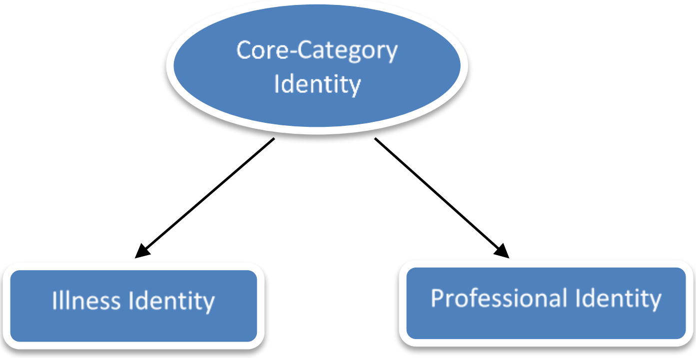

Figure 10b: Core-Category and Sub-Core-Categories

Although Straussian GT suggests engagement with literature, it disapproves of beginning GT research with a preconceived extant theory/theoretical framework (Corbin and Strauss, 2015) and this study adhered to this principle. Consequently, theoretical abstraction was carried out after substantive analysis and identification of the core-category. Further deduction and abstraction of the data to situate it within the theoretical contexts of existing research was embarked upon after derivation of the core-category. Theories that provided opportunities for holistic explanation of the sub core-categories and categories that had emerged from the data were used to interpret the data further. Strauss and Corbin (2008) suggest that theory verification could proceed through comparing generated theory with raw data. Therefore, this study verified the theory generated by revisiting the raw data (transcripts and initial codes) to ensure that the theory provided a comprehensive explanation that is coherent with the data collected.

3.5 Rigour

Rigour refers to processes that establish methodological robustness of the research in order to enhance confidence in study findings (Seale and Silverman, 1997). Lincoln and Guba (1985) emphasize rigour by suggesting four ways to enhance trustworthiness of a study: Credibility, Transferability, Dependability, Confirmability. Credibility refers to processes undertaken to enhance confidence in the findings as a true reflection of the phenomena that was investigated (Lincoln and Guba, 1985). Transferability implies how applicable the research is to different contexts. Dependability refers to the extent to which repeatable results can be derived and confirmability deals with the extent to which the findings reflect participants' representations and not the researchers' conceptions (Lincoln and Guba, 1985).

In this study, credibility was enhanced through: varied and considerable engagement with the study setting, the flexibility fostered by the use of semi-structured interviews, and the researchers' experiences (that is the researcher's familiarity with the research context and the expertise of the supervisors in qualitative research). Furthermore, credibility was enhanced by reading of initial interview transcripts by both supervisors and discussions around opportunities for prompting and ways to enhance in-depth interviews. As data collection proceeded, the data collected was discussed, including opportunities for theoretical sampling to enhance theoretical saturation. Dependability was enhanced through a rich description of the processes that constituted this study, as evidenced in this chapter and keeping an audit trail through NVivo and memo-writing. Confirmability was enhanced by being reflexive throughout the research; that is documenting how choices were made and how these may have affected the research. Furthermore, all derived codes and their iterations were read in the context of the raw data by both supervisors to ensure that codes and categories represented the data and not researcher's biases. The use of different participant groups also served as a form of triangulation to confirm emerging concepts. Finally, transferability was maximized through rich description of the research setting and participants, the application of maximum variation sampling, data and theoretical saturation and conducting the research in two different geographical settings in Ghana.

3.6 Ethical Considerations

Ethical approval was sought from UoN Faculty of Medicine and Health Sciences ethics committee, the research and development and institutional research boards of both study sites. Ethical considerations in research include confidentiality, anonymity and informed consent (Richards and Schwartz, 2002). Confidentiality in qualitative research refers to the researcher's commitment towards storage, handling and collection of data in a manner that information obtained is available to only the research team and is not inappropriately divulged (Bos, 2020). Anonymity refers to a process to ensure that participants in a study cannot be identified (Saunders, Kitzinger, Kitzinger, 2015). Anonymity is thought to occur on a continuum, and it is often argued that true anonymity is not practical especially in qualitative research (Scott, 2005). The aim is to maximize opportunities for protecting participants identities (Saunders, Kitzinger, Kitzinger, 2015). Informed consent relates to the researcher's responsibility of thoroughly describing all aspects of the research prior to commencement (Nijhawan, Janodia, MudduKrishna et al., 2013).

Informed consent is closely related to the principle of participants' autonomy in research (Hammersley and Traianou, 2012). Autonomy refers to respect for participants' values, rights and decisions (Hammersley and Traianou, 2012). This research ensured informed consent and autonomy by providing in-depth information regarding the research, contained in the PIS (e.g., objectives of the study, the type of information to be collected and which persons would have access to the data). Information sheets were explained to participants by the researcher and consent forms signed/thumb-printed by participants (depending on participants' literacy) prior to the interviews. According to Creswell (1998), during qualitative interviewing, consent needs to be re-negotiated on multiple occasions, and this was applied in the current study. Qualitative interviews may result in psychological distress, which may prompt the need for re-negotiation of consent (Hammersley and Atkinson, 2007). In this study, patients recounted unpleasant experiences linked to CLBP, which sometimes led to emotional expressions (e.g. crying). In such situations, the researcher provided comforting words and informed patients of their right to: halt the interview, withdraw from the study, request deletion of a particular section of the data, continue the interview when they feel ready to do so or seek further assistance regarding the issue that caused the distress. Three of such instances occurred during data collection; however, the participants opted to continue with the interview.

Voluntary participation was stressed in the PIS. Additionally, participants were informed about their right to withdraw at any point during the research. An awareness of the interpretive power of the researcher as a potential source of marginalization of participants' voices (Evans, 2013) guided this research. Therefore, the data analysis, including abstraction, was closely guided by participants' narratives. The use of quotes to support the derived concepts and categories also aim to preserve participants' voices.

To enhance anonymity, transcripts were de-identified and codes assigned to participants and sites. Confidentiality was ensured by locking hard-copies of data in a secured place and protecting electronic/soft-copies with encrypted passwords on the principal researcher's personal computer. The raw data was accessible to supervisors and the principal researcher only. However, processes such as dissemination of research may create potential challenges with anonymity and confidentiality (Saunders, Kitzinger, Kitzinger, 2015). Dissemination of research findings includes the use of direct quotes and descriptions that seek to contextualize the data, which may potentially increase tendencies for insiders to identify participants (Shaw,2008). Effort was made to exclude information that unnecessarily exposed participants' identities. In this study, two participants requested at certain instances to speak off recording at some point during the interview as they feared that they may be in the process of conveying information that may conflict with their employer's position. The researcher assured the participants of anonymity of information collected but reiterated that if the participants held that de-identifying the data would not be enough to mask their identity from employers, then the participant had the right to withhold the information. Participants were given the right to direct the extent of exposure regarding what they deemed relevant to CLBP and its management. However, if sensitive issues that could cause harm to the participants was disclosed, agreed processes with supervisors/gatekeepers were going to be followed (reporting to heads of departments/social work).

Privacy was ensured by conducting interviews in a safe and conducive room. No financial incentives were offered. The researcher approached data collection taking on the role of 'researcher' and not 'HCP' and therefore did not discuss individual cases or management that went beyond the research question.

3.7 Conclusion

This chapter presented the methodological conceptions and methods that underpinned this study. It explained the rationale for the qualitative methodology (grounded theory) and philosophy used in this study. It also provided an explanation of the processes of recruitment, data collection and analysis and ethical considerations that resulted in the findings that are presented in the following chapters.

Chapter 4: Transitioning from Biopsychosocial Beliefs to Biomedical Beliefs: Patients' Beliefs Regarding CLBP and its Management

4.0 Introduction

This chapter provides an in-depth account of patients' beliefs regarding CLBP in a Ghanaian context. Beliefs have been described as cognitive appraisals about possible truths without verification, and these 'supposed truths' subsequently become strong predictors of behaviour (Main et al., 2010). According to Rainville, Smeets, Bendix et al., (2011), in the event of adverse situations such as pain, the mind hypothesizes about the future implications of the pain and consequences of personal actions thereof. Beliefs are therefore a core part of chronic pain experiences and they affect the outcomes and prognosis of CLBP (Darlow et al., 2016). In addition to exploring the CLBP beliefs of patients, this chapter will provide in-depth insight into the management pathways pursued by Ghanaian patients with CLBP.

In line with critical realism and grounded theory, possible mechanisms underlying patients' CLBP beliefs and management will be uncoupled in this chapter. Consequently, an exploration of the influence of HCPs, sociocultural factors and socioeconomic impact on patients CLBP beliefs is presented. Furthermore, this chapter highlights the use of spirituality and family support as both maladaptive and adaptive coping strategies.

This chapter contributes important knowledge related to patients' beliefs about the causes, prognosis, management approaches, coping strategies and psychosocial impact of CLBP. Importantly, it adds valuable knowledge to the sparse research around patients' CLBP beliefs in Africa. In addition, this chapter highlights a unique finding that suggests Ghanaian patients may initially construct their CLBP experience within a biopsychosocial framework, which may be subsequently deconstructed into a biomedical framework following interactions with HCPs.

The chapter begins with a description of participants' demographic characteristics. The chapter is presented with five main headings: each heading describes a category, its concepts, and the mechanisms at play within the specific category. A summary of the five (5) categories, fourteen (14) concepts and ten (10) mechanisms derived is provided in Figure 12. This chapter ends with a personal reflection, summary and discussion.

4.1 Patients’ Demographic Characteristics

This study included thirty (30) patients (Figure 11). Sixteen participants were recruited from site 1 and fourteen participants from site 2. Most of the participants (20), were females and 10 were males. The age of participants ranged from 27 to 87 years (mean ± SD; 51.2 ± 13.1). The participants were either involved or had been previously involved in a variety of occupations. They were current and previous office workers (5), seamstresses (5), hospital workers (7), market women/traders (4), farmers (2), businessman (1), driver (1), planner (1), teacher (1), police officer (1), orderly (1), and journalist (1). Twelve (12) participants were self-employed, ten (10) were government employed and three (3) employed by a private entity. Four (4) participants were retired and one (1) unemployed.

Most participants, seventeen (17), were married, eleven (11) were single and two (2) widowed. The least duration between reporting CLBP at the hospital and being referred by a doctor/relative/friend to be seen by a physiotherapist was 2months, with the maximum duration being 25years. Most of the participants (19) had waited at least one year (due to late referral) between their first medical visit and their first physiotherapy attendance.

Patient No. Site 1	Age	Gender	Occupation	Employment Sector	Marital Status	Pain Duration	Time Since First Medical/ Physiotherapy Visit	Language Used
P1S1	40	Female	Pharmacy Technician	Government sector	Married	3years	3years/2weeks	English
P2S1	69	Female	Retired Seamstress	Formerly Self-employed	Widow	8years	3months/1month	Twi
P3S1	37	Female	Seamstress	Self-employed	Married	1year3months	1year3months/2months	Twi
P4S1	37	Male	Driver	Self-employed	Single	7months	4months/3weeks	Twi
P5S1	46	Female	Former Seamstress	Unemployed/Formerly self-employed	Married	18years	18years/3months	Twi
P6S1	64	Male	Farmer	Self-employed	Married	2years	2years/6months	English
P7S1	33	Male	Journalist	Government sector	Single	1year 3months	8months/2months	English
P8S1	45	Male	Manager(Telecom Company)	Private sector	Married	12years	12years/4years	English
P9S1	63	Female	Nurse	Government sector	Single	25years	25years/1month	English
P10S1	64	Female	Farmer	Self-employed	Single	5years	5years/1month	Twi
P11S1	62	Female	Trader	Self-employed	Single	5years	4years/1week	Twi
P12S1	43	Female	Seamstress	Self-employed	Married	5years	5years/2weeks	Twi
P13S1	43	Male	Voluntarily Retired Banker	Formerly Private sector	Married	4years	4years/3years6months	English
P14S1	55	Female	Market Woman	Self-employed	Single	6months	6months/2weeks	English
P15S1	63	Female	Retired Planner	Government sector	Married	8years	5years/7months	English
P16S1	27	Female	Nurse	Private sector	Single	2years	1year/1month	English
Site 2								
P1S2	68	Male	Retired Airline Official	Formerly Private sector	Married	13years	13years/3years	English
P2S2	55	Female	Shopkeeper	Self-employed	Single	2years	2years/1month	Twi
P3S2	50	Female	Telephonist	Private sector	Married	4years	4years/2weeks	English
P4S2	48	Female	Trader	Self-employed	Married	5years	1year/6month	Twi
P5S2	87	Female	Retired Nurse	Formerly Government sector	Widow	3years	3years/3months	English
P6S2	53	Female	Nurse	Government sector	Single	18years	3years/2years	English
P7S2	35	Female	Seamstress	Self-employed	Married	5months	5months/1month	Twi
P8S2	57	Female	Office Worker	Government sector	Married	>10years	3years/8months	English
P9S2	32	Female	Nurse	Government sector	Married	7months	7months/3weeks	English
P10S2	62	Female	Trader	Self-employed	Single	1year	3months/2weeks	Twi
P11S2	48	Male	Business Man	Self-employed	Single	2years	2years/2weeks	Twi
P12S2	51	Male	Orderly	Government sector	Married	>1year	3months/1week	Twi
P13S2	46	Male	Police Officer	Government sector	Married	6months	3months/2months	English
P14S2	52	Male	Teacher	Government sector	Married	6months	2months/1week	English

Figure 11: Demographic Characteristics of Patients

Categories	**The Facilitated Quest for Legitimacy: Bio-medical/mechanical Beliefs**	**The Consequences of Healthcare and Sociocultural Influences: Maladaptive Beliefs and Behaviours**	**The Role of 'Self' in Facilitating Positive Beliefs and Active Strategies**	**The Psychosocial Impact of CLBP**	**Limited Physiotherapy Knowledge and Awareness**
Concepts	Structural Defects as Underlying Biomedical Causes	Mal-adaptive Beliefs ➢ Maladaptive Meanings and Causes ➢ Fear-Avoidance Beliefs ➢ Catastrophizing	Positive Beliefs ➢ Self-efficacy ➢ Other Positive ➢ Beliefs	Emotional Distress Fear: ➢ Of the future ➢ Of Toxicity	Limited Physiotherapy Knowledge
	Posture and Occupation as Underlying Biomechanical causes	Maladaptive Behaviours ➢ Passive Self-Coping ➢ Passive Physiotherapy and Medical Strategies ➢ Multiple Health-Seeking Consultations	Active Strategies ➢ Prescribed Exercises ➢ Activity as a form of Distraction ➢ Spirituality	Loss: ➢ Of Self ➢ Of Roles Stigmatization and Marginalization	Limited Physiotherapy Awareness
	Quest for Cure Including Cure of Underlying Biomedical cause			Lack of Social Support ➢ Financial Burden ➢ Family and Friends Support	
Mechanisms	Patients' & HCPs' Biomedical/mechanical Orientation	HCPs' Bio-medical/mechanical Orientation	Patients' Personal Convictions/Inherent Beliefs	Patients' and HCPs' Bio-medical/mechanical Orientation	Physiotherapy Visibility
	Patients' Biomedical Expectations (diagnosis & treatment)	Sociocultural Beliefs		Sociocultural Beliefs	
				Socio-economic Impact	

Figure 12: Categories, Concepts, Mechanisms

4.2 The Facilitated Quest for Legitimacy: Bio-medical/mechanical Beliefs

All participants expressed bio-medical/mechanical beliefs concerning CLBP. The participants often related the cause of CLBP to a biomedical or biomechanical cause. This belief of a biomedical or biomechanical cause appeared to be facilitated by HCPs. For instance, a sixty-two-year-old female trader, formerly a rural dweller involved in farming activities, describes her bio-mechanical/medical beliefs below.

"…The doctor said my waist the bones have squeezed together so the nerves cannot pass through…My mind tells me that perhaps some hard work that we do. Because the person I stayed with, we used to plant yams, we used to make mounds. Sometimes a day you would make 10. I think that would be a part of it. We used to carry heavy things, we carry plantain, and the journey was far" (P10S2).

There was widespread indication among participants that the goal of seeking care was to get a cure, as described by a thirty-three-year-old male journalist who was on sick-leave. He was convinced the presence of pain indicated a pathology that needed correction.

"But I believe that there is this problem there and it needs to be corrected and at the end of the day I'd receive this treatment and I'd be fine" (P7S1).

Participants' biomedical beliefs (including their journeys towards achieving a legitimization of their condition through diagnosis); biomechanical beliefs related to posture and activity; and participants' goal for a cure and how these are facilitated by HCPs are discussed in subsequent sections.

4.2.1 Structural Defects as Underlying Biomedical Causes of CLBP

4.2.1.1 *"I just wanted to know is there any defect?"* Patients' Quest for Legitimacy

All the participants believed they were experiencing a sickness or a disease. Also, the commonest local name for LBP used by the participants, when directly translated to English reads, 'waist sickness'.

"Waist sickness is something that grips your back…" (P2S1, 69year-old-female, retired seamstress).

Participants' language often depicted the need for causal explanations of their chronic pain from medical encounters. Doctors were perceived to be responsible for offering causal explanations. Also, participants' language (the use of us and we) depicted this was a collective belief within the Ghanaian sociocultural space.

*"**Those of us** who have the back pain **we** do not really know what the cause is so **we** would like the doctor to tell us that this is what causes it" (P3S1 53year-old-female, seamstress)- emphasis added by author.*

Patients' accounts depicted a search for legitimacy, which included a definite diagnosis. Participants believed there was a definite cause for their pain which needed to be unraveled. They had also come to believe that radiological imaging was needed to unravel the cause of their CLBP.

"We (doctors and patient) had gone for X-rays month in, month out, week in, week out, trying to figure out what was really the issue, but it wasn't showing up, until one day one of them disclosed that there was a problem with my L4/L5 spine" (P7S1, 33year-old-male, journalist).

All the participants had come to believe that the presence of a structural defect (e.g., of the disc or lumbar vertebrae) was the cause of their CLBP, after receiving imaging results. All the participants indicated a biomedical diagnosis given by their doctors, following the outcome of an X-ray or MRI. All the participants reported having had more than one imaging, with about half of the participants having had both an X-ray and an MRI. This is described below by a thirty-two-year-old female nurse.

"It was when I took an X-ray, and my director (a doctor) was like I should go for an MRI. So, when I went for the MRI, the X-ray and the MRI report was almost the same.

Interviewer: Why did they ask you to take the MRI after taking the X-ray?

Participant: They said the MRI, you know some of the X-rays they would tell you that they didn't see anything. But the MRI would confirm. The doctor told me the problem is not coming from the backbone but it's from the disc" (P9S2).

Some of the participants who had not received an MRI reported that this was due to financial constraints. This situation is described by a fifty-five-year-old female shopkeeper who experienced movement difficulties and restricted participation in work and social activities.

"...and the doctor asked me to come, and he said either I do something called MRI that one is expensive, so for the meantime he will give me a referral letter to come for physiotherapy and we take the medications too and see what God would do" (P2S2).

Some participants reported anxiety related to not being given a diagnosis, albeit having received imaging. This prompted further imaging and changing healthcare providers until they were given a diagnosis. This is described by a middle-aged male manager who reported working from home during exacerbations. He appeared to need the diagnosis for personal acceptance of his situation.

"I just wanted to know is there any defect? They would ask you to go for X-ray and then they'd go through and say (hisses) there's nothing wrong. Meanwhile I still feel the pain. I went there, I came to K for MRI, then they said there was no deformity but, certain lumbars at my back from the MRI report, it seems lumbar 3, 4, 5 have expanded" (P8S1).

A young female nurse (P16S1) also reported relief associated with imaging results, when the findings suggested minor defects.

"At first I was not feeling happy but when I went for the MRI this year January, all the report was normal it was not all that serious, so I am ok" (P16S1, 27year-old).

The next section describes participants' beliefs of the events that might have facilitated the development of these structural defects and/or CLBP.

4.2.1.2 *"It's like a brand-new car, when you … overuse it, in a short while the car gets weak":* Biomedical Causes of Structural Defects/CLBP.

Initially (before HCP visits), participants explored a variety of issues that might offer a possible biomedical cause for CLBP. There was a widespread indication that CLBP resulted from previous lifestyle, and these are discussed throughout this section.

"Do I even know? I can't even tell if it is working, or it's the food we eat, or it is when you bend and get up whether that's what causes it. It has just come upon us, and we are suffering" (P10S1, 64year-old-female, farmer).

Some participants believed LBP was caused by falls and accidents. Among those who held this belief, the majority associated previous falls or accidents that had occurred years ago (in the case of the sixty-two-year-old female trader, >30years) as the possible cause of their current pain. Therefore, revealing participants' tendencies to link cause and effect irrespective of the time that had elapsed since the causal incident.

"I fell and hit my waist onto the ground around 82, 83. When it happened nothing happened to me, and I took it to the hospital. That time I was even pregnant. Nothing happened to me, it was later that I realized that perhaps my waist, it is now that the symptoms are showing" (P10S2).

Two young participants (P7S1 and P9S2) recalled how the belief that LBP resulted from trauma caused them to ignore LBP symptoms until the symptoms became severe. According to these participants, their initial thought was, since they had not been involved in any trauma, the pain they were experiencing could not be serious.

"Because I've not fell, I've not gotten any accident…, so I didn't give it the necessary attention until it got too serious" (P7S1, 33year-old-male, journalist).

Another common cause of LBP reported by the participants was degeneration resulting from overuse of the body. They believed their backs were worn out as a result of age and/or an aggregation of work/sporting/domestic activities over time. The belief that increasing age facilitated LBP was commonly expressed in both elderly and young participants. It appeared that participants had gained this knowledge related to degeneration from HCPs and began to add their personal layers of interpretation by reflecting on their previous lifestyles and livelihoods (the influence of HCPs' interactions is discussed in section 4.2.4). A sixty-four-year-old female farmer who had stopped farming due to CLBP and was employing the services of labourers on her farm likened the overuse of the body (indulging in stressful activities) to overusing a brand-new car. She explained how overusing a brand-new car could cause it to deteriorate quickly and hence, the back could suffer the same fate.

"So, imagine carrying a child at your back and bending to work, you lift things. When I'm going to the farm, I am carrying a child at my back. When you're uprooting a plantain stem, there is a child at your back; and you bend to plant. Sometimes there is no one around to help you carry the load on your head. You arrange it and try to gently carry it on your head yourself. So, I feel all these things that you do as you grow up. It's like a brand-new car. When you buy a brand-new car and overuse it, in a short while the car gets weak. So, I feel that is a contributing factor" (P10S1).

"Hmm I think it's with ageing. Because when I was young, I was not feeling any pain, now the back is not like before" (P8S2, 57year-old-female, office worker).

Some participants recalled how low socioeconomic conditions, lack of male spousal support and rural dwelling during their earlier years facilitated overuse of their bodies. According to the participants, rural dwelling and low socioeconomic conditions were associated with farming activities, serving as house-helps and carrying heavy loads and these activities encouraged overuse and damage to the back structures.

"Stress caused it (LBP). In the beginning I didn't have a helper for myself and my kids. In the beginning the man was not paying attention to me. So, I was also forcing to get my children to a certain standard. So, I had to work hard to take care of them" (P14S1, 55year-old-female, market woman).

Three male participants whose jobs demanded driving for long hours (P4S1, P13S1, P8S1) believed poorly maintained roads with potholes were a contributory factor to LBP.

"Our roads are bad so if you stay in the car often and it falls into potholes that too can cause it" (P4S1, 37year-old-male, driver).

Some female participants also expressed thoughts regarding gender being a predisposing factor to CLBP. They expressed concerns related to women's physiological roles (pregnancy, childbirth and menopause) which may impose undue pressure on the back structures.

"I see that a lot of women are suffering from waist sickness. With the women I am not sure if it's the childbirth that gives us this waist sickness. Because when you look, women with waist sickness are more than men with waist sickness. So, I think the women it's perhaps childbirth or the time we are ending our period (menopause) is what brings about the waist sickness" (P10S2, 62year-old-female, trader).

The subsequent section discusses how participants related their understandings of the biomedical causes of LBP to the functioning of the back.

4.2.1.3 *"It's just the pain but I think it (the spine) is strong":* The Capability of the Back

In line with biomedical thinking, some participants believed their back was weak. The presence of pain indicated underlying anatomical defects and thus the spine had reduced capacity to perform its role of aiding movement and function. A forty-six-year-old male police-officer who lifted heavy weights as a hobby and for enhancement of his work describes this belief below.

"You know once there is a damage, definitely its function would reduce. It would not perform the function as it used to be without the pain. I think once this uneasy comes definitely I'd say it's somehow weak" (P13S2).

However, while other participants in the current study acknowledged the back was impaired, they still held the belief that their backs were still capable of performing its role.

"I think it is only because of the pain. It's just the pain but I think it is strong. It still has that capacity to perform its functions" (P15S1, 63year-old-female, former planner).

The belief of a defected but capable back may be an indication of patients' resilience. It may also be tied with participants' rejection of a sick-role/identity, and in line with making positive self-statements which facilitates coping with CLBP (Cabak et al., 2015), as exemplified in the narrative of a 48year old businessman.

"As for me my back has strength, until you people teach me otherwise" (P11S2).

The case of the 35year old seamstress (P7S2) explicates how the belief of a defected but capable back sometimes did not match participants' practices. Although she had considerably reduced performance of her domestic and work roles, she indicated that despite her pain, the back could perform its functions.

"I feel it at my back coming into my legs. It really hurts. No, no, no, it (the strength) has not reduced, it's just the pain. I have stopped sewing, and a lot of house-chores. I want to see how things would go" (P7S2).

Therefore, some relevant others (e.g., HCPs or family) may be responsible for the dissonance between her personal beliefs and practices.

"I don't know whether it's the sitting because I sit on a chair like this and use a foot machine. It was when I came to the hospital, through conversations with doctors I thought about it that the sewing may be a factor" (P7S2).

The belief about the weakness of the spine was as common as the belief about the capability of the back. Out of the twenty-two narratives that included discussions around the strength of the back, ten participants indicated that they believed the back was defected but capable, while twelve participants believed the back was weak and had decreased capacity. The following section discusses patients' beliefs about the biomechanical causes of CLBP.

4.2.2. *"I am thinking of us (nurses) lifting patients…"*: Posture and Occupation as Underlying Biomechanical Causes of CLBP

All the participants upheld biomechanical beliefs that implicated posture and occupational-related activities as causes of CLBP. The participants held the belief that there was a right and wrong way of performing every domestic and work activity, which was mainly dependent on the posture adopted. An eighty-seven-year-old retired female nurse demonstrates this belief of how postures adopted at work could contribute to LBP.

"I am thinking of us lifting patients and all that. We were not in good position as we should have been maybe and that has affected the spine… But sitting not sitting properly may cause it" (P5S2).

Also, participants believed that adopting prolonged static postures (e.g., prolonged sitting/standing/bending) could cause or worsen CLBP.

"My posture, sitting posture. Doing one thing for long, sitting continuously is the cause" (P13S1, 43year-old-male, retired banker).

According to participants, a category of postures constituted 'bad' postures. These 'bad' postures were bending forward 90^0 and sitting with a slouched or bent posture. The belief was that sitting and all other activities (e.g., sleeping, driving and lifting) demanded the use of an upright posture. Most participants believed furniture played an essential role in enhancing maintenance or adoption of right postures. The use of ergonomically inappropriate furniture was believed to cause or worsen CLBP. The most frequently mentioned furniture were office chairs and mattresses.

"How we do our everyday things like picking up heavy objects wrongly, wrong postures, especially the seats that we sit on at work. I think mine that was one of the major things. And wrong posture for carrying things. Even some of our seats are kind of reclined. So instead of your back being straight and so I think these are some of the causes" (P15S1, 63year-old-female, former planner).

All participants also expressed the belief that manually intensive jobs (such as farming) and/or sedentary jobs involving prolonged sitting (such as office workers, seamstresses, drivers, and market women) were possible causes of CLBP and worsened CLBP.

"I think farming activities too can also cause, maybe from the farm you want to lift something which most at times we do it alone. You want to do it at all costs even though you realize that it's not comfortable. But we end up lifting it at all cause. Those things can also bring an impact" (P14S2, 52year-old-male, teacher).

The emphasis on biomedical and biomechanical beliefs facilitated expectations of a cure as expressed by the participants. This is discussed in the following section.

4.2.3 *"…seeing is believing… so maybe a scan to look at the defect if it has corrected"*: Quest for Cure.

Participants, having espoused biomedical causes, hoped for a treatment which was going to cure their pain and structural defects (the biomedical model). For the majority of the participants, the belief was 'cure means no pain', returning to previous activities and correction of structural defects. These were the general treatment goals held by most participants.

"And now they are saying the spaces have closed. So, I am praying that the way God created it with the spaces, it can open up that way (laughs)" (P12S1, 43year-old-female, seamstress).

"To be healed off, I was expecting that at the end of whatever it is I could go back to normalcy, whatever it is that I used to do, I could revisit my old days and do it myself without any form of challenges or pains" (P7S2, 33year-old-male, journalist).

In some cases, participants felt unwell and incomplete even in the absence of symptoms, as long as structural defects persisted. The hope for biomedical signs on radiological imaging to signify cure from CLBP was evident in the narrative of a fifty-two-year-old male teacher who reported absence of symptoms.

"But now I don't feel sick anymore…looking at the MRI …, I was told that there are some defects… The disc I don't know whether it's coming out or something and it needs to be corrected, even though the pain may go but I mean. Because the thing is within, seeing is believing so until maybe the doctor may ask you go and do maybe scan to look at the defect if it has been corrected. I've

been given some capsules, two different types. I'm told it's not pain-killer but one that would correct the defect" (P14S2).

In addition, some participants reported the need for total or complete healing because they did not want the pain to resurface again, signifying the belief of an endpoint to CLBP.

"It is better now, at first I couldn't even sit straight. I want it to go completely. I don't want to experience it again, so that I would go back to my gym" (P13S2, 46year-old-male, police officer).

The next section discusses a predominant mechanism underlying patients' biomedical and biomechanical beliefs and quest for cure.

4.2.4. The Influence of HCPs[2]

4.2.4.1 Biomedical Causes

There was a strong indication from patients' narratives that HCPs (mainly doctors and physiotherapists) reinforced or introduced the belief of a structural defect as the underlying cause of CLBP.

According to the doctors[3], when I went that's when they were saying the reason for this waist pain is due to something, they call nerves. Then they showed me the skeleton and said the spine at our back, there are some ropes holding them and sometimes these ropes get twisted. When that happens that is what gives us the pain and then that holds our legs" (P2S1, 55year-old shopkeeper).

In some circumstances, participants indicated they knew nothing about the causes of LBP, until they had interactions with HCPs and these causes were explained to them (e.g., degeneration, over-working).

"…As for that I don't know. It's when I went to the hospital that they said some it's because of stress (working excessively). Some are also due to age. Yes, the doctor. As for mine my mind tells me that it is stress. It was when I brought the X-ray that they said my backbone some of them have worn off" (P14S1, 55year-old-female, market woman).

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[2] The influences of HCPs discussed throughout this chapter were reported by patients who participated in this study.

[3] **Doctors**: In this study, and as pertains among Ghanaians, HCPs are generally referred to as doctors. Therefore, in this study, the use of the word doctors in the quotes refers to a medical doctor and/or a physiotherapist. However, the context proceeding/preceding its use clarifies the particular HCP(s) being referred to.

Most participants indicated being unaware of the fact that back structures could have any defects in them and thus cause pain. According to the participants, this knowledge was acquired from HCP interactions.

"Since it started hurting and I came to hospital that's when I found out that there are some steps at our back that anytime it develops a problem, that's when it makes your waist hurts" (P12S1, 43year-old-female, seamstress).

Also, HCPs played the role of substantiating patients' uncertain beliefs regarding overuse of the body as a cause of CLBP. This 46-year-old female and former seamstress demonstrated how the doctor's explanations reinforced her initial, tentative beliefs.

"One day I asked someone. I do not know if it's because I used to sew that's why it came about. I think myself why it came about. At times I think or maybe I fell. One day I was walking and slipped and fell. I don't know whether that's why this happened. So, when I went to the doctor, he started asking what work I do and he said sometimes overworking yourself can cause it" (P5S1, 46year-old-female, former seamstress).

Moreover, as mentioned in section 4.2.1, HCPs facilitated the participants' quest for legitimacy through imaging requests and proffering of diagnosis based on imaging results, as imaging served to visualize an invisible source of pain.

Participants' reported influence of HCPs on their biomechanical beliefs is described below.

4.2.4.2 Biomechanical Causes

Participants' accounts denoted that HCPs facilitated or introduced biomechanical beliefs related to CLBP. The only exception to HCPs' influence on patients' biomechanical beliefs was participants' personal experience with lifting load or engaging in exercises and subsequent onset of LBP some days after. The fifty-two-year-old teacher, for instance linked an episode of lifting to the onset of his LBP.

"I would say lifting because that was the last thing I did before this pain started. The last thing I lifted was gas cylinder, the big one is it 14inches, it's a bit heavy then I lifted it from outside the gate into the kitchen. Then the following week was when it started" (P14S2).

Most participants reported that they were introduced to the notion that certain postures and activities could cause or worsen CLBP by HCPs. HCPs facilitated the belief that prolonged static postures, assumption of 'bad' postures, performing manually intensive jobs, sedentary jobs and lifting heavy objects could be responsible for, and worsen, CLBP.

"From experience, meeting lots of physicians and advice, I've realized that how we sit. Our sitting posture and then the type of chair we use, the type of work we do. And the number of hours we sit... Yeah that's what I remember for now. I'm looking at my new chair which could be, you know when the work pressures are many" (P8S1, 45year-old-male, manager).

Also, the participants reported that HCPs informed them about the role of mattresses and chairs in enhancing wrong postures, hence causing or worsening CLBP.

"He (HCP) said as human beings, maybe the foam you lie on. Some people have slept on it for a long time. Or you work in the office and have sat on the chair for a long time. The position. Maybe everyday you've done this. You do that for a long time, so the body adapts to whatever you give it. So, as you're growing and you're changing, that too can bring about the pain. When he said it I said it is true because the foam that I sleep on when you lie on it, by the time you wake up you realize it has sank in" (P2S2, 55year-old shopkeeper).

4.2.4.3 Quest for Cure

Another important finding of this study was that the narratives of almost half of the participants depicted that the belief regarding a cure of structural defects emanated from HCP interactions.

"So, when I came to the physiotherapist, he explained to me that the nerves…that we will use the heat and the massaging to cure it. I am praying that just like the doctor said, the back will heal properly" (P6S2, 53year-old-female, nurse).

The other half of the participants indicated that they previously held the belief that a cure was the goal, however HCPs' interactions contradicted this belief, and they were educated that CLBP management was the goal rather than a cure.

"When I came first, I asked them if the treatment will let the pain stop? And they explained to me that they're managing the pain. Last time I asked D. I told him the fact that the X-ray report says there's a space at my L2/L3 and will this help me to close the space? And he said that no, as for closing the space, its only surgery but they are just managing the pain" (P1S1, 40-year-old-female, pharmacy technician).

It is therefore unclear whether this is a result of misinterpretation of HCPs' information or if this belief was also supported by HCPs and transferred to patients during therapeutic encounters. The subsequent section discusses maladaptive beliefs and behaviours expressed by the study participants.

4.3 The Consequences of Healthcare and Sociocultural Influences: Maladaptive Beliefs and Behaviours

Maladaptive beliefs are described as beliefs that are unhelpful, unsubstantiated and in most cases foster unhelpful behaviours (Dagenais and Haldeman, 2012). According to Main et al., (2010) maladaptive beliefs, particularly those concerning activity and work, are strong determinants of pain intensity, disability and return to work. Maladaptive beliefs and behaviours were expressed by all the participants.

Subsequent sections discuss specific maladaptive beliefs and behaviours expressed by participants and the mechanisms underlying these beliefs. The discussed maladaptive beliefs are unclear meanings and causes, catastrophizing and fear-avoidance beliefs. The maladaptive behaviours discussed are passive self-coping and management mechanisms and passive physiotherapy and medical management.

4.3.1 Mal-adaptive Beliefs

4.3.1.1 *"I thought I have some malaria":* Unclear Meanings and Causes

Some of the participants' narratives portrayed uncertain meanings and causes related to CLBP. It appeared that as participants expressed CLBP understandings explained by HCPs, they used incorrect phrases and expressed limited knowledge of the causes of LBP. However, participants generally had a basic understanding that their symptoms originated from the back structures.

> *"I mean back pain is an uneasy feeling at your back, could be maybe in the spinal cord, could be maybe at your hips" (P14S2, 52-year-old-male, teacher).*

A few participants suggested confused causes. Three participants suggested food was related to the cause and course of CLBP, hence certain foods had to be avoided or encouraged.

> *"The way we eat too sometimes it also affects you. You know when you are going through some pains or sickness, I think there are some foods you should avoid. That one nobody taught me but maybe there shouldn't be too much oil in your food, but you should concentrate on fruits or vegetables" (P13S2, 46-year-old-male, police officer).*

Two participants related the cause of CLBP to hemorrhoids and another participant reportedly believed malaria could induce CLBP.

> *"So, all that I was passing through I thought I have some malaria or something like that" (P4 Site2, 48-year-old female, trader).*

From the narratives above, it appears that the causes related to food, hemorrhoids and malaria were not facilitated by HCPs. Another finding was that spirituality was used as a basis to explain the cause of CLBP. Spirituality was used by a fifty-three-year-old nurse to ascribe the cause of her CLBP to evil deeds perpetrated by others unto her.

"But you see I saw a friend who gave me some solution to rub around my waist in the night. The first day I rub it, the second day, the third day I had a dream. Three people were holding my waist. I saw this wonderful person. Could you believe that the next day I saw this nurse, she couldn't look at my face. She bowed her head so the dream I had is true. So sometimes you see people relate this illness to spiritual, you can't blame them" (P6S2).

This nurse interpreted and coped with CLBP mainly within the framework of her working environment, blame, spirituality, HCPs' visits and avoidance of medication. After her spiritual revelation and medical interventions, her CLBP experience included confrontations with her superiors at work, avoidance of certain activities and numerous sick-leave periods. Although she was undergoing physiotherapy, had received a spinal injection, and was seeing her doctor, she attributed improvement in her condition to the use of ash prescribed by her spiritualist.

Demonic reappraisals such as those expressed by this nurse are regarded as unhelpful spiritual coping styles since they facilitate emotional distress, decreased physical and mental well-being and decreased quality of life (Pargament et al., 1997). This belief that spirituality is a possible cause of CLBP appears to originate from socio-cultural dispositions. Although it may be important to shift patients' focus from a purely spiritual perspective to more biomedically tailored explanations, this approach is not without consequences. One of such consequences, fear-avoidance beliefs is discussed in the subsequent section.

4.3.1.1 *"…when they (HCPs) say don't bend it means strictly don't bend"*: Fear-Avoidance Beliefs.

According to the theory of planned behaviour, individuals' beliefs and behaviour depend on their beliefs about the consequences of a specific behaviour (Ajzen, 1985). Therefore, since patients believed harmful activities and 'wrong' postures were causes of CLBP, they believed potential causes of their pain should be avoided. Hence, they upheld various FABs. All the participants' accounts depicted these FABs were normally prescribed and reinforced as coping strategies by HCPs.

"I can do everything I used to, but I just don't want to encounter any problems so now I've decided not to lift heavy loads. If you get to know this is what you did previously and brought some problem to you, you wouldn't go back doing the same things…" (P7S1, 33year-old-male, journalist).

The next section depicts how FABs translated into total avoidance of particular activities by participants.

4.3.1.1.1 Total Avoidance of Activities

The participants expressed various FABs, relating to avoidance of 'wrong' postures. 'Wrong' postures were generally described by participants as postures that compromised maintaining a straight back. All the participants mentioned avoiding bending; hence activities that demanded bending were either totally avoided or modified, ensuring the use of a straight back. Other postures that were avoided included 'wrong' sitting and sleeping postures (that is, prone lying, slouched sitting or sitting without a back rest). All the participants mentioned avoidance of prolonged sitting and standing. Some participants also mentioned avoiding prolonged walking without periodic rests.

"I realized when I sit for too long that makes it worse. I don't sit for long. I can't sweep. I don't bend. You see the posture you take when you want to sweep, when I do that, the pain will come" (P6S2, 53year-old-female, nurse).

Avoidance of perceived 'harmful' work or domestic activities (bending over to sweep, weed or wash, handling/transferring patients, sitting for too long, carrying heavy loads[4]) were also mentioned by all the participants. According to participants, 'harmful' activities were activities that imposed a considerable amount of pressure on the spine and/or elicited pain.

"I don't do any heavy work. I don't wash. Driving I don't. I shouldn't bend, I shouldn't sit for a longer time... Now I don't use the short broom[5], I use the long broom" (P9S2, 32year-old-female, nurse).

All the farmers, most market women and seamstresses in this study totally avoided their work roles following HCPs explanations (to be discussed in section 4.3.2). This was because farming was considered manually intensive; sewing and selling in the market also demanded prolonged sitting. Hence these activities were considered harmful. However, some of these occupations were avoided by participants because of personal painful experience associated with performing them.

"I have not been able to go to the farm. Also, I cannot even do household work. I was asked at physiotherapy not to bend, not to jump. I have the psychological effect in the mind that when I do, I may get pains. So, I have decided not to do it at all" (P6S1, 64year-old-male, farmer).

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[4] In using the expression carrying loads, participants referred to carrying loads on the head (as pertains within the Ghanaian setting)/lifting/holding loads.

[5] The use of a short broom to sweep is a traditional Ghanaian practice.

All, except two participants, totally avoided lifting heavy loads. Two participants continued to lift because lifting constituted an inevitable task for them. In the case of a 35year old female seamstress, she had avoided all other lifting/carrying activities except carrying her child at the back[6]. This activity was central to her role as a mother and facilitated transporting her child to school. Another male participant who worked as an orderly in a pharmacy department reported that his job demanded lifting of heavy galloons containing medicine and therefore, he could not avoid lifting heavy loads, although he perceived it to be harmful. This depicts that the participants' adherence to avoidance of activities may be influenced by the perceived importance of the activity.

"I don't lift heavy things. My first born is 13years. It's the small one who is four years, so when I am taking him to school, I carry him. I don't carry him that much, just when I'm taking him to school. Because I'm in a hurry I put him at my back and board a car with him" (P7S2).

The next section describes how FABs resulted in suspension of activities by participants.

4.3.1.1.2 Suspension of Activities

Some of the married participants suspended sexual activities. They held the belief that sexual activities either caused pain and/or increased pressure on the spine, hence the need to avoid it. Others also reported pain and general discomfort as reasons for suspending sexual activities.

"It also affects your sexual performance. So, I was advised that if I don't treat it well, it would be on and off so I was advised that I should stay away from sex for now. To avoid any injury, I decided to do it that way" (P13S2, 46year-old-male, police-officer).

Some participants had suspended their jobs and hobbies due to CLBP, pending an improvement of their condition. More than half of the participants believed there was a definite endpoint of CLBP. Therefore, interim avoidance of activities was feasible.

"…bending to wash or sweep are the most harmful, so I don't do it. The more you're doing that then the sickness would last for long" (P2S2, 55year-old-female, shopkeeper).

However, the elderly participants (>60years) and the 52year old male teacher, who had previous experience of CLBP with a family member believed LBP would be a permanent part of their lives and hence avoidance and modification of activities would be needed in the long-term. In this study, self-employed participants had put their jobs on hold, while employed participants had been granted sick leave for short or extended periods (the shortest duration was one week and the longest, one year). Sometimes this suspension

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[6] Carrying a child at the back with the help of a strap is also a traditional Ghanaian practice.

of jobs was also to allow participants time to report for hospital treatments or cope with some intervention (e.g., morphine).

"I wasn't going to work but I think I started last week. I came for physiotherapy, so they gave me excuse duty (sick leave). For the morphine they gave me one week. Yes, after that I came for physiotherapy and they also gave me one week" (P16S1, 27year-old-female, nurse).

The next section describes how participants modified activities based on FABs.

4.3.1.1.3 Modification of Activities

Other activities were modified by the participants. This was mainly adopting 'correct' postures, that is, a straight back when performing domestic or work activities and reducing workload. For instance, sitting to wash rather than bending to wash; using a long sweeping broom and taking on minor duties at work and at home, or asking for help where feasible. Engagement in activity modification appeared to promote performance of activities, since it provided alternative ways that participants could maintain their work and domestic roles.

"I have not been to work for some time but if I go to work, I don't know whether I am still going to consult because to me I feel the problem is coming from the consulting because the chairs over there too are not good. My surgeon said they should put me at a place where I would do minor work. Maybe OPD. You check vitals, you get up and walk around" (P9S2, 32year-old-female, nurse).

Participants also commonly believed the notion that pain indicated more harm was being caused to the injured spinal structures and they were therefore worsening their condition. Participants expressed how pain guided their activities. They either totally avoided activities that elicited pain or momentarily stopped an activity once it induced pain.

"Well, when I experience pain, it will come to my mind first to just relax, get in back there, sit or maybe lie down a little bit and then not to disturb the whole thing. Because I wouldn't know what may be happening there. I will calmly get in there either to sit or lie quietly on the back on the mattress for a while. If I'm not seeing any improvement, I'll have to call Dr. A or one of these physio workers for advice" (P7 Site2, 33year-old-male, journalist).

The subsequent section discusses the influence of HCPs on participants' FABs.

4.3.1.1.4 Influence of HCPs

All the participants' narratives suggested that physiotherapists and doctors had prescribed all the FABs discussed above as coping strategies. According to some participants, they carried out their activities as usual before physiotherapy intervention.

Therefore, patients' narratives showed an overarching influence of HCPs' biomechanical orientation on patients' reported beliefs and behaviours. This is described by the 55year old female shopkeeper below.

"At first when I came to physiotherapy, I used to do my normal work, so every day it was really hurting. So, when I came to physiotherapy and they told me that carrying heavy things, working aggressively, sweeping a lot, walking a lot, anything I do that ignites the pain is what is causing the problem, so I have to either stop it or take a break. The doctor said if I must sweep, I should use a long broom else I should stop" (P2S2).

According to participants, the notion of correct and incorrect postures was instilled by HCPs. All the participants explained how bending, prolonged static postures, and postures that compromised a straight back were discouraged by HCPs and therefore this advice constituted important aspects of their CLBP journeys. The participants explained how HCPs taught them how to modify wrong activities or advised minor duties at work.

"Because when I bend down to sweep you see that sharp pain, then you see that there is something pulling on the muscle at my back, which is not normal. So, I realize that the way they (HCPs) say don't bend, it's strictly don't bend because when you bend that way, meaning you are destroying something at your back. So, meaning the positions they (HCPs) want you to maintain because of the problem you have at your back you must maintain them" (P6S2, 53year-old-female, nurse).

All the participants reported that HCPs provided some advice regarding activities to totally avoid. Participants were advised against lifting heavy objects. The fifty-one-year-old male orderly describes how he informed the doctor that he could not avoid lifting heavy objects since this was a fundamental role in his work. He reported that the doctor suggested he was advising him on the right thing to do.

"When the things come, normal saline for instance, some come in 25litres in a box... What the doctor said is that when the things come, we should reduce it, we should remove some from the box and put it down. I told him Dr. the way the thing is, you cannot take some out. So, the doctor said he's teaching me what is right so if I won't take it, and I told him he has not yet understood my point too. I am the only person there" (P12S2).

Although all the participants who had suspended sexual activities had done so because of the belief that sexual activities increase spinal load and may induce pain, some participants reported that they were specifically advised by HCPs to suspend sexual activities.

"He (doctor) says for me to have effective correction I should not drive; they are talking about sex and all other things for three weeks. I mean he said if you are going to do that, it means you are going to put pressure on the nerve so if there is pressure on the nerves it would trigger the pain

so, since I was also told not to indulge in sex, I also hold on for some time" (P14S2, 52year-old-male, teacher).

In most cases, participants reported how HCPs facilitated the belief that pain indicates more harm. According to the patients, HCPs suggested that when performing any activity that induced pain, that activity needed to be stopped.

"Since I came for physio, they've made me understand that the more I do the things and its painful, then it gets worse, and I am putting all the weight on the backbone... so anything that I'd do that brings on the pain, I have to stop and rest or stop totally" (P2S2, 55year-old-female, shopkeeper).

The subsequent section discusses catastrophizing thoughts expressed by the participants.

4.3.1.3 *"…they said it wouldn't kill you, but you would be paralyzed"*: Catastrophizing Beliefs

Five participants expressed catastrophic thoughts. These participants described how interactions with HCPs facilitated their catastrophic beliefs. The thirty-two-year-old female nurse (P9S2) reported fears that CLBP could lead to future disability, since she had come to believe that her disc had a problem and the spine was delicate, through interactions with her doctor and internet searches. The belief that the spine is delicate was also expressed by two other participants (P13S1 and P14S2).

"Because he (doctor) said it's a spinal issue and it's very delicate. Since the pain is there, I learnt there is a problem with the disc so sometimes I get scared that maybe one day (pause) about paralysis. The internet they said it wouldn't kill you, but you would become paralyzed." (P9S2).

The fifty-five-year-old shopkeeper held catastrophic thoughts related to the importance of the spine. She had come to believe, through interactions with HCPs, that the back supported all the other body structures, hence a problem with the spine translated to the whole body.

"The doctors have made us understand that the backbone is what holds our body. Because that's what our waist lies on. So, the backbone holds our body. So, if it develops a problem then the whole body has a problem" (P2S2).

Also, it appears that catastrophic thoughts were in some cases facilitated by inadequate information from HCPs as reported by the thirty-three-year-old male journalist. According to him, fear of the unknown (neurosurgery and physiotherapy) induced the thought that his condition was out of control.

"I was like all hopes are gone. Why physiotherapy? I'm on drugs can't the drugs correct whatever it is? Why the neurosurgery? I don't like the whole idea of you lying for a surgery. So honestly, I was crazy in the car. Yes, I felt it was too huge. It was out of hand from the doctor's own perspective. So, I need to go to a different person for them to take me through a whole lot of things" (P7S1).

Catastrophizing and FABs are described as cognitive coping mechanisms by some authors (e.g., Waddell et al., 1993). For the purposes of presenting the study results, these unhelpful cognitive mechanisms are discussed as maladaptive beliefs and other unhelpful management/behavioural strategies are discussed as maladaptive behaviours/coping mechanisms.

4.3.2 Maladaptive Behaviours: Passive Coping and Management Strategies

According to Leventhal's common-sense model, illness beliefs drive coping mechanisms and coping mechanisms affect illness outcomes (Leventhal, Phillips, Burns, 2016). Participants reported that they used passive self-coping mechanisms (such as prolonged use of local spices, herbal medication, massage, and analgesics) during the earlier months/years of CLBP. They suggested this was mostly informed by the sociocultural environment, specifically, family, friends and folklore.

"Then after some months, if I'm picking something from the ground, I start feeling pains. I can't bend, ah, so you know our normal Ghanaian culture of use hot water to massage it. When I was applying the warm water, I realized that there is a spot, specific areas at the back which is causing that" (P8S1, 45year-old-male, telecom manager).

After HCP interactions, some participants reported cessation of herbal medication to concentrate on orthodox interventions because combining the two would make it difficult to tell what cured their pain. Others reported that diagnoses of bone involvement meant herbal medications would not be effective. Only three participants reported continuous use of local herbs/spices.

"Ok I was taking herbal medicine. I boil it and drink it. In the beginning I went to 'C' herbal centre. So, when I went to take the X-ray and they said it was the bones that were affected, I realized I had to stop taking the herbal medication" (P11S1, 62year-old-female, trader).

After HCPs' interaction, the participants reported utilizing passive strategies such as electrotherapy and prolonged medication. Passive self-coping, physiotherapy and medical strategies utilized by participants are discussed in subsequent sections.

4.3.2.1*"…I was buying medications, taking medications and herbal"*: Passive Self-coping Mechanisms

It is acknowledged that self-medication, with over-the-counter analgesics is recommended as a form of pain control in the initial stages of LBP, by LBP treatment guidelines (e.g., NICE, 2016). However, the participants appeared to resort to prolonged self-medication with over-the-counter analgesics, herbal medication and massage with warm water for months and years. This is described below by a fifty-seven-year-old female office worker who indicated reporting her CLBP to a doctor after seven years of experiencing CLBP.

"I think it started with the waist. I think 10years ago, but I reported to hospital three years ago. Yes. I thought if I just buy some painkillers then it would go" (P8S2)

Most participants expressed how LBP was considered as mild, or a normal occurrence from time to time. Therefore, self-medication appeared to be viable option.

"(laughs) as for waist pains since they gave birth to us, our grandparents go like our waist hurts, our waist hurts, so when it hurts you stretch and get some painkiller and drink or you find some liniment to rub it" (P12S1, 43year-old-female seamstress).

Other participants believed the folklore relating LBP to internal wound post-partum, hemorrhoids or rheumatism and therefore believed in the potency of herbal medication and local spices to curb the pain.

"When I gave birth initially, I did herbal treatment because I felt it was a wound. I had some herbs which I used to administer to myself with an enamel. It was later that I realized it's not just a wound, so I must take it to the hospital. As for my mom, she said it's a wound. Because I had just given birth and my age is not up to the age where I should be experiencing backache, so she felt it's the childbirth it's a wound. You know when you give birth the elderly say you have a wound" (P3S1, 37year-old-female seamstress).

All the study participants appeared to consider reporting to a doctor only after persistence and/or severe and disabling episodes of LBP. The range of participants' inception of LBP and their first hospital visit was 2months to 25years. This sixty-nine-year-old female, for instance, indicated she visited the hospital three months ago, although she had lived with CLBP for eight years.

"Myself when the thing started, I was buying medications, taking medications, and herbal. Some help me, after some time it comes again. So, it was later I realized I would go the doctor for an X-ray and see that is how I came. It started 8years ago. It's been about three months since I came to see a doctor" (P2S2).

The following section discusses passive physiotherapy and medical treatments utilized by the participants.

4.3.2.2 *"(Physiotherapy)… is a kind of medicine":* Passive Physiotherapy and Medical Approaches

Participants' accounts showed that they mainly interacted with doctors (family physicians, neurosurgeons and orthopaedic surgeons) and physiotherapists within the healthcare setting. According to patients' accounts, physiotherapy treatments predominantly consisted of electrotherapy, heat therapy and massage with ointments.

"When I go for physiotherapy, they apply the heat and do the massaging" (P6S2, 53year-old-female, nurse).

Some participants wondered about the efficacy of some of the strategies, in relation to curing their symptoms. The sixty-two-year-old female trader reported how the recommended use of heat by physiotherapists did not help her CLBP.

"When I came to physiotherapy that's when, at first the doctor I came to meet there said I should use hot water. I shouldn't use it to press the area, just to place the hot water over there. It didn't do anything and when it happens, I use an ointment that has some burning effect, the next day when I wake up, it hurts even the more" (P10S2).

Most participants appeared to be dependent on physiotherapy sessions. Some participants received physiotherapy weekly or biweekly, although they reported significant improvements. This was mostly due to participants' reliance on physiotherapy for a cure. A few participants also thought physiotherapy sessions were an aspect of long-term coping with CLBP. They likened physiotherapy sessions to taking 'medicine' which was going to cater for their symptoms. This is described below by the sixty-three-year-old female retired planner.

"Well, at least physiotherapy to help me to cope. It's a way of should I say kind of medicine. So, so long as you're taking your medicine, it (physiotherapy) is going to maintain me. So, I was thinking do I have to do physio for the rest of my life?" (P15S1).

For interactions with doctors, participants reported the main management approach was medication. In most cases, patients had been on medications, for prolonged periods, with some reporting prolonged opioid usage.

"Formally, now I have this epigastric pain so diclo is not good for me. So later they started giving me tramadol. But now I do take tramadol, baclofen and later I started having some muscle pull. So, I reported it and they gave me lyrica in addition. Errm almost these two and half years I've

been on it. But sometimes when the pain is ok, I don't want to take the medications. I want to go about without the medication" (P9 Site1, 63year-old-female, nurse).

Some of the study participants appeared unsatisfied with the use of medications. They made statements that suggested frustration with the use of medication and its inability to cure CLBP.

"Meanwhile I still feel the pain. It has been you feel the pain, you go they give you some painkiller, it would disappear for a while then after some months it will come back" (P8S1, 45year-old-male, manager).

Some participants reported they were administered periodic spinal injections by their doctors.

"Err normally they give me injection. Formally they said operation but we (HCP and patient) thought otherwise. We prepared but the doctor said err he would give the injection. So, when the pain is, when I get the injection it helps me a lot for some months" (P9S1, 63year-old-female, nurse).

Some of the study participants reported the use of corsets prescribed by doctors and physiotherapists. They had varied beliefs concerning the use of corsets. The fifty-seven-year-old office worker reported the corset was going to help maintain her posture. The fifty-three-year-old female nurse claimed she was informed by her doctor that the use of the corset and persistent physiotherapy would reduce the chances of surgical intervention.

"I have the corset. At times I wear it at times too I feel so uncomfortable, but I must do it. Because a friend of mine… is bent. Yes, so I don't also want to end up that way. Even if it's twice a week or thrice a week. Dr. F talked about it and Dr. W. also talked about it. To keep my posture" (P8S2, 57year-old-female, office worker).

Another important finding was that the patients' language depicted the belief in a paternalistic model of care and a high level of trust in HCPs. Participants often believed that HCPs were knowledgeable, had the solution, thus a final say in the management process. A thirty-seven-year-old male driver indicated that doctors served as 'gods' on earth since God uses them to proffer solutions for ailments. These beliefs reinforced patient reliance on HCPs.

"As we are on this earth if God is not there, the doctors are the ones there so whatever they say you must follow and if you follow it, it will help you. Even if God does his part, physically it's the doctors who can help. So, it's the doctor who referred me and what they're teaching I'm also adhering to it so that I can also be fine" (P4S1, 37year-old-male, driver).

The next section discusses passive coping reflected in the multiple health seeking consultations pursued by participants.

4.3.2.3 *"I have gone to so many hospitals … so many clinics, local drugs…"*: Multiple Health Seeking Consultations

Participants' CLBP journeys were characterized by the belief of a cure. This facilitated patronage of different hospitals, healthcare providers, herbal centers, and alternative medicine facilities. Also, it appeared that failed treatments and the quest for cure led to dissatisfaction with services and further pursuit for a cure. Participants were often led to try herbal and alternative medicine by friends and family, showing an influence of the sociocultural environment. Herbal medicine appeared to be a part of the Ghanaian health-seeking pathway.

"I've gone to so many clinics and hospitals, local drugs, so many… that led me to one Dr. Q. They said he's bone specialist. So, then I went through massage because everybody was trying. I went through herbal medication at A. So many herbs were applied at the back. As if you're getting better, but I left them then the pain went off. You apply this one for a while, no improvement, then you're advised to also check on this one to see. You know that's why the women go to a lot of churches, a lot of pastors, when you're sick if you're not careful and one asks you to eat certain things, you may eat. You equate the pain vis-a-vis the action" (P8S1, 45year-old-male, manager).

Sometimes the experiences of friends and colleagues in different cultures influenced the management pathways utilized by participants. The forty-three-year-old male banker reported visiting chiropractic clinics after being signposted by a colleague who had utilized similar in Canada.

"So, when I went to work, one of my bosses he went to Canada so when he came back, he was also experiencing that one and he consulted a chiropractor so I should go there. So, he directed me to the chiropractor" (P13S1, 43year-old-male, retired banker).

The use of herbal medications was also facilitated by the belief that hospital medications contained chemicals which could be harmful over time. This belief was a popular belief among the participants, and participants suggested gaining this information from friends and family, showing the possibility of the influence of participants' immediate society.

"Yes, I use, I take herbs. Hospital medication, when I found out that my stomach, then people were advising me that the chemicals are too much so I should rather. Some too they advise that the herbs don't contain so much chemical" (P13S1, 45year-old-male, retired banker).

Another pattern of multiple consultations reported by participants was multiple hospital visits. This appeared to be facilitated by physiotherapists. According to the participants, physiotherapists prescribed multiple physiotherapy sessions, in line with the dependence on electrotherapy and other passive strategies. This highlights the biomedical orientation of Ghanaian physiotherapists and favouring of passive therapies over active ones.

"I was referred for physiotherapy by my doctor 6months ago and I have been attending since then. I don't feel the pains now because I don't do anything that would bring about the pain. I come once a week now. I was coming thrice formerly and then twice" (P4S1, 64year-old-male, farmer).

In terms of doctors' visits, this was mainly initiated by patients' symptoms and facilitated by the patients' quest for cure. The participants reported that they visited their doctors periodically when they needed a refill of their medications or there was an increase in their symptoms. Some participants changed doctors when they felt dissatisfied with the treatment being administered or their symptoms did not improve. This reiterates the biomedical orientation of patients.

"Yes, the doctors they've given me painkiller so anytime that it finishes then I'd go there" (P4S2, 48year-old-female, trader).

My boss used to work at C clinic so when I report to him then he'd make me come there and let the doctor see me and the doctor will give me numerous medications. But when the doctor was giving me the medications, I wasn't seeing any improvement…the thing kept on worsening… so later my daughter took me to see another doctor at the same C clinic" (P2S2, 55year-old-female, shopkeeper).

The next section discusses active strategies and positive beliefs related to CLBP that were reported by participants.

4.4 The Role of 'Self' in Facilitating Positive Beliefs and Active Strategies

Active strategies are considered coping and management strategies/behaviours that encourage patient participation in managing and coping with their conditions and positive beliefs are thought to facilitate helpful behaviours (Dagenais and Haldeman, 2012). The participants reported positive beliefs related to self-efficacy beliefs, beliefs about the importance of exercises, and general CLBP beliefs. Active coping strategies reported by the participants were the use of prescribed exercises, pacing, activity as a form of distraction and spirituality. An important finding of this study was that except for prescribed exercises and sometimes pacing, other positive beliefs and active strategies were utilized by **few participants** and facilitated **by patients themselves**.

4.4.1 Positive Beliefs

4.4.1.1 *"Even when I have the pain, I try to do it"*: Self-Efficacy Beliefs

Some of the participants reported how they confronted their daily activities and maintained normal shifts at work despite their pain. Others reported how they used pacing as a strategy to carry-out tasks such as walking or daily activities. Hence these participants demonstrated self-efficacy beliefs.

"I do house-chores because sometimes I want to exercise. I ignore the pain and I try to do it. Even when I have the pain, I try to do it (P9S1, 63year-old-female, nurse)".

It appeared that participants desire to perform an activity facilitated their self-efficacy beliefs, showing the influence of 'self'. The forty-eight-year-old businessman and thirty-three-year-old journalist demonstrate how the desire for exercise and need to work facilitated self-efficacy.

"I do exercises. I can do squats. I do squat, and press-ups. I like training. Even when it hurts, I'm able to still do it with pain" (P11S2).

"I freshened up, went to the office, it was too severe, but I needed to work. So, I worked with it." (P7S1).

Some patients' narratives indicated that pacing was suggested as a coping strategy by HCPs. They reported that HCPs suggested pacing facilitated management of tasks without igniting pain. They also suggested that pacing their activities at home was normally guided by previous experience of pain associated with prolonged periods of activity.

"When I went to the doctor and coming for physio, I have been advised to do my chores bit by bit. For instance, washing my clothes. I do not let the things pile. Last time I came for instance, normally when I finish, I board a taxi from physio to the house because of the pain. But that day I walked from physiotherapy to the station. When I went, I felt my body was ok. I started sweeping my shop. The container looked dirty, so I started scrubbing. I did the chores for long but later at a point, in the evening I became helpless again" (P2S2, 55year-old-female, shopkeeper).

This study finding indicates that some participants used pacing to perform desired activities and avoid overload.

4.4.1.2 *"We have to be up and walk around"*: Other Positive Beliefs

Participants expressed positive beliefs relating to CLBP. Some participants believed that exercises (general exercises and sporting activities) were beneficial to the human body, strengthened the bones and improved pain and function.

"Maybe not having good exercise too can cause it (CLBP). The thing is I was trying to do walking with walker and that was helping me. I usually do it because I think if I stop rather, it would get things worse" (P5S2, 87year old female, retired nurse).

Consistent with the importance attached to exercises, the fifty-five-year-old female shopkeeper reported performing exercises at home although she had been advised that exercises would be incorporated later in the course of her physiotherapy treatment.

"With the exercises when I came to physiotherapy, they told me that when the pain reduces then they'd make me do some exercises. I just sometimes do some little exercises in my room myself" (P2S2).

4.4.2 *"They showed me that exercise is what I should do…"*: Active Strategies

Seventeen participants reported the use of prescribed exercises by the physiotherapist as a home management strategy.

"For now, they've thought me for my upkeep, two three exercises I need to be doing in the house" (P7S2, 33year-old-male, journalist).

Participants did not give an indication that prescribed exercises were going to be a life-long strategy. They viewed exercises as one of the modalities that were going to facilitate cure.

"They (physiotherapists) showed me that exercise is what I should do when I am at home. The doctors said if I do the exercise and it doesn't go, then they'd give me injection. So as for me I am praying that the exercise I am coming to do, God should heal me, so I do not have to go for the injection" (P4S1, 37year-old-male, driver).

Of the seventeen participants who had been prescribed exercises, eight participants reported they were prescribed home exercises early, with nine reporting late prescription of exercises by physiotherapists. Four participants who had not been prescribed exercises indicated that physiotherapists informed them that exercises would be incorporated later. A fifty-year-old telephonist describes how her expectation of exercises was put on hold until later by her physiotherapist.

"I knew it's exercise that they do at physiotherapy, so I thought I am coming to do exercise. When I came, bro. A (physiotherapist) said if the pains come down, they will teach me some exercises" (P3S1).

Although it appears, from patients' narratives, that the prescription of exercises was dependent on the treating physiotherapist, late or no prescription of exercises appeared to be more commonly cited by patients at site two.

Three participants also expressed the use of activities and hobbies (singing, rearing goat, sweeping) as a form of distraction from the pain (either to help forget their pain or distract them when in pain).

"I am now at Grotto. I took it upon myself. Even when I feel the pain, I can take broom, that long broom. These plastic chairs, two two or three three I'd be arranging it. Nobody has assigned me that job. When I'm doing that, I don't even remember the pains" (P13S1, 43year-old-male, retired banker).

Spirituality was also used as an adaptive strategy by most participants. The participants in this study portrayed an active role of seeking healthcare, learning new ways of coping while depending on God as the ultimate source of their cure. Hence, they appeared to utilize spirituality in a collaborative way (Dedeli and Kaptan 2013).

"I don't know how to express that but thanks to these physios, and all the advice and the Almighty Lord, I'm able to walk" (P7S1, 33year-old-male, journalist).

Spirituality appeared to provide hope and support for participants through their CLBP. CLBP patients believed that their health-seeking efforts and hope in God would be rewarded with optimal health.

"I am hoping God would help me, so I get well" (P10S2, 62year-old-female, trader).

Other participants recalled how God's word provided them comfort and hope.

"I use God's word. But for God's word, when you are ill you lose all hope. But when you're a Christian, you use God's word to comfort yourself" (P2S2, 55year-old-female, shopkeeper).

The church community and leaders also provided psychological support for participants. The forty-three-year-old male banker reported how priests offered support and provided him encouragement because they noticed he was withdrawn.

"Priest, priest, priest. They could be with me 24hours. Whenever they feel that I used to become so silent just to endure the pain. So, whenever they see me so quiet, quickly they'd come near me. I was advised, counseled, by the priest that after all I am not the first person to go through this. Yes, and some they don't even have life. And me I have life so why don't I hold and who knows I would overcome it" (P13S1, 43year-old-male, retired banker).

The next section discusses the psychosocial impact of CLBP reported by the participants.

4.5 The Psychosocial Impact of CLBP

Participants' accounts depicted their beliefs concerning the negative psychosocial impact of CLBP. They expressed the feeling of loss of self, gendered roles, domestic roles and their livelihoods, feeling stigmatized and marginalized, emotional distress and fear. They also recalled how financial burden worsened the impact of CLBP. Family support was also reported as an indispensable source of psychosocial support throughout their journeys. However, participants' accounts demonstrate tendencies for family support to facilitate maladaptive behaviours. These are detailed in subsequent sections.

4.5.1 Loss of Self and Roles

4.5.1.1 *"I'm not physically strong"*: Loss of Self

All the participants described some sort of loss resulting from CLBP. Participants suggested that, the inception of LBP leads to the unpleasant experience of fluctuating pain, stiffness, altered posture and disruption in movement and sleep, which resulted in a loss of their 'usual physical selves'. The fifty-five-year-old shopkeeper felt CLBP had negatively impacted every aspect of her life.

"…it has changed every aspect. It has made me weak. Physically, even spiritually. Now I'm not like I previously was. I could wake up and work for long hours. I was very strong. Now I am not like I used to be. When I do something little, I get tired" (P2S2).

Most participants reported a loss of spontaneity with performance of everyday activities. This was normally related to their biomechanical beliefs around posture and the need to protect the back, resulting in hypervigilance.

"Physically I manage because if I sleep and then I'm waking up, I need to get up strategically… Because if I bend down like this and I have to wake up, I need to take time gradually. So physically you see me but I'm not physically strong" (P8S1, 45year-old-male manager).

This reported loss of participants' 'usual physical selves' resulted in psychological consequences. According to the participants, CLBP becomes an embodiment of one's thinking framework. They describe these accounts as periods of thinking about the pain, changes and difficulties that CLBP has brought into their lives and what the future with CLBP would entail.

"Because sometimes you look at what you could do and now you can't do them anymore, I have a kid that I stay with myself, it got to a point I was helpless and sometimes I'd be in the house and will be thinking. This young chap will come home, daddy why are you that calm? When she's asleep I cast my mind back and say why all these? Why is this happening to me? Because I could

do this by myself, I could do that by myself and yet nothing is working for me now. So psychologically, emotionally, I was tortured in a way" (P7S1, 33year-old journalist).

Participants described the feeling of a new self and an inability to think appropriately through normal daily activities.

"It's not nice at all. You see then it restricts your everything. The mind doesn't think properly. It doesn't even give you that atmosphere for you to work properly. Yeah thinking about the pain especially when it gets acute. Then it's like anybody you see is an enemy. It becomes sensational. You don't even feel yourself" (P1S2, 68year-old former airline official).

The next section discusses participants' accounts of the loss of roles caused by CLBP.

4.5.1.2 *"I feel incapacitated because I cannot go and do what I love":* Loss of Roles

Participants recalled how CLBP results in the loss of roles. Participants' loss of roles enhanced the feeling of loss of identity. Participants felt that their roles as spouses, workers, parents and members of the society constituted components of their identity. Therefore, setbacks or loss of any of the aforementioned roles affected their identities.

"…I love my job. I feel incapacitated because I cannot go and do what I love. I love to do stories. I am just there. I have been at home for one year and it affects everything about your life" (P7S1, 33year-old journalist).

All the participants expressed how CLBP had either caused loss of their livelihoods permanently or in the interim. For instance, the forty-three-year-old former employee of a banking firm describes how CLBP resulted in the permanent loss of his livelihood and only source of income. Prior to CLBP, he was the breadwinner of his immediate (wife and five children) and extended family.

"Twelve years I worked in the bank. I never went for leave. They were just misusing me, and I also thought that I'm strong… and here I am they don't even mind me. Not that er I have resigned. They just deleted me from their books like that. When I started falling sick even financially, they never even supported. Economically I am down. Sometimes I have to beg from my friends, my mates…and my extended family too because I was the breadwinner it is a burden now" (P13S1).

A gendered perspective to loss was present in participants' narratives. Loss of the ability to perform gendered or culturally prescribed domestic roles such as cooking, or sweeping was reported by all the female participants. According to a forty-eight-year-old female trader, CLBP has affected her ability to perform her domestic duties.

"It has affected the joy in the house. Some of the work in the house that you as an elderly woman should do, you give it to the children to do and you would just be instructing them, you cannot perform your duties" (P4S2, 48year old female trader).

In very few cases, male participants mentioned loss of the ability to help with domestic activities, while emphasizing they just played a complimentary role.

"I cannot even do household work. You see as a man sometimes I live with a wife, not all the work you can let the wife do. You see in our room, you have to do some scrubbing, some house-chores to help the lady" (P6S1, 64year-old-male farmer).

Loss of the ability to perform sporting/gym activities was reported by three males.

"As a matter of fact, when it started, the pain was so severe that…I had to stop gyming too and it is a hobby. I used to do it for fitness too because of my job" (P13S2, 46year-old-male police officer).

Some participants described how loss of livelihoods and performance of domestic activities were facilitated by HCPs' advice on activity avoidance.

"I was so devastated. Because from the first pain that I had, and then for a week the pain continued. Then I sat down and asked myself, is that how I'm going to be for the rest of my life? I mean they (HCPs) telling you not to do this, not to do that, don't drive…not having a normal life?" (P14S2, 52year-old-male, teacher).

Furthermore, some participants reported that HCPs' prescription of multiple hospital visits influenced the loss of their livelihoods. According to the thirty-seven-year-old male driver, he was still capable of performing his work duties, however the need for multiple hospital visits/physiotherapy sessions resulted in significant loss of working time.

"I go to work once a week. Because you must go to the hospital and going to and fro the hospital you can't even get time to go to work" (P4S1, 37year-old-male driver).

Most of the married participants in this study reported an influence of CLBP on their conjugal relationships. Participants revealed how this translated into a feel of loss of their marital roles. Participants reported that changes to their sexual lives sometimes placed a strain on spousal relationships. As previously discussed, these changes to participants conjugal relationships were facilitated by FABs and biomedical beliefs derived from HCPs.

"…and especially too I have a wife (hisses) I normally I can't go to her. Because when I go to her I get some pains. That also has been sitting upon my joy. I have the psychological effect in the mind that when I do, I may get pains. And especially sex, in fact when I do, I get pains. So, I decided not to do it at all. Until quite recently I got to know that the disc is worn out so in fact ever since I've been cautious not to do the dos and don'ts" (P6S1, 64year-old-male farmer).

Other participants reported how they had lost social roles such as their roles in church and other social institutions.

"I used to…go and help tidy up the church. But since I got ill for about two years now, I am not able to go to church like before. The distance between my church and where I stay is far…and walking a lot makes me tired. So as for this sickness, it has changed every aspect. It has really worried me" (P2S2, 55year-old-female shopkeeper).

Participants' accounts described above highlight the influence of HCPs and the socio-cultural environment (family, society and culture) on the CLBP experience and vice versa. An impact of participants' loss of self and roles: emotional distress is discussed below.

4.5.2 *"Anytime I remember, I cry"*: Emotional Distress

Most participants often recounted how their CLBP experiences involved periods of sadness and frustration, leading to distress. This was often expressed as being tired of the condition, not being happy and crying or through anger.

"I do not feel happy anymore as I used to previously" (P3S1, 37year-old-female seamstress).

The forty-three-year-old former banker appeared to have experienced a period of severe pain and movement restriction, coupled with the loss of his job without any entitlements. He reported that these resulted in extreme form of distress that led to suicidal thoughts.

"One is the pain, two: my job… I used to become so silent just to endure the pain…It got to a point, I nearly caused suicide" (P13S1).

Among the participants, this feeling of distress was often influenced by the feeling of loss, radiological findings, severe pain, hospital visits and uncertainty about the future, and was equally expressed in both male and female participants.

"At the first place when erm after doing…the MRI and sent to the doctor and the doctor starts explaining the defects, I mean I was so devastated. They were talking about sex, driving and all those things so I was asking myself is that how I'm going to be for the rest of my life? And I started crying. So, I mean it's not just easy for those who have that chronic one, managing it is not just easy. I mean having pains just for the rest of your life" (P14S2, 52year-old-male teacher).

Distress was predominantly expressed in different ways among men and women in this study. Female participants expressed emotional distress by recounting periods of crying, and two males also recalled crying.

"It has really worried me madam (hisses), because when it started, anytime I remember I cry (Cries)" (P2S2, 55year-old-female shopkeeper).

However, only male participants (four) reported that they expressed their frustration and distress through anger directed at themselves and others.

"one thing I notice is that the least thing I become so angry. I don't know why. At myself, even when you're giving me treatment, I see the treatment not all that meeting what, I thought that it should be quick. I feel that aah! Sometimes I just have to go and relax. I would leave the scene, especially when my wife is with me" (P13S 1, 43year-old-former banker).

The next section highlights participants' reported fear related to CLBP.

4.5.3 *"I hope that it wouldn't be worse"*: Fear

The participants expressed fear of the future consequences of CLBP. The fear of future consequences was related to fear of disability and death. Since participants believed that the spine damages progressively, some participants feared the spine would deteriorate further and cause disability. Hence the fear of disability appeared to be influenced by participants' biomedical orientation.

"Sometimes a little fear that I'm not that old, that if I start having this now then I don't know how it would be in a few years' time. The fear is my age. I hope that it wouldn't be worse. Because I am not the type that can sit at one place" (P15S1, 63year-old-female, former planner).

A sixty-nine-year-old female also recounted how this fear of disability was a motivator to keep seeking healthcare, to prevent disability. According to her, life without strength for movement and performance of ADLs was meaningless.

"Everybody wants life. Mmm, life with strength. As for life, if you are alive and you cannot lift your hand to your mouth, it is not beneficial. So, if the time is not yet up and you are able to move, you accept it that way and do as they (HCPs) say. I am grown, next year July, I would be 70. The time is not yet up and then you have become something else (disabled), then it means even the children would neglect you." (P2S1).

With regards to disability, some of the participants expressed the dislike for use of assistive devices (e.g. walking sticks) because it facilitated being perceived as old or handicap by oneself and others. This belief appeared to be facilitated by participants' personal beliefs.

"I don't ever want to be walking with stick…it makes you look old. I should use walking aid after 100 (laughs)" (P1S2, 68year old male, retired airline worker).

The forty-three-year-old former banker expressed a previously held fear of death, as a result of excruciating pain. This fear of death had however been allayed by interactions with HCPs, according to this participant.

"Initially I didn't know. I thought it would end my life, so why don't I kill myself rather than endure the pains, till I could see no, with the advice, with the physiotherapy and all those medications…" (P13S1).

Another aspect of fear expressed by participants was the fear of toxicity/side-effects related to the prolonged use of orthodox medication. Some participants reported that they were experiencing side-effects of analgesics.

"I started with pregacid, flotac, diclofenac and then it proceeded to morphine, codeine. I'm still taking it. I've taken a lot but for now three. Today he(doctor) added one to it so three. But I don't normally take it unless I feel the pain because I don't want to be addicted to it" (P9S2).

"Formally, I was taking diclofenac. Now I have this epigastric pain, so diclofenac is not good for me" (P9S1).

Interestingly, participants did not express this fear of toxicity/side-effects in relation to herbal medication. They believed herbal medication was from natural sources (e.g., plants) hence had the potential to be less harmful, although they sometimes questioned the efficacy of herbal medication.

"You see myself, … I don't know should I say orthodox medicine or whatever, all these drugs we are taking into our system, I didn't want the whole idea, so I decided that, though with the efficacy of the herbal drugs it's another question of its own but then I believe that they are natural herbs" (P7S1, 33year old journalist).

Generally, fear was influenced by derived biomedical/biomechanical perspectives and sociocultural beliefs as reported in participants' narratives above. The next section explores participants' feelings of being stigmatized and marginalized.

4.5.4 *"People felt I was lazy"*: Stigmatization and Marginalization

Some participants' accounts depicted different aspects that caused feelings of being stigmatized or marginalized. This feeling was experienced at the family, work and societal levels. At the family level, two female participants felt misunderstood by their spouses. The source of this misunderstanding was the use of avoidance of activities as coping mechanisms.

"Yes, it will translate to the husband. Yes, in the night you are not sleeping. So even when the man is coming, sex-wise it affects. You are not happy. Yes, you're not feeling comfortable with yourself. Aha and it is like nowadays you have changed the man doesn't understand the pain that is in you. But you are feeling it" (P4S2, 48year-old-female, trader).

At work, the fifty-three-year-old female nurse described a feeling of uncooperativeness and complaints from her superiors due to her frequent sick-leave and modification of duties. She felt CLBP served to make her an easy target for internal transfers from one ward to the other.

"You see sometimes too nursing they don't even care. Comparing you to every other person but me I didn't mind. I always say I didn't know why they took me to Fevers unit… when I started picking the excuse duty (sick-leave) left right then she (supervisor) started complaining…" (P6S2).

Also, the former employee of a banking firm reported being marginalized. He reported being sent to the economic and organized crime organization (EOCO) in Ghana to be probed for fraudulent activities he was falsely accused of, while he was hospitalized.

"My job. I can tell you they even sent me EOCO. Because they said auditors came, the audited me and I was supposed to answer some questions, I didn't avail myself. Meanwhile I had all this medical report but suddenly hearing that none of my medical report are found on my file. And when it came like that, they were just throwing the rumour that it's true that I have squandered money that is why, meanwhile I was in hospital" (P13S1).

At the societal level, the forty-six-year-old seamstress described how people perceived she was lazy because she had stopped sewing due to CLBP. According to her, people felt CLBP was not reason enough to stop working. This portrays the sociocultural belief that CLBP may not be a serious illness.

"It's recently that the pains come on a lot. One day I couldn't even get out from bed. When you say it sometimes people think you're joking. The sewing for instance when I stopped, people felt I was lazy that's why I've stopped. I couldn't. They think you're lazy that's why you've stopped work" (P5S1).

The thirty-seven-year-old seamstress also described how the lack of understanding of biomedical explanations given to patients, offered an opportunity for others to construe the cause of LBP as spiritual. This thought of spiritual connectedness with the patients' CLBP facilitated stigma within the participant's immediate society as her sister-in-law wondered how spaces between the vertebrae could expand and therefore advised the participant's husband to send her away.

"I called my sister-in-law that this my back has hurt for long and she asked what I had done about it. Then I told her I have even gone for an X-ray at Dr. B's place. When I went, he said that it's the backbones that have widened up. So, she said aah so can it happen that way? And I said I do not know. So, my husband went to work, and she asked me if my husband has come back from work. And I said no. Then my husband returned. So, I told her my husband just entered the house and she said I should give the phone to him so she can talk to him. So, when I gave the phone to my husband, she didn't know my phone was on speaker. So she was trying to convince my husband that it is spiritual so my husband should take me back and leave me, because she hasn't seen a waist that has widened spaces" (P3S1).

The next section explores the social support available to CLBP patients.

4.5.6 Social Support

Social support may be in the form of employment support, government support or support received from relevant others such as family and friends (McKillop, Carroll, Jones, Battie, 2015). This section explores participants' accounts of the various social supports available to them and their impact. This section also specifically discusses the various dimensions of the financial burden imposed as a result of CLBP.

4.5.6.1 *"I can't quantify it"*: Family and Friends Support

All the participants described some sort of support received from immediate and extended family members and friends. This support was rated by all the participants as a vital part of their CLBP journeys. Friends were normally reported as 'strangers', neighbours, philanthropists or members of a group that the participants were affiliated with (e.g., church, market group, colleagues at work/school). Family members and friends recommended healthcare services, alternative/local/herbal medicines, advice on possible causes and coping strategies.

"A friend asked me to buy this we have a spray medication. (Hisses) so I bought it... Even though people advise me to take herbal, I haven't done it" (P9S1, 63year-old-female nurse).

In a few instances, participants described how they were approached and advised by strangers to try certain herbal medicine because of their obvious signs of pain and disability.

"Like the local medicine one day I went to the market and when I was walking, I bent down. So, when I bent, a woman asked me why and I told her. She said some few days ago something like that happened, so I should get some local spices. When it was hurting, I decided to do it, but it still hurt so I've stopped" (P5S1, 46year-old-female, seamstress).

Importantly, all the participants described how their spouses, children and friends provided psychosocial support in the form of encouragement and support with coping (e.g. using ointments to massage their backs).

"So, do this daddy don't do this. So, they are of support. Honestly you need support in these cases. It really helps. I can't quantify it. But if you ask me on about a scale of 10, I'd put it at 7. Yes, even somebody tells you you've got to go for your medicals today so please go it's something" (P1S2, 68year-old pensioner).

The family also provided help with ADLs, and in some circumstances served as movement aids (due to unpopularity of the use of assistive devices among participants).

"I get support from my husband sometimes and my children. Oh, if I want to carry something, I ask them to carry it for me" (P3S2, 50year-old-female, telephonist).

In a bid to show care, the family sometimes reinforced FABs and passive strategies. This was particularly expressed in the narratives of elderly participants. For instance, the sixty-three-year-old female nurse reported how her children advised her to stop performing activities.

"The children. Mmm sometimes, they asked me not to be doing it, but I've been doing it. They asked me not to be lifting too much heavy things, I shouldn't be washing err I think these things and sometimes if nobody is in the house, I try to do a little. Cooking, now I don't do much cooking unless petty like heating something. But cooking itself, I don't do it" (P9S1, 63year-old-female nurse).

Another form of support was provided by wives. Three male participants reported how their wives had to leave their jobs, childcare and other roles to be with them to provide physical and psychological support. The need for wives' presence was sometimes facilitated by the advice to avoid activities. This kind of support was not reported by female participants of this study. This may be due to sociocultural beliefs concerning the expectations of women in marital relationships.

"My wife who has to put a stop to her work and come and be with me, she is with my kids in K but because of all these things, she's currently staying with me. I'm active but I've told you that because of the pains, I was advised not to carry heavy things. Sometimes, you know with this sickness you go through stress, so you need somebody to be with you. Psychologically to reduce the stress" (P13S2, 46year-old-male, police officer).

Another crucial role played by family and friends was providing financial support. Participants recalled how families, friends and colleagues were providing them financial support to offset healthcare and transportation costs, as well as support for their dependent children.

"…so, it was later someone suggested helping me. Coming for physiotherapy, taking the X-ray and all of that, it's that person who bears the cost" (P11S1, 62year-old-female, trader).

Participants described how their affiliations with groups, such as church or class cohorts provided opportunities (e.g., scholarships) for some financial relief.

"Then mates, old friends, had it not been them. And God so good Cardinal Turkson had a scholarship for, I am a staunch catholic. Two of them they are on scholarship. They are on Cardinal Turkson scholarship. And then three of them too I was board chairman in one of the private schools. There too their school fees though it's not high, that one I don't pay" (P13S1, 43year-old-male, retired banker).

It is evident from these findings that there appears to be a communal form of association among Ghanaians and the sociocultural environment plays a major role in the journeys of Ghanaian patients with CLBP. The next section discusses the financial burden of CLBP described by the study participants.

4.5.6.2 *"…I cannot do any hard work; it has affected my finances"*: Financial Burden

The majority of the participants acknowledged a consequence of CLBP was increased financial burden. FABs related to avoidance/modification of work roles resulted in loss of income or reduction in income.

"And walking a lot makes me tired. And because of it I cannot do any hard work, it has affected my finances" (P2S2, 55year-old-female, shopkeeper).

Another dimension of financial burden related to the need to employ the services of others to provide help with activities (e.g., farming, driving, sweeping and washing) that participants could no longer perform. Participants describe how this increases their expenditure hence incurs financial burden on them.

"Because of the pain I'm experiencing I can't do much work as at first I was doing. To take the broom and sweep is a problem unless I use the long, standing broom. And that one it can't sweep the whole house so now I have to employ someone to come and sweep for me and do my cleaning for me" (P1S1, 40year-old-female, pharmacy technician).

A main source of financial burden was 'health shopping'. 'Health shopping' is seeking for healthcare or a remedy from various sources (Bunzli et al., 2013). In this study, participants' health shopping resulted in costs incurred from laboratory tests, X-ray and MRI, herbal and orthodox medication, and transportation. Participants described how in some cases they had to rely on family and friends to be able to afford these services.

"About two years ago, intermittently I used to get say some back pains. So, I used to report to the hospital occasionally. Then I'd go for an X-ray and they'd say it's nothing it just spinal something. The doctor will give me medications. But… I wasn't seeing any improvement. My friend told me that she was also experiencing knee pain, so she went to a clinic at K, which is a scientific herbal clinic. At the herbal clinic they carried out a lot of tests on me. It's someone who dashed me 1million at that time and I used that to go to the place. When I went and they finished everything, they said my bill is 2. something, 4 or so and I shouted eei doctor I don't have. All my money is 1million and even that I have used some as transport. Then I started calling my brothers, my cousins. Then I called my Godfather…. So, he took contribution from his workers and did mobile transfer onto the doctors' phone before I got money to pay and bought the medications" (P2S2, 55year-old-female, shopkeeper).

The financial burden imposed by CLBP appears to be worsened by patients' biomedical beliefs and FABs that leads to avoidance of work, numerous imaging, medications and dependence on the healthcare system.

4.6 Limited Physiotherapy Knowledge and Awareness

Globally and in Ghana, physiotherapists are one of the HCPs involved with CLBP management. As participants' narratives consistently suggested late physiotherapy referral, the researcher explored participants' knowledge and awareness of physiotherapy as discussed below.

Most participants had never heard of physiotherapy and never accessed physiotherapy services prior to being referred by doctors.

"Because nobody asked me to do physio, I didn't know that physio also would have helped. I don't know what it entails. I haven't been to the physiotherapy before" (P9S1, 63year-old-female, nurse).

Among those who had heard about physiotherapy, before exposure to physiotherapy, pre-conceptions were that treatment would be massage or performing exercises with the aid of gym equipment. Hence, an expectation of home exercises was absent.

"I know that with physio, it could be gym, it could be massage, so I know of certain things that are done in physio, so I had some prior information. I thought maybe if there is any exercise, we will do it at the physiotherapy department" (P14S2, 52year-old-male, teacher).

In some instances, patients expected physiotherapy to entail consultation with an orthopaedist who would prescribe medications.

"I was thinking that when I come, he would give me to a doctor who works on bones or something like that. That's why I came for physio. I thought it would be medicine" (P14S1, 55year-old-female, market woman).

Some participants reported how limited knowledge and awareness of physiotherapy translated into fear, anxiety and catastrophizing since they did not know what to expect from physiotherapy.

"I thought it (physiotherapy) was a huhudious (scary) thing. I'm afraid, that day I was referred, I couldn't sleep (Laughs). I took my dictionary and I went through a few words ok physiotherapy" (P8S2, 57year-old-female, office worker).

Participants reported how attendance of physiotherapy introduced the knowledge of electrotherapy and heat therapy as core aspects of physiotherapy.

"I thought it was exercises… Heating and all those machine things (electrotherapy) I had no idea until I came for physiotherapy" (P15S1, 63year-old-female, pensioner planner).

Most participants reported how doctors also reinforced their knowledge about physiotherapy being equated to massage and exercises. When doctors were referring participants for physiotherapy, participants were told they were going to be massaged and/or perform some exercises and taught proper ways of performing tasks.

"I didn't know till I came to physiotherapy. I know he (doctor) told me that they would massage me. He (doctor) didn't tell me that you would be put on a machine" (P4S2, 48year-old-female trader).

One male participant narrated how his son, a medical specialist, was at the centre of his CLBP management in terms of signposting him to relevant healthcare services. The participant however acknowledged that his son never recommended physiotherapy. In addition, all the nurses who participated in this study appeared unaware of the role of physiotherapy in CLBP.

"Especially when your first born is a medical doctor. In fact, he's now a specialist at hematology… He's never asked me to go for physiotherapy, but then recommendations from his colleagues who are supposed to be in the related specialist fields" (P1S2, 68year-old-male, pensioner).

All the participants' accounts depicted late/non referral to physiotherapy by their doctors. Patients reported varied non-evidence-based reasons that prompted physiotherapy referral. Physiotherapy was sometimes suggested by doctors after exhausting all other options/prolonged medication/as an alternative to surgical intervention. Others were also sign-posted to physiotherapy by friends.

"He said it's like I have taken a lot of medications and the medications are too many so let's add the physio and see how it goes" (P3S1, 37year-old-female, seamstress).

It appears, from participants' accounts, that physiotherapy has limited visibility among Ghanaians and even HCPs. The next section provides a discussion of the study findings in relation to the extant literature.

4.7 Discussion

4.7.1 Summary of findings

Participants had varied understandings of the influences of various biopsychosocial aspects to CLBP and reported confronting daily activities before HCPs' interactions. However, participants' accounts suggest that HCPs' interactions create an emphasis on bio-medical/mechanical beliefs, FABs and passive coping.

Bio-medical/mechanical beliefs (including the belief of a cure), maladaptive beliefs and coping (particularly FABs, passive coping strategies) were expressed by all the participants. Catastrophizing beliefs were present, although in a few participants. A few participants expressed uncertain beliefs about CLBP causes related to food, rheumatism, and hemorrhoids. Herbal medication was as popular as medical care, with the former being utilized mostly in the earlier years of CLBP. These beliefs and practices were influenced by HCPs and the sociocultural environment. There were glimpses of positive beliefs and active coping strategies (particularly self-efficacy beliefs and beliefs about the benefits of exercises in CLBP), which were largely driven by patients themselves.

The participants also described beliefs concerning the psychosocial impact of CLBP. Loss, emotional distress and financial burden were expressed by most participants. Other psychosocial impacts were fear of the future and side-effects of medication, marginalization and stigmatization. These were influenced by patients' biomedical orientation (facilitated by HCPs), the sociocultural environment and socio-economic impact of CLBP. However, family and friends support are highlighted as an indispensable form of support valued by Ghanaian patients with CLBP. Spirituality was a concept which was mostly used as an active coping strategy and mal-adaptively in a few cases.

4.7.2 Interpretation in the Context of the Extant Literature

Although biopsychosocial understandings of CLBP are currently advocated by the contemporary research and management guidelines of developed countries, it appears biomedical/biomechanical understandings are the focal point of the beliefs of CLBP patients in this current study and similar studies conducted in developed and developing countries (Darlow et al., 2014, 2015, Lin et al., 2013, Setchell et al., 2017, Igwesi-Chidobe et al., 2017). This could be attributed to the complex nature of CLBP (Main et al., 2010) and change (Setchell et al., 2017), the influence and role of HCPs (Gardener et al., 2017) and a need for legitimization by CLBP patients, since patients feel a biomedical perspective readily provides this (Chou, Ranger, Peiris et al., 2018). This influence of HCPs' and patients' need for legitimization is evident in the current study. The belief concerning cure as a definite management goal was common among the current study participants, although the participants understood their LBP from pathoanatomic and biomechanical perspectives. This contradicts previous findings from qualitative studies that suggest that acceptance of pathoanatomic explanations to CLBP increases tendencies towards poor expectations of recovery (Lin et al., 2013, Darlow et al., 2016, Sloan and Walsh, 2010).

All the participants in this study believed that an underlying structural defect was the cause of their CLBP. This belief was facilitated/reinforced by HCPs through multiple imaging requests and biomedical explanations, suggesting an influence of HCPs' biomedical/biomechanical orientation on patients' beliefs. This influence of HCPs has been documented in other studies on CLBP beliefs conducted in developed countries (Darlow et al., 2013, Gardener et al., 2017). However, SRs (Chou et al., 2018; Lim, Chou, Au et al., 2019) (all included studies from Western countries) report that among other things, patients expressed the desire for knowledge about the cause of the CLBP and a diagnosis from their medical encounter. Therefore, the tendency to proffer a diagnosis and request imaging may stem from patients' expectations, the desire to enhance patient satisfaction and the therapeutic relationship (Corbett, Foster, Ong, 2009). In this present study, patients' expectation of a therapeutic encounter characterized by diagnosis and treatment was prevalent and appears to be an underlying mechanism that may have facilitated reported HCPs' prescription of imaging and pathoanatomic diagnoses. Similar expectations of diagnosis from HCPs by patients were recorded in qualitative studies on CLBP beliefs conducted in developed countries (Glenton, 2003, Darlow et al., 2015, Singh et al., 2016).

A few female participants reported the belief that being female increased the chances of LBP due to physiological processes such as pregnancy and menopause. This belief is supported by findings of a SR of 98 prospective studies of the general population comparing the prevalence of LBP in males and females (Wang, Wang, Kaplar, 2016). The SR reports increased LBP prevalence rates in school age girls and especially women aged >50, when they were compared with aged-matched boys and men. The SR however searched only PubMed, which might impose limitations with identifying relevant studies. Menopause, pregnancy, female hormone fluctuations, psychological factors, menstruation and the responsibility of combining domestic and occupational roles have been adduced as potential culprits for increased LBP prevalence in females (Meucci et al., 2013, Williams et al., 2015, Wang et al., 2016).

In this study, nearly equal number of participants held the belief that either the back was weak, or the back was defected, yet capable. Qualitative and quantitative studies conducted in developed countries (Gron et al., 2019; Briggs et al., 2010, Lin et al.,

2013) have reported that increased disability is mostly linked with thoughts of more negative beliefs. However, it is unclear from this current study whether the thought of a 'defected but capable back' could be linked to CLBP symptoms or disability levels.

Another common belief among the study participants was the role of degeneration in the occurrence and progression of CLBP. Degeneration has however been reported to be more likely associated with predetermined genetics responsible for the function of cells of the back structures rather than an aggregation of activities over time, in a retrospective twin cohort study of 115 males (Battie, Videman, Gibbons et al., 1995). A SR consisting of 33 imaging studies (3110 asymptomatic individuals) (Brinjikji et al., 2015) has also challenged the notion that degenerative signs are definitive causes of CLBP and a predictor of pain intensity and disability. Brinjikji, Diehn, Jarvik et al., (2015) indicated that a high proportion of asymptomatic individuals (19% to 96%) exhibited varied spinal degeneration. Furthermore, numerous or severe MRI findings do not correlate with severity of LBP as found in a cross-sectional study of 170 disc-prosthesis candidates (Berg et al., 2013). Degenerative signs however tend to increase with age (Brinjikji et al., 2015). In addition, Setchell et al., (2017) intimates that, structural defects may account for initial episodes of LBP, but they may not be responsible for persistent, recurrent or chronic symptoms. Therefore, the biomedical belief that CLBP results from structural defects precipitated by overuse or degeneration, and associated biomechanical beliefs recorded in this current study, may not holistically/definitely explain CLBP.

In the present study, participants related the cause and course of CLBP to performance of postural and occupational activities. Ergonomics and occupational-related LBP had significant credence in CLBP in developed countries until recent times, and this was a basis for sick-leave certification (Driscoll et al., 2014). The global burden of occupational-related LBP study also attributed occupation-related activities as LBP risk-factors (Driscoll et al., 2014). However, a meta-synthesis of eight high quality systematic reviews (an aggregation of 99 studies) that assessed the causal relationship between different occupation-related activities '(twisting/bending, awkward postures, sitting, standing/walking, carrying, pushing/pulling, lifting and manual handling/assisting patients) and LBP found no strong evidence linking any activity to the occurrence and severity of LBP. Indeed, there was strong evidence against manual handling, awkward postures, carrying, sitting and standing as causal agents of LBP (Kwon, Roffey, Bishop et al., 2011). These activities reported by Kwon et al., (2011) as having the weakest evidence as causal agents of LBP appear to be the commonest causes of LBP reported in the present study findings. Confidence in the results of the meta-synthesis is high since a robust framework for causation was adhered to. In the current study, there was a widespread belief that overloading the spinal structures caused and worsened CLBP. However, back loading as assessed via running exercises has been suggested to improve the strength and composition of the intervertebral disc (Belavy, Quittner, Ridgers et al., 2017). Therefore, back loading may potentially provide some benefits for spinal structures.

In addition, Kingma, Faber, Dieen (2010) evaluated the spinal forces generated during lifting a wide object between both knees (including rounded back and straight back) by 11 male participants, using 3-D model and electromyography. When lifting from the ground, it was found that none of the lifting techniques produced greater back loads, thus questioning the effect of bending over 90º/ bending over to lift heavy loads on LBP as commonly believed by the current study participants. Furthermore, a SR of 10 RCTs (5RCTs evaluated LBP) assessing the effect of ergonomic interventions on neck pain and back pain, found low to moderate evidence that workplace ergonomic interventions were not superior to other interventions for prevention and pain severity of LBP among workers in the short and long terms. Again, this questions the notion of specific jobs/ergonomic shortfalls being causative agents of CLBP, as believed by the current study participants. According to Bardin, King, Maher (2017) due to the complex nature of CLBP, it is difficult to attribute a particular element as the cause of LBP, and the majority of LBP is non-specific, that is, without a definitive cause. Therefore, the emphasis on CLBP causes by patients, which also appears to be reportedly facilitated by HCPs, may rather increase the burden and negative impact of CLBP as detailed in this study. This emphasis on causation, in the current study, facilitated increased healthcare costs associated with numerous imaging, multiple healthcare and alternative medicine centers visit, medication and transportation costs; negative beliefs (FABs and catastrophizing) and focus on a cure. These may cumulatively negatively affect the course, management and outcomes of CLBP (Main et al., 2010).

FABs were a predominant finding in the current study, with a few participants reporting catastrophizing. Evidence suggests that cognitions, including beliefs and emotions influence pain pathways and modulatory systems and thus affect pain perception and control (Main et al., 2010). Therefore, the belief that pain is a red-flag and associated FABs recorded in this study does not only promote increased disability and low self-efficacy but also enhances unfavorable neurological states such as central sensitization, causing heightened and sustained pain perception (Nijs et al., 2010, Adams and Turk, 2015)[7]. Furthermore, these beliefs promote decreased mental health, assumption of

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[7] The studies by Nijs et al., (2010) and Adams and Turk, (2015) provide detailed discussions around the link between FABs and unfavorable neurophysiological states: this appraisal is beyond the scope of this discussion section.

sick-role and dependency on healthcare services (Main et al., 2010). Findings from this current study and previous quantitative studies conducted on catastrophizing in Nigerian and ethnic minority populations (Ogunlana, Odele, Adejumo, Odunaiya, 2015; Edwards, Ngcobo, Edwards, Palava, 2005) strengthen the notion that racial/ethnic peculiarities do not exclude some patients from pain catastrophizing. The Nigerian study was limited by the lack of documentation on how questionnaires were administered to illiterate participants. Magnification, a catastrophic thought which is related to worry about the future consequences of CLBP, was expressed by the current study participants. According to Ogunlana et al., (2015), magnification may be facilitated by inadequate HCP education of patients about the causes and future consequences of LBP. This current study and previous studies, therefore, suggest that HCPs' information sharing to CLBP patients need to be considered to address catastrophizing beliefs.

Although participants reported that their current passive coping and management strategies were predominantly influenced by HCPs, there was widespread patronage of prolonged herbal and alternative medicine and self-medication, which was influenced by the sociocultural environment. Therefore, attempting to address unhelpful beliefs and practices may require population-based strategies and interventions to target beliefs and practices related to social norms.

In this study, exploration of treatment approaches utilized by participants revealed that patients involved in prolonged self-medication with the use of herbs and over-the-counter medication especially in the initial phase of CLBP. The convenience of self-medication could account for its preference in the initial phase of CLBP. In Ghana, Boom, Nsowah-Nuamah, Overbosch (2004) suggest that self-medication may be common due to its relatively cheaper cost and limited accessibility to health facilities. Although Ghana has a national health insurance scheme, patients still have to cope with time and transport costs directly linked to accessibility, as reported by patients in this current study. Studies conducted in developed countries report that almost half of patients with LBP do not seek healthcare; and pain intensity and disability often enhance the possibility of visiting HCPs (Main et al., 2010). Moreover, current CLBP guidelines of developed countries suggest initial pain management by patients during the onset of LBP (Oliveira et al., 2018). However, in the current study, the belief that LBP is not an illness (upheld during initial phases of LBP), and prolonged self-medication promoted late treatment seeking from appropriate settings. This could have serious consequences especially in LBP that may be related to non-mechanical causes (e.g. tumor, infection). Therefore, in population-based strategies attempting to promote positive beliefs and attitudes within the Ghanaian context, education concerning when to report LBP symptoms to HCPs may be required.

The prescription and utilization of passive modalities for CLBP was reported by the participants. However, reliance on passive strategies promotes an external locus of control that is associated with repeated hospital attendance and high cost (Oliveira, Ferreira, Maher et al., 2012). Moreover, there is inconsistent and limited evidence supporting the effectiveness of passive therapies for CLBP (Lin et al., 2019). The utilization of passive modalities such as electrotherapy, prolonged medication use, and heat therapy contradict evidence-based clinical guidelines (Lin et al., 2019). This contradiction between usual care and evidence-based guidelines is also reported by Kamper, Logan, Copsey et al., (2020) in a systematic review of 26 quantitative studies (195,000 patients, all included studies were conducted in developed countries) assessing usual care for LBP among family physicians and in emergency departments. The reliance on passive modalities appears to be common in Africa as evident in previously conducted surveys on reported CLBP management practices by patients and HCPs (Major-Helsloot et al., 2014, Oppong-Yeboah and May, 2014).

In the current study, multiple health seeking pathways were sought and discussed by participants. They ranged from popular ones (herbal spices/medications and physicians) to less popular ones (physiotherapy and alternative medicine). The rather late involvement of physiotherapy, although an important aspect of the care for CLBP patients in developed countries, questions the awareness and visibility of physiotherapy as a healthcare pathway for CLBP among Ghanaians. According to Main et al., (2010), patients with decreased self-efficacy, increased disability, depression and pain intensity are more likely to seek and re-seek further health care. It is unclear from this current study whether physical/psychological states accounted for multiple health seeking consultations. Participants' narratives of multiple health seeking consultations depict aspects of health consumerism,[8] characterized by misinformed or poorly informed patients trying to make sense of their condition and the healthcare system. Consequently, patients' treatment choices were based on limited knowledge and referrals from family and friends, as opposed to treatment choices based on knowledge of available healthcare options.

The current study findings indicate that positive beliefs were mainly facilitated by patients' inherent beliefs. Again, this queries the management focus of Ghanaian HCPs in CLBP management. Bandura (1977) describes four sources of self-efficacy. Three of these sources (mastery experiences, vicarious experience and emotional and physiological states) are linked with personal experiences/states or role-modeling. However, a fourth source (verbal persuasion) highlights the role of influential others in

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[8] Health consumerism is characterized by patients search for and involvement in decisions concerning their health, including giving patients economic purchasing powers concerning their health (Dolan et al., 2009).

promoting self-efficacy. In the case of CLBP, HCPs may play such influential roles. Studies have sought to facilitate self-efficacy among CLBP patients through the implementation of self-management strategies and cognitive behavioural interventions (Du, Hu, Dong et al., 2017). These have been successful, highlighting the importance of the healthcare experience in facilitating positive beliefs such as self-efficacy.

The psychosocial impact of CLBP recorded in this study reflected most of the findings recorded from systematic reviews on the impact/experiences of CLBP, although these have mainly involved studies from developed countries (Froud et. al., 2014, McNeela et. al., 2015, Bunzli et al., 2013). This study's findings conform with research by Lin et. al., (2013) that suggested the gendered impact of CLBP, which involved wives altering their lives to take care of their husbands. Although the current study participants expressed feelings of loss, expressions of guilt about familial support were absent in their narratives, highlighting aspects of disparities between this study and previously conducted systematic reviews. Loss of self and roles, which was a major impact of CLBP described by the participants, appear to partly originate from acquired FABs from HCPs. Therefore, it appears that the practice of integrating patients back to work, or advice to return to work as early as possible, as suggested in guidelines and studies conducted in developed countries (Lin et al., 2019) is deficient within the Ghanaian CLBP management arena. Early return to work mitigates the effects of the feeling of loss, and enhances function, and psychosocial outcomes (Shaw, Nelson, Woiszwillo et al., 2018). Some participants in the current study relayed their fears concerning disability and the use of aids. This fear of disability and possibility of using aids may be linked to Ghanaian cultural representations that associate disability with supernatural causes and stigmatization as reported in a critical review of 26 articles on physical disability, rights and stigma in Ghana (Grischow, Mfoafo-M'Carthy, Vermeyden et al., 2019). Furthermore, lack of support from work and the financial impact of CLBP were reported by the participants. Social support, according to McKillop et al., (2015) moderates LBP psychological outcomes, particularly depression. There is strong evidence that occupational-related psychosocial factors, such as job dissatisfaction and lack of social support affect LBP outcomes (Hoogendoorn, van Poppel, Bongers et al., 2000). Participants in this study however expressed a reliance on family and friends for sustenance, with no formal support systems in place, especially for self-employed individuals. Research on the effect of this lack of occupational and formal support systems in individuals with disabling CLBP may be beneficial.

Ghanaian patients with CLBP demonstrate an experience of CLBP guided by beliefs that are formed through personal convictions, the predominant influence of HCPs and association with family, friends and the Ghanaian sociocultural environment. Therefore, to address CLBP beliefs, these relevant constituents of the CLBP journeys of patients need to be considered.

4.8 Reflection

The researcher approached the data collection with patients as an insider (a Ghanaian physiotherapist) and an outsider (never experienced LBP). Being a Ghanaian appeared to facilitate ease of communication and trust between the researcher and the participants, as vividly expressed by one participant, *"you are one of us that is good, you people should study the condition and come and help us"* (reflexive diary). It also facilitated the understanding of contexts, language, jargons and phrases used by participants. It appeared that the quest for a cure was in some cases translated to the researcher and was a motivator for participating in the study. The study protocol and information sheet were however explained to participants. Participants sometimes imagined the researcher had influence encompassing domains such as informing policy. This may have affected the situatedness of the researcher by the patients, with patients possibly perceiving the researcher to be in a position of power during the interviews. The aims and envisaged dissemination channels were however adequately explained to participants. With the researcher's awareness of a likely perception of 'powerful' researcher, a conscious effort to let patients drive their narratives was made. The researcher had to learn to follow through the dialogue, ensuring the interview guide and emerging stories had been covered, without necessarily having to follow a sequential pattern of questioning. Most patients also appeared to be appreciative of the opportunity to share the intricacies of their experience with CLBP. It appeared that interviews as a form of data collection was alien to most patients and concerns about confidentiality were raised because of recording of voices. The ethical considerations regarding confidentiality, anonymity and data storage were reiterated and if participants were willing to continue, they were included in the study.

Though the researcher strived towards a comparable number of male and female patients while using maximum sampling variation and theoretical sampling, the female participants dominated. This disparity in gender was also reflected in the number of male and females seeking physiotherapy treatment at the recruitment sites as indicated by the gatekeepers, with the females seeking care being significantly higher. However, time constraints attached with conducting a PhD research contributed to the inability to wait until equal numbers of participants were reached. Although a fewer number of males may decrease the ability to fully explore all aspects of CLBP beliefs related to Ghanaian males, gender related issues that were raised were explored in-depth.

Participants’ accounts implicated HCPs as prominent influencers of their beliefs. Analyzing this influence of HCPs introduces a double hermeneutic, since participants interpreted what HCPs’ encounters entailed and this information was further interpreted by the researcher. However, this influence of HCPs appeared to run through all participants’ narratives and mostly in similar ways, hence the possibility that HCPs were indeed prominent influencers of patients is high. Moreover, the HCPs data, which would be discussed in subsequent chapters, may serve to clarify or substantiate some of these influences reported by patients. The researcher being an insider, narratives of HCPs’ influence on maladaptive beliefs/practices were not surprising but worrying. Moreover, patients’ narratives ignited reflections and realizations on how HCPs (including the researcher) may have unintentionally deepened the negative psychosocial impact of CLBP on patients.

Chapter 5: Bio-medical/mechanical Perspectives, Sociocultural Perspectives and Gatekeeping: Doctors' Beliefs Regarding CLBP and its Management

5.0 Introduction

Doctors, in Ghana and globally, serve as gatekeepers in the healthcare environment, responsible for referral of patients to secondary care thus facilitating investigations and management choices (Bishop et al., 2008). In CLBP specifically, doctors may serve as initiators of long-term patient choices that may promote chronicity and disability, or otherwise (Linton, Vlaeyen and Ostelo, 2002). Indeed, evidence from the patients involved in the present study buttresses the notion that HCPs' (including doctors') beliefs and treatment choices may be adopted by patients and serve as long term coping strategies.

This chapter highlights the CLBP beliefs of primary healthcare physicians in Ghana and the resultant reported practices. Specifically, this chapter will highlight doctors' CLBP beliefs around causes and prognosis, referral pathways, coping and management strategies. In addition, this chapter discusses the evidence derived that suggests that doctors formulate their beliefs within the framework of their professional identities and sociocultural expectations. Therefore, the mechanisms underlying doctors' beliefs will be discussed: the healthcare environment (paternalistic care, professional roles/identity, fragmented CLBP management) and sociocultural environment (sociocultural expectation of passive therapies).

The chapter begins with a description of participants' demographic characteristics. The chapter is presented using four main headings: each heading describes a category, its concepts, and the mechanisms at play within the specific category. A summary of the four (4) categories, nine (9) concepts and seven (7) mechanisms derived is provided in Figure 14. The chapter ends with a personal reflection and summary. The following section describes doctors' demographic characteristics.

5.1 Participants' Demographic Details

The study comprised fifteen (15) doctors; six from site one and nine from site two. Most participants, ten (10) were males and five (5) were females. The participants' ages ranged between 28 to 45years.The mean age of participants was 34.7±5.4. Six (6) participants were family medicine specialists, two (2) were senior medical officers and seven (7) were medical officers[9]. The participants' years of working experience ranged from three (3) to fifteen (15) years; mean years of working was 8.9±4.4. Four (4) participants reported previous personal experience of LBP, though not disabling (Figure 13).

Codes	**Age**	**Gender**	**Rank**	**Years of Working Experience**	**Previous Personal Experience of LBP**
D1	45	Male	Senior Medical Officer	15years	No
D2	35	Female	Resident/Medical Officer	10years	Yes
D3	28	Male	Medical Officer	3years	No
D4	39	Male	Senior Medical Officer	15years	No
D5	42	Female	Specialist	15years	Yes
D6	40	Male	Specialist	12years	No
D7	31	Male	Medical Officer	5years	Yes
D8	40	Male	Specialist	13years	No
D9	35	Male	Specialist	>10years	No
D10	29	Male	Medical Officer	4years	Yes
D11	35	Female	Specialist	9years	No
D12	29	Female	Medical Officer	4years	No
D13	29	Male	Medical Officer	3years	No
D14	28	Male	Medical Officer	5years	No
D15	36	Female	Specialist	10years	No

Figure 13: Demographic Characteristics of Doctors

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[9] The hierarchical structure of doctors in Ghana consists of the following positions (from the least to the highest rank); house officers, residents/medical officers, specialists, consultants. In the absence of specialist training, doctors rise through the ranks of senior medical officer and principal medical officer, based mainly on years of working experience.

Categories	**The Predominance of Bio-medical/mechanical Beliefs**	**Maladaptive Beliefs and Practices**	**Limited Involvement of other HCPs**	**Positive Beliefs**
Concepts	Biomedical Causal Beliefs ➢ Degeneration and Trauma ➢ Diagnosis of CLBP Causes ➢ Specialists Referrals	Mal-adaptive Beliefs ➢ The Significance of Pain ➢ De-Prioritizing CLBP ➢ Fear-avoidance beliefs	Limited Physiotherapy Referral for Misplaced Reasons	Activity and Exercises
	The (Im) Possibility of ‘Cure’	Maladaptive Practices Doctors Facilitated Practices ➢ Prescription of Sick leave ➢ Prolonged Prescription of Analgesics Patients Facilitated Practices ➢ Late Hospital Visits	Non-Involvement of other HCPs and Alternative Medicine Beliefs	Management Approaches
	Biomechanical Causal Beliefs			
Mechanisms	Professional Identity ➢ Doctors’ Bio-medical/ mechanical Orientation)	Professional Identity ➢ Paternalistic Healthcare ➢ Bio-medical/ mechanical orientation Sociocultural Expectation of Passive Therapy	Fragmented CLBP Management Limited Knowledge of Physiotherapy and other HCPs Limited Physiotherapy Visibility	Doctors’ Biomedical Orientation

Figure 14: Categories Concepts and Mechanisms

5.2 The Predominance of Bio-medical/mechanical Beliefs

All the participants adduced biomedical/biomechanical causes to CLBP. A varied range of perceived biomedical and biomechanical causes of CLBP is depicted below by a twenty-eight-year-old female medical officer.

"In the young, the causes: trauma, maybe they've had road accidents, maybe a workplace activity, that's one group. Another group is those involved in physical activity, maybe the work they do; construction workers, sedentary lifestyle, sitting poor posture. But for the old, most of them it's degenerative so maybe osteoarthritis" (D13).

Only three participants (D4, D5 and D9) with working experience greater than ten years acknowledged that CLBP could result from non-specific or unknown causes. According to these participants, non-specific CLBP referred to back pain that persisted in the absence of underlying pathology indicated by physical and/or radiological examination.

"From my experience, majority of them there are no specific causes, they just have pain and on assessment, what we normally find is osteoarthritis or disc problem, not frequently they also have nerve root problem. Maybe some osteoarthritic problem or disc problem, there are times you don't find any cause at all" (D9, 35year-old-male, specialist).

None of the participants acknowledged the role of psychological factors as risk-factors of CLBP during assessment and treatment. Only a thirty-one-year-old medical officer appeared to be cognizant of the role of psychological factors in CLBP. However, he acknowledged psychological factors were generally not considered during assessment and treatment of patients with CLBP. In addition, this participant and several others reported prescription of amitriptyline solely for nerve pain in patients with CLBP, despite acknowledging the role of amitriptyline in treating depression. This reinforces the focus on biomedical perspectives.

"…when I say psychological, I don't mean its fully psychological, but people get used to the pain so much that sometimes even when it's not there they may think it's still there. These patients on chronic medications for other comorbidities even though they don't feel it once they are in front of a doctor they always want to say they have been having waist pain, but maybe at the moment there is no waist pain. And I think sometimes depression can also be linked to that. So, we give amitriptyline. The amitriptyline we give is not really to treat depression, but studies shows that it helps with nerve pain as well. Well most of the time honestly, we don't really go into details as regards psychological factors. So, the drug is not really for a psychological problem but if it's a nerve pain then we give that" (D7).

In reporting decisions regarding diagnosis and establishing CLBP cause, the doctors always referred to physical examinations of pain and function only, exposing an absence of psychological assessments.

"I would have to examine and see where the pain is, first, how severe the pain is in terms of function... So, we assess their activities of daily living. So how these may have been impaired with by the disease process" (D9, 35year-old-male, specialist).

Participants' narratives indicated a degree of socialization, with frequent use of the collective descriptors, 'we' and 'here' when referring to CLBP management. This points to the potential influence of the healthcare environment on learnt professional roles and CLBP management practices. This will be explored in detail throughout this chapter.

"…Basically, that's what ***we*** *do" (D8) –emphasis added by author*

"…Those are the major interventions we carry out ***here****" (D10) - emphasis added by author*

The next section discusses specific concepts under this category: biomedical causes, biomechanical causes and beliefs related to cure of CLBP as described by the participants.

5.2.1 Biomedical Causal Beliefs of CLBP

5.2.1.1 *"As you grow old, the bone wears off"*: Degeneration and Trauma

Most of the participants acknowledged that CLBP was a common condition for which patients reported to their respective primary healthcare facilities.

"In fact, here CLBP is a common presentation" (D9, 35year-old-male, specialist).

All the participants believed that CLBP was common in the elderly, suggesting an overly deterministic approach to CLBP causation on behalf of the doctors. Therefore, they attributed CLBP to degeneration of the spine resulting from ageing and in some cases, overworking. The belief concerning age-related degeneration, as expressed by a forty-year-old male specialist, is described below.

"Based on the elderly population that I take care of, I see a lot of them (CLBP patients). The chronic care they all come with LBP. And I think it's part of the ageing problems: degeneration of the spine" (D6).

The thirty-five-year-old female resident also exemplifies the belief concerning over-working and CLBP below.

"As Ghanaians we work so hard, occupational hazards, because a lot of the women they're usually the market women, they sit in the market for a long time, they've been travelling long distance to go and bring whatever goods they are selling. So, all those things contribute to spinal problems like degenerative disease" (D2).

All the participants appeared to believe in the dated theory[10] that postulates that 'wear and tear' leads to spinal degeneration and this becomes a source of CLBP. Therefore, some doctors reported that the role of 'wear and tear' in the onset and progression of LBP formed an important aspect of biomedical causal explanations given to patients.

"I try to explain to them (patients). So, when it's like that telling them that OA (osteoarthritis) is degenerative. As you grow old, the bone wears off that's what generates the pain; the bone that has worn off" (D1, 45year-old-male, senior medical officer).

Also, most of the participants believed CLBP could arise from trauma resulting from road traffic accidents or falls. The forty-year-old male specialist, for instance, indicated this belief was strengthened through personal experiences with patients reporting CLBP after a traumatic incident.

"From my experience, people who have had trauma some years back, maybe they had an RTA and it was not well managed. Maybe they slipped, they had a strain at their back and subsequently over years they tend to get this back pain" (D8).

The next section explores the biomedical perspectives of doctors regarding diagnosis of CLBP causes.

5.2.1.2 "*There is usually an organic cause*": Diagnosis of CLBP Causes

Most of the participants believed that there was always an underlying 'legitimate' biomedical cause of CLBP symptoms, such as an underlying pathology or structural deficit.

"There is usually an organic cause all the time, I have realized that when you do the X-ray, you do see something. Slipped disc, spondylosis, osteophytes" (D12, 29year-old-female, medical officer).

All the participants believed that the most frequent cause of CLBP could be traced to deficits in the back structures (bone, muscle or neurological component). Consequently, the participants believed that pathoanatomic causes such as

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[10] 'Wear and tear' of musculoskeletal structures of the body was previously regarded as a common cause of musculoskeletal pain (e.g. LBP). However, contemporary research has found that 'wear and tear' may be present in asymptomatic individuals and therefore may not necessarily account for CLBP (Brinjikji et al., 2015).

spondylosis, impingement, disc problems, spondylolisthesis were the major causal culprits of CLBP. Spondylosis (osteoarthritis) appeared to be adduced as the commonest cause of CLBP by most participants.

"The pain may be from the bone or ligament or muscle or the neurological element. What we normally find is osteoarthritis and sometimes because of the pain, they might have straightening of the spine, some of them also have the paraspinal muscles being taut, not frequently they also have nerve root problem. Sometimes the vertebrae slipping on each other, what we call spondylolisthesis" (D9, 35year-old medical officer).

All the participants indicated that CLBP may occasionally result from specific causes such as tumor, tuberculosis or vertebral fracture. This is described below by a twenty-nine-year-old medical officer.

"Once in a while you meet people who have some prostate cancer or something that you're thinking could have metastasized, causing the CLBP" (D10).

Evidently, inherent biomedical knowledge underpinned participants' narratives as they explained potential causes of CLBP, depicting a dominance of doctors' biomedical orientation in their understandings pertaining CLBP. In accordance with this biomedical perspective, the participants believed radiological imaging and laboratory investigations were an important aspect of CLBP assessment and management. The participants reported that laboratory investigations and imaging helped to rule in/out red flags (signs of potential serious pathology) to eliminate or identify sinister pathology and thus facilitated diagnosis.

"When the patient comes, you have to find out the cause, you look at the X-ray and it's becoming bad, the next thing is to do an MRI that gives me my diagnosis" (D13, 29year-old-male, medical officer).

"We do certain investigations. When you talk about CLBP, ideally as a family physician you should look out for red flags, you should find out what is causing the CLBP. Some elderly person comes very anaemic, you do the lab work and the Hb is very low. You are thinking could it be prostate?" (D8, 40year-old-male, specialist).

Most participants believed radiological imaging was necessary for all/most patients with CLBP. Thus, they acknowledged prescribing at least an X-ray for all CLBP patients and, in some cases, an MRI. According to the participants, an MRI was normally suggested when X-rays depicted something more than an osteophyte or presence of disc herniation, or when a red flag was suspected. They believed imaging was important to identify CLBP cause, improve care, inform referrals and manage patients' expectation. Some reasons for participants' routine imaging prescription are described below by a twenty-nine-year-old medical officer.

"I request X-rays for all of them (patients with CLBP) because at times LBP is broad, so many things can cause it. So, when you do an X-ray and the X-ray is fine, it tells you that it's something else. So, it's not just for confirmation, it's also to rule out other causes" (D13).

Among the participants who believed radiological imaging was necessary for all/most CLBP patients, a few reported being aware of the evidence that suggests that radiological imaging should not be universally prescribed. They indicated that patient satisfaction was a driver for routine imaging requests. However, the explanation given to patients (as reported by the participants) appear to initiate/reinforce patients' desire for X-rays and reinforce medical paternalism. This is depicted below by the forty-year-old male specialist.

"Most of the patients that come to you because they've been having these symptoms for more than three months, ideally, they will benefit from an X-ray. You know you choose your patients you don't just go and do X-rays when it's not too indicated. But from experience the people I see with CLBP, benefit from X-ray and … sometimes patients also get satisfied. Nowadays we are advised to do more of patient-centred care. They feel happy when you tell them to do an X-ray that would show them where they are having the problem. A good majority of them would prefer to do the X-ray see the pathology for themselves. Doctor re-assures them I don't see anything; everything is fine or there is this. They feel complete you know" (D8).

The next section discusses doctors' referrals for specialist care and its attendant biomedical inclination.

5.2.1.3 *"We would either refer to the neurosurgeon or orthopaedic surgeon":* Specialist Referrals

All the participants reported that CLBP identified as resulting from specific causes such as spinal cord compression, metastasis or fracture was referred to either neurosurgeons or orthopaedic surgeons.

"Radicles, saddle distribution, then it means there is a compressive myelopathy. Few of them may have rare problems which may be associated with progressive limb weakness. Because some of them come with the CLBP and it must have metastasized and some of them come with what we call spastic, their legs are twitching whatever. So, these immediate presentations you have no choice but to refer to either orthopaedics or neurosurgery" (D4, 39year-old-male, senior medical officer).

All the participants believed that referral of specific CLBP, severe, persistent and disabling CLBP to an orthopaedic and/or neurological surgeon was an accepted and collective protocol used within their professional domain and working environment.

Therefore, every participant reported either neurosurgical or orthopaedic referral as the commonest referral pathways for CLBP patients that they attended to.

"Those that ***we*** *do certain investigations, and* ***we*** *think are quite bad* ***we*** *refer to the neurosurgeons.* ***We*** *would either refer to the neurosurgeon or orthopaedic surgeon" (D8, 40year old male specialist)- emphasis placed by author.*

Two participants (D10 and D11) mentioned that these referral pathways were highlighted during their medical training and therefore the knowledge received informed their referral decisions.

Well, when I was in school the cases of CLBP that is what we were taught. So, I believe that is where it should go to" (D11, 35year-old-female specialist).

According to the participants, neurosurgical referral was necessary when patients presented with neurogenic/neurological symptoms such as radiculopathy, paraesthesia and numbness or multilevel defects in the spinal structures.

"If it's more neurological symptoms like paraesthesia and depending on the severity you may refer to the neurosurgeon" (D7, 31year-old-male, medical officer).

Some of the participants however believed that surgery should be the last resort and so seldom referred to neurosurgery with the intention of surgical management. Reasons adduced for this included perceived lack of expertise for spinal surgeries and complications that could arise.

"I refer them to those places (neurosurgery/orthopaedic surgery) with a lot of caution. That's why I mentioned the spinal surgery. They are best for that. And we don't have it here, so I just send them there because they are the closest but it's not the best for me. I don't normally advise surgery. For these CLBP, because the consequences are 50-50" (D4, 39year-old, senior medical officer).

Most participants believed that orthopaedic referral was beneficial when there was a bony or structural problem, paraesthesia or numbness.

"So, if it's purely structural, a problem with the bone or something then it goes to orthopaedics" (D14).

According to the participants, except for steroid injections which were sometimes administered by orthopaedic surgeons, all other treatments received by patients were normally a replica of treatments prescribed by primary healthcare doctors. The twenty-nine-year-old medical officer describes this and emphasizes that specialist care motivated referral of CLBP patients to orthopaedic surgeons.

"What the orthopaedic surgeons do it's similar to what we do here actually. Usually they do the same NSAIDs, refer to physiotherapy, basically. Also, the orthopaedic surgeons they might be able to do injections, steroid injections" (D10)

Interviewer: Why do you refer to orthopaedic surgeons then?

D10: They are specialists, so we still have to refer the patients to them for specialist care"

The next section discusses doctors' differing beliefs concerning the prognosis for CLBP

5.2.2 *"The pain never seems to go away"*: The (Im) Possibility of 'Cure'

The participants held differing beliefs related to the prognosis of CLBP. Some participants believed that total resolution of pain was possible because they reported having had this experience with patients.

"I know that it can improve. I've had patients that have had complete resolution of their chronic back pain" (D10, 29year-old-male, medical officer).

Others believed CLBP to be a life-long condition. Therefore, underlying pain would always be present albeit patients would have better and worse days. A reason adduced for the perceived permanence of CLBP was the degeneration associated with CLBP.

"It's not like it goes away and it has come back. There's a pain an underlying constant chronic pain. It's there all the time. Just that at one point they (patients) will feel it more and it would make them come and most of the patients also find ways of dealing with the pains themselves. One thing I tell them is that this pain may never go away completely. I just tell them we are only going to manage the pain to a point that will make you comfortable enough to go about your daily activities. But not to take it away entirely" (D2, 35year-old-female, medical officer).

A twenty-nine-year-old medical officer believed CLBP was a progressive degenerative condition, hence may eventually worsen in the elderly.

"With the elderly especially, CLBP is a progressive degenerative condition, so I don't want them to stop walking now at least" (D10).

A few doctors indicated that they believed the prognosis of CLBP was mostly unpredictable.

"…But with the chronic ones, you can never be sure. Sometimes too we are frank to tell the patient we cannot predict" (D4, 39year-old-male, senior medical officer).

Some doctors reported that the inability to 'cure' CLBP became a source of frustration for them, as they could not meet patients' expectations.

"It's very challenging because when they come, they expect that you should treat it and the pain should go completely but with the LBP it's not the case" (D13, 29year-old-male, medical officer).

"You see there is a lot of frustration with managing CLBP. The patients keep coming; the pain never seems to go away and there is limited expertise for surgery" (D4, 39year-old-male, senior medical officer).

The next section describes biomechanical beliefs held by the participants about the causes of CLBP.

5.2.3 *"It's mechanical":* Biomechanical Causal Beliefs/Risk-factors of CLBP

All the participants believed that the occurrence of LBP/CLBP could be linked to posture and occupation, depicting doctors' biomechanical orientation. This is described below by the thirty-six-year-old female specialist.

"Basically, I would say it's (CLBP) mechanical, say it's more of positional, their sitting posture, those who sit for long hours, long distance drivers, those artisans like masons who are carrying, who lift heavy objects so it's more mechanical" (D15).

The participants believed that a set of postures, commonly termed 'bad' postures were responsible for the occurrence and persistence of CLBP. According to the participants, 'bad postures' were postures that compromised the maintenance of an upright/straight back when performing domestic and work activities. These 'bad' postures included sitting in a slouched position and bending forward 90°. This is described below by the forty-year-old specialist.

"For most of my patients I think it's the posture. They have bad posture and the body mechanics. It's how we lift up things, stooping forward, how we carry things, how we sit, how we sleep" (D8).

All the participants believed that assumption of prolonged static postures (prolonged sitting, standing or bending) were responsible for CLBP. Consequently, work activities such as driving and office work that demanded such postures were considered risk-factors and causes of CLBP as described below by the twenty-nine-year-old male medical officer.

"The accountants, those who sit a lot. They are the people who come a lot. So, the sedentary workers, the market women, the bankers. Oh, those that sit-down selling tomato and onions, they don't get up. Those are the common risk-factors that I've seen" (D13).

The participants believed that these ‘bad’ and prolonged postures induced strain on the back structures.

“Some are office workers who sit often. We see quite a number. That falls under the ergonomics. They’re straining their back. It is said that when you tend to strain the back a lot, the muscles when they get strained you are at risk of developing CLBP in the future so I’d put those caliber of workers as risk” (D8, 40year-old-male, specialist).

Furthermore, manually intensive jobs such as farming, jobs that demanded lifting of heavy loads or factory hands were believed to be injurious to the back, since they were believed to place undue strain on the back. This is described below by a forty-year-old specialist at site one.

“People who involve in farming, other activities like digging... They tend to complain, or they present with LBP. Yes, manual labour they come with that” (D6).

Therefore, the participants reported that the type of work patients engaged in was a vital question asked during assessment of CLBP patients.

“You know a lot of people tend to sit down so usually when people come with back pain one of the first questions, I ask them is what work you do” (D3, 28year-old medical officer).

The participants believed that furniture that facilitated the compromise of a straight/upright back could cause and worsen CLBP. The commonly implicated furniture were mattresses and seats/chairs. The thirty-nine-year-old senior medical officer describes his personal belief (gained from patient experiences) regarding type of mattresses and inception of CLBP.

“What I notice is the type of bedding material they use. Some of them the mattress is not the high-density mattress. So, I’ve noticed that those who use mattresses that sink and are not firm. Most of them have these CLBP problems” (D4).

The next section explores the maladaptive beliefs and practices reported by the participants.

5.3 Maladaptive Beliefs and Practices

All the participants possessed maladaptive beliefs concerning CLBP and reported maladaptive practices for management of CLBP. This category explores the participants’ beliefs related to the perceived significance of pain, de-prioritizing CLBP, FABs, passive coping/management strategies and late hospital presentation. These are described in subsequent sections.

5.3.1 Maladaptive Beliefs

5.3.1.1 *"The most important is pain"*: The Significance of Pain

Although all the participants believed that pain and function were important indicators for CLBP management, pain was believed to be the most important symptom. Therefore, the participants reported that pain-relief was considered the most important goal and was focused on in CLBP management. The participants believed pain-relief was a pre-requisite for performing work/domestic tasks.

"First of all, it's pain-relief. Once the pain is relieved, they'd be able to function" (D5, 42year-old-female, specialist).

Some participants reported that the belief that pain was the most important consideration in CLBP had been borne from experiences with interacting with CLBP patients.

"But I must say both: function, pain. I think the most important is pain. Most of the patients come to the health facility when there is pain. If there is no pain, and they're having some sort of symptom without pain, they'd stay at home and self-medicate. If the pain is unbearable, they're uncomfortable" (D8, 40year-old-male, specialist).

However, it appeared that participants' professional role of symptom treatment/control underpinned their focus on pain and pain-relief.

"LBP, radiculopathy, numbness. Those are the symptoms or signs that may be present. Usually, you try to elicit them because they are the ones that we are worried about. The pain is what we can manage. But I think generally the radiculopathy is the commonest" (D10, 29year-old medical officer).

The next section discusses participants' beliefs that translate into de-prioritization of CLBP.

5.3.1.2 *"We sometimes overlook the back pain"*: De-Prioritizing CLBP

Most participants reported that because CLBP was commonly present in the elderly, most patients with CLBP visiting them had other comorbidities, particularly hypertension and diabetes.

"On a regular basis I see most of them (patients with CLBP). Most of them are hypertensive, diabetics coming for a refill. Quite a significant number of them tend to have CLBP. With our geriatric clinic, we say about 60, but elsewhere it's accepted as 65. Most of them have other comorbidities so the person is coming with LBP, same person has diabetes, hypertension" (D8, 40year-old-male, specialist).

However, more than half of the participants indicated that the other comorbidities were more important than CLBP due to the fatal consequences that could arise from the comorbidities. Therefore, they reported prioritizing care for the other comorbidities when patients presented with CLBP and comorbidities.

"The first one is the diabetes. Diabetes causes a lot of pain. It causes chronic morbidity, complications, that's why my focus would be on that. If I have a patient with all three (CLBP, diabetes and hypertension), I'd target the diabetes first actually because as I said the diabetes neuropathy can be very debilitating. They (diabetes and hypertension) would have more attention because they are associated with far more complications" (D10, 29year-old-male, medical officer).

Some doctors indicated that the limited priority given to CLBP by doctors was strengthened by the perception that patients themselves did not prioritize CLBP. They recounted that patients often reported CLBP during reviews for other comorbidities; with only a handful reporting to the hospitals for only CLBP, and this impacted on how they perceived CLBP.

"Majority of them (CLBP patients) are coming to report other things. Hypertensives, diabetics, they are coming for review because of the hypertension, diabetes then they mention that I have CLBP. They (patients) don't give it a lot of priority. Few people (patients) do but majority don't. Well, I think that if you came purposely because of that (CLBP), then I'd think that it's very severe as compared to those who come for other things and mention it. The severity of every condition affects how you'd approach it" (D10, 29year-old-male, medical officer).

On the contrary, two participants (D3 and D9) believed CLBP was a worrying condition for patients with CLBP, as such patients presented to facilities solely because of CLBP.

"In fact, here back pain is a common presentation and they come really because they have back pain, especially if it's disturbing them or if it's been longstanding" (D9, 35year-old-male, specialist).

Two participants (D7 and D10) who reported experiencing debilitating LBP/CLBP themselves indicated that they had managed to ignore the pain sometimes and carried out their normal activities with minimal use of medication. They reported that this enhanced their belief that CLBP was not quite a serious ailment.

"We focus a bit more on maybe the blood pressure, the fasting blood sugar. We sometimes overlook the back pain. Well at least (pause) I myself I have back pain now I don't know whether I should call it chronic or whatever. But I don't even take medications. It could be a reason I think it's not that serious" (D7, 31year-old-male, medical officer).

However, a few doctors indicated that they adequately prioritized CLBP management irrespective of other comorbidities since all patients' presenting complaints deserved equal consideration.

"You can't manage them (comorbidities) and leave the pain out because the pain is very important to them (patients with CLBP)" (D12).

The next section discusses doctors' fear-avoidance beliefs.

5.3.1.3 Fear-Avoidance Beliefs

All the participants, having embraced biomechanical causes of CLBP, indicated numerous FABs related to posture and activity performance. They indicated that these FABs were relayed to patients during therapeutic encounters and were expected to form an aspect of patients' long-term coping.

"Some of them have to bend a lot, some of them are sitting so usually if we don't remove the risk-factor, they still come with the same problem. So, we tell them not to bend, not to sit for too long and we expect them to modify their activities as such… even when there is no pain" (D3, 28year-old-male, medical officer).

The subsequent sections demonstrate doctors' FABs and biomechanical orientation and how this influenced patient advice/education and management strategies.

5.3.1.3.1 *"Don't Bend"*: Avoiding or Modifying 'Wrong' Postures

All the doctors reported advising patients to avoid prolonged sitting, standing or walking. They reported that they encouraged patients to take intermittent breaks to avoid excessive strain on the back. This advice was normally given in relation to the participant's livelihood as depicted by the thirty-one-year-old medical officer below.

"Some are drivers. We ask them not to sit and drive for long, to take rests from time to time even when they're doing long journey travels" (D7).

All the participants believed that 'wrong' sitting and sleeping postures needed to be avoided. Therefore, they reported advising patients on the use of pillows for extra back support, change of mattresses that were not firm or resulted in backaches, adoption of upright postures when sitting and the use of appropriate work seats.

"I try as much as possible to advise them on what to do. So, I advise them on their sitting posture, to sit upright, not to lift heavy things and watching the bed they lie on, if it goes in they wake up with all these aches, then to go with a firmer mattress" (D11, 35year-old-female, specialist).

All the participants also believed bending over 90º to perform activities could be injurious to the back and hence should be avoided. They demonstrated how they taught patients alternate ways of bending to pick items or work (bending the knees or adjusting work surfaces). The forty-year-old specialist exemplifies how he advised his patients against bending, normally in relation to their work.

"Avoid straining yourself if maybe you're a nurse and you have to nurse a patient on the bed. Don't bend or don't strain yourself. If the bed can come up all the best. If the bed can't come up and you can go a bit low so that you don't put too much strain on your pelvis muscles" (D8).

The next section discusses the participants beliefs concerning avoiding certain activities.

5.3.1.3.2 *"They shouldn't lift heavy stuff"*: Avoid Debilitating Activities

All the participants believed that some activities were detrimental to patients with CLBP, because they were injurious to the back and imposed strain on the back. Therefore, they believed that activities performed by patients with CLBP needed to be regulated. The twenty-nine-year-old male medical officer demonstrates this belief below.

"There are activities that are debilitating. So lifting is debilitating. It worsens it (CLBP). But things like walking won't worsen it. But even lifting if you can't it's better to teach the person how to lift and all those kinds of things. As active as you can be is very high, as active as you can be looks at the extreme end of activity. I don't want you to be at the extreme end of activity. I want you to be active, but as active as you can be stretches it" (D10).

Lifting of heavy loads was considered detrimental to the back. Therefore, the participants reported that they advised avoidance of lifting heavy loads where possible or modification of such activities by bending the knees or kneeling to pick loads and reducing the weight of loads.

"Your back is paining you then you are going to lift heavy things. It's not going to help you. If that's what you do for a living, get somebody to help you. Well, that's what I tell them they shouldn't lift heavy stuff" (D13, 29year-old-male, medical officer).

Some of the participants acknowledged that in circumstances where lifting heavy loads formed a core aspect of patients' livelihoods, it was difficult and sometimes not feasible to proffer this advice.

"I rarely advise on lifting heavy objects because often times it's their (patients') work, you can't really tell them to stop doing their work. So, I ask but it's difficult. But I generally tend

not to. Maybe I'd tell you if you can reduce some of it, reduce it but you can't tell them to stop their work" (D14).

Some of the participants believed that activity should be guided by patients' pain and therefore advised performance of activities when there was minimal pain. They appeared to believe pain would pose a major hindrance to patients' performance of activities.

They shouldn't keep walking when they are in pain. As soon as they are walking, they know how long they can walk they get there, and they feel pain they can't bear they should just settle for a while and then continue" (D7).

A few others believed activity performance should be dependent on a patient's tolerance.

"It's (Activity) as much as they can tolerate. I won't impose. When you can't tolerate it, you stop" (D9, 35year-old-male, specialist).

Most of the participants did not necessarily believe the perception that pain, when performing activities, equals more harm.

"…It's not about the pain. Because usually the activity as you exercise more the pain improves. That's what I tell them. If they exercise more, the pain decreases" (D10, 29year-old-male, medical officer).

The next section discusses maladaptive practices reportedly facilitated by doctors and patients.

5.3.2 Maladaptive Practices

5.3.2.1 Doctors' Facilitated Practices

5.3.2.1.1 *"I give them excuse duty sometimes"*: Prescription of Sick Leave

Although all the participants believed that activity was recommended for patients with CLBP, about half of the participants reported prescription of sick leave for patients with CLBP sometimes or occasionally. Also, most participants who supported sick-leave for patients with CLBP reported being aware of the evidence that suggests sick-leave facilitates poorer outcomes in CLBP, suggesting a dissonance between doctors' beliefs and reported practices.

"Yes, I would give excuse duty (sick-leave) sometimes. If the patient can generally not tolerate the work, you give them excuse duty for a while, but you tell them that the outcomes are better with activity" (D9, 35year-old-male, specialist).

Some of the doctors believed that most patients with CLBP would normally report to them when pain has become unbearable hence prescribing sick-leave for some time-off work would normally be beneficial.

"Because there are some people who have been having CLBP, but they don't come but they come and go like as for today doctor I can't cope, meaning it's severe. Those ones I'd give them two or three days" (D13, 29year-old-male, medical officer).

In addition, the doctors believed that sick-leave was important for participants to stay off work which was considered a potential risk-factor/cause of CLBP (such as manually intensive jobs) for the back structures to rest.

"Normally no I don't give sick-leave unless it's severe and unless the person's work is such that the person cannot work. For example, maybe the person is maybe a labourer. Like those kinds of works. Those are the ones maybe I'd tell them that they need rest. Those who have to carry heavy loads maybe they might have to take a break" (D1, 45year-old-male, senior medical officer).

Another reason adduced for the prescription of sick-leave by some participants, despite awareness of the evidence, was patients' expectation and preference for sick-leave. This depicts the influence of patients' beliefs on HCPs treatment choices. The forty-year-old specialist, for instance indicated that due to patients' expectation of sick-leave he tried to meet the patients half-way in order to facilitate patient satisfaction and a patient-centered approach.

"The teaching is that don't tell them to stop activity entirely so most of our patients who come with CLBP, especially the working group, they tend to ask for excuse duty (sick-leave). The intention is I want to go and rest, but evidence-based medicine says no. Reducing activity is rather going to prolong the time that you recover. Ok so I must admit there tends to be a lot of…Because you're trying to counsel this patient that no you don't really need the bedrest, but this patient has been told from the house, from other colleagues go and rest. I come back to family physicians. We tend to do things in a collaborative way. You don't want to be paternalistic and don't also be consumeristic where you're making the patient dictate to you. So, you collaborate. So ideally you want one week but I think resting for one week is not going to be helpful so you I'd give you some two days" (D8, 40year-old, specialist).

The participants indicated that prescription of sick-leave was based on age, severity of patients' pain and type of work, and therefore indicated that they were more inclined to prescribe sick-leave to patients who were; young, nurses, worked in formal sectors that demanded prolonged sitting, and/or presented with severe pain. The duration of sick leave reportedly prescribed ranged from two days to two weeks.

"Especially for the relatively younger ones who are in formal employment, whose jobs or way of working is the risk-factor for them having the pain. Sometimes when the pain is quite severe and they come in that state its better they take some days off to rest and actually get the pain under control, before they go back to work" (D2, 35year-old-female, medical officer).

The next section discusses the participants' prescription of analgesics.

5.3.2.1.2 *"All they need is analgesics"*: Prolonged Intermittent Prescription of Analgesics

All the participants believed that different forms of pain (nociceptive, nerve, muscular pain) were the fundamental reasons for patients' discomfort. Participants therefore believed analgesics were the predominant focus of CLBP management by doctors. They reported prescription of analgesia and sometimes neuropathic medication or muscle relaxants as the first and prominent line of CLBP management. This is described below by the thirty-five-year-old male specialist.

"The pain medications we have types. There are some that we have for nociceptive pain, that is the normal analgesics, paracetamol, NSAIDs. But when we find that the muscles are involved, if they don't respond to the normal initial pain-relief then we may add the muscle relaxant, but then occasionally when we feel that there is a significant neurological component and they don't respond to usual analgesics, you may add some adjunct treatment, which are specifically for the neurological pain" (D9).

The participants believed that as doctors, medication was the main tool available to them to combat CLBP. This suggests the influence of professional identity on reported practices.

"I'd start with analgesia. I use the imaging and I look at the neuropathic effect of the LBP. That may vary the medication that I give. There are some I just give the NSAIDs. Some I have to add some tyrex to it. If I feel there is some disc degeneration, some bit of compression, I tend to give a little bit of steroids. Those are the variations. Other than that, most of them analgesia. About 60%, 70%. I'd give analgesia" (D6, 40year-old-male, specialist).

The doctors portrayed that this association of medication with their professional identities was similarly shared by patients, depicting a sense of perceived patients' expectation of a passive therapy (medication) for CLBP.

"When the (CLBP) patients come they would remind you, my back hurts, doctor have you written medications for my back?" (D12, 29year-old-female, medical officer).

Consistent with the belief that analgesics were the focal point of doctors' management of CLBP, all the participants reported prolonged intermittent prescription of paracetamol, NSAIDs (e.g., Ibuprofen, diclofenac) and stronger analgesics (opioids, tramadol). This typically involved prescription of pain medications for a duration (mostly cited as two weeks), then patients were asked to report back if symptoms persisted or returned. When patients returned, another bout of painkillers was prescribed for a specific duration and the cycle continued, unless patients were referred for specialist care.

"Most times the tendency is to start the patient on some analgesics, painkillers. Basically, that's what we do. So, I would basically give my patients medications for say two weeks and ask them to come for review in a month. Based on the symptom control, when they come, I assess the pain score. If it's getting better, I might probably continue the medication for some number of weeks" (D8, 40year-old-male, specialist).

A few participants reported prescribing less strong analgesics such as paracetamol to patients in the long term due to its perceived minimal side-effects. The forty-five-year-old senior medical officer recalled his unrelenting resolve for prescription of less strong analgesics, despite patients' expectation of something more than a common over-the-counter analgesic. Consideration of patients' opinions/choices was absent in the narratives of most participants. This appears to depict the influence of professionals' biomedical beliefs, roles and paternalism during therapeutic encounters.

"Most of them it's because of strain or degenerative diseases of the lower back. Most of them all that they need is analgesics. It's paracetamol. Especially for CLBP you don't want to be giving potent drugs with a lot of side-effects and the patient is going to be on it for a long time. Even though the patients may not be happy. Sometimes when you write paracetamol for them, they'd say when I went to see the doctor no medication was prescribed for me. They don't even consider paracetamol as a drug but I tell them a medication that will reduce the pain is what we will give you so if you drink the paracetamol and the pain reduces, that's it and you keep going small small. It's paracetamol if I know that's what you need whatever you do, I won't change it" (D1).

However, a few participants reported preference for starting with strong analgesics because they believed patients would normally have previously experimented with less potent analgesics. These participants also appeared to report prescription of the same strong analgesics in the long term. This is described by the twenty-eight-year-old medical officer below.

"Personally, because most people would have already taken the normal painkillers maybe diclofenac, ibuprofen, I give stronger ones. The ones that are not too common. There's one

we call tyelenol extra or we can give one we call zulu, astrofenac or celebrex. Yes, that's what we do. Just painkillers and this medications for the nerve. But if someone has been on painkillers chronically, then you tell the person you have to find the underlying cause because the painkillers you can't give it for more than 7 or 10years. We don't want you to get ulcer or something" (D3).

All the participants believed that prolonged use of analgesics, in particular, NSAIDs and strong painkillers had side-effects. Therefore, they reported consideration of CLBP cause, severity, and patients' comorbid condition before deciding which medication to prescribe.

"I don't like chronic medication. Well, I think of the risk of side-effect. Everything we have to consider the risk… Those that I know require chronic medication, I even tell them you know for analgesia when you have medications use it for about three days, if you have improvement stop it. When it becomes unbearable, go back on the analgesia" (D10, 29year-old-male, medical officer).

"It mainly depends on the severity of your pain, depending on the category I'd choose appropriately based on other things. Let's say somebody has mild pain and I'm going to give the person ibuprofen and the person has gastritis because of the gastritis you have to change it" (D2, 35year-old-female, medical officer).

Affordability was mentioned as a factor that affected choice of analgesics prescription. A few of the participants mentioned the non-comprehensive coverage of the NHIS and how it affected medication prescription, suggesting system influences in CLBP care.

"The insurance would give you certain drugs. For example, some of the drugs that we know really work are not covered by the insurance and also like muscle relaxants are not covered by the insurance. The usual analgesics are covered. Paracetamol, diclofenac, diazepam for muscle relaxation, some neuropathic pain relievers are covered. It's the branded ones which may not be covered" (D9, 35year-old-male, specialist).

All the participants reported long-term prescription of medications that modulate nerve pain. Commonly prescribed neuropathic pain medication included amitriptyline, pregabalin, gabapentin and methylcobalamin.

"Some of them come with what we call nerve problems. We usually call it radiculopathy. So, it means that the thing is impinging on their nerves, so we have to add something for the nerves so either pregabalin or gabapentin combined with mecobalamin or something. The thing that we call neuropathy. But ultimately, they tend to decrease the symptoms they complain of that's usually paraesthesia, numbness of the feet or pain or something. That's the ultimate benefit" (D3, 28year-old-male, medical officer).

According to some participants, the dependency on analgesics and unmet patient expectations resulted in long-term medical visits and thus, dependency on the healthcare system.

"Personally, I have been working for 10years, I don't think I have had a patient with CLBP who has had good enough relief to not come back to me. It kind of lingers on and on. They keep coming back. Because their expectations it's one of the things that if it's not well managed will make them keep coming and coming" (D2, 35year-old-female, medical officer).

The next section describes some maladaptive CLBP practices reportedly facilitated by the patients with CLBP themselves.

5.3.2.2 Reported Patients' Facilitated Practices

5.3.2.2.1 *"They don't come early":* Late Hospital Presentation

All the participants believed that there was an entrenched culture within the Ghanaian society that facilitated late hospital presentation. They believed that this culture was the use of herbal medications (particularly) and over-the counter analgesics as first-line treatment for LBP/CLBP for considerable periods before reporting to hospitals. Again, the participants' narratives depicted that patients expect that relief from CLBP would be derived from some sort of medication (passive therapy). They believed that this 'culture' of early use of herbs/alternative medicines was facilitated by family and friends.

"They (patients with CLBP) don't come early. They wait till the pain is bad before they come. You know herbal I would say is part of our Ghanaian culture. So, majority of patients that I've seen they always try the creams, these soaps the ones they sell in the cars and those kinds of things. Errm majority herbal. Others it's what they've heard from a friend, when they used this cream it helped them, so they also buy such creams" (D6, 40year-old-male, specialist).

Another reason adduced for this late hospital presentation was some participants' perception that patients do not consider CLBP as serious until it became persistent and severe, while some participants revealed that patients sometimes considered it as a normal part of ageing.

"A lot of them (patients) don't make anything of it really until they start getting funny feelings in their legs. They will wait for long, they will take analgesics because it's over-the-counter so they can always get the pain-relief. If it's not going, then they come." (D12, 29year-old-female, medical officer).

"The older patients tend to think its normal part of ageing, so they come later on in the disease progression" (D2, 35year-old-female, medical officer).

The next section discusses doctors reported involvement of other HCPs in CLBP management.

5.4 Limited Involvement of Other HCPs in CLBP Management

5.4.1 Limited Physiotherapy Referral for Misplaced Reasons

All the participants believed that physiotherapy could be beneficial for CLBP management. However, they all believed that physiotherapy should not be prescribed for all patients with non-specific CLBP.

"I've always thought that physiotherapy has a role to play, but I don't think all CLBP patients should be referred for physiotherapy" (D1, 45year-old, senior medical officer).

Aside patient referral, all the participants indicated they had never liaised with a physiotherapist regarding a patient referred with CLBP or did not give an indication of collaborative working with a physiotherapist for CLBP management. This indicates a potentially fragmented CLBP management. However, the reported interactions with surgeons, as described below by the thirty-five-year-old medical officer, appears to reinforce participants' defined and shared professional identity with surgeons.

"For the neurosurgeons we have a lot of interactions with them because some of our worse cases end up with them. A few referrals to physiotherapy that is it. I don't think I have had discussions with a physiotherapist concerning a CLBP patient" (D2).

All the doctors perceived physiotherapists as 'activity/biomechanical experts'. Therefore, they believed that physiotherapy in CLBP management mainly involved exercises, education on posture and modification of activities. Massage and heat therapy were also associated with physiotherapy. The doctors' beliefs depict a narrow viewpoint on the role of physiotherapy in CLBP.

"I can't show them (patients) how to lift heavy stuff. So, I would let them see the physio. I think at times it's not within my scope. I can show you what I know but I don't think I am the right person to do that" (D13, 29year-old-male, medical officer).

"If I'm concerned about the exercises, I refer to physio" (D12, 29year-old-female, medical officer).

The doctors reported different practices in relation to physiotherapy referral. Several reasons for referral and/or non-referral were mentioned, and these will be discussed in the subsequent sections.

5.4.1.1 *"The major interventions we carry out here…NSAIDs and Physio"*: Physiotherapy Referral as a Substantive Aspect of CLBP Management

Three participants reported that they often referred patients for physiotherapy, if patients' symptoms were not linked to a serious pathology. Thus, they adopted a combination of analgesics and physiotherapy for patients with CLBP. These participants believed that physiotherapy was one of the essential options available to them as family medicine practitioners in the arena of CLBP management.

"For physiotherapy, I would merge my therapy with it, so I don't wait till you get any other symptom before I refer to physiotherapy. It's part of my routine. As long as you come with LBP, if you come with an X-ray, I don't see anything, I start with my medication, and then go and start physiotherapy" (D6, 40year-old-male, specialist).

Five participants reported that they only referred to physiotherapy sometimes. Although all the participants acknowledged patients with CLBP would have previously experimented with over-the-counter analgesics for prolonged periods before hospital presentation, these five participants believed physiotherapy referral should be considered when CLBP persisted following some period of prescribed analgesics use. Some of these participants believed severe and radiating CLBP and patients presenting with deficits in movement and performance of activities would benefit from physiotherapy. Therefore, they normally referred such patients.

"I refer to physio sometimes. Those are the major interventions we carry out here. The NSAIDs and then physio. Usually, it's when it's persistent. When there is radiculopathy. I'd add physio" (D10, 29year-old, medical officer).

"Those with the burning pains, the pains that get worse on movement, those that cannot even stand upright. Some of them cannot even sit for extended period, those people benefit from physio, so I send them to physio" (D2, 35year-old-female, medical officer).

Other influential factors in physiotherapy referral mentioned by some participants were purely musculoskeletal pain, age (younger patients were more likely to be referred, with the belief that a more aggressive management was warranted) and willingness of the patient to try other therapies.

"A lot of the time if the patient is also younger, I am more inclined to send the patient to physio early, because I'm not expecting a younger person to be having LBP. So those people I am more aggressive about their treatment" (D2, 35year-old-female, medical officer).

"But it is either purely musculoskeletal in nature. Either its strain or osteoarthritis. Then I'd refer to the physiotherapist" (D1, 45year-old-male, senior medical officer).

The next section discusses reasons adduced for infrequent physiotherapy referral of patients with CLBP.

5.4.1.2 *"I hardly refer them":* Physiotherapy as a Rare Adjunct in CLBP Management

About half of the doctors (Seven: four from site one and three from site two) reported occasionally referring patients with CLBP for physiotherapy management.

"I hardly refer them (patients with CLBP) for physiotherapy. I hardly do that" (D1).

"With the physiotherapy referrals err I send quite a few only when it's chronic" (D4).

The forty-five-year-old senior medical officer explained that he believed patients with CLBP needed exercises. Nonetheless these exercises could be prescribed by doctors. He believed family medicine practitioners were all-rounders and therefore had some knowledge in every area of medicine, including physiotherapy. He believed physiotherapy referral was unnecessary, an avenue which if, frequently utilized, would impose burden on the healthcare system and patients' resources (time and money).

"One, I think it's a bigger burden on the healthcare system. It's going to increase the workload there (physiotherapy). Secondly, the patients time, erm resources, money. I was also thinking that yes maybe they might even need physiotherapy, but they may not even need to come to see a physiotherapist. So maybe there may be some basic exercises that maybe a general practitioner can teach. Maybe physiotherapists have a leaflet or something, so we (doctors) give them. Because a general practitioner does a little bit of everything. We do a little bit of internal medicine, a little bit of general surgery. I think for example LBP errm they'd benefit from walking, so those ones for example which sometimes I tell them in the consulting room. I don't think I need to come for physiotherapy for you to tell the patient that maybe the person should walk" (D1).

Two doctors (D1, D8) also believed most CLBP patients could be attended to by primary healthcare physicians hence the limited need for referral. These doctors however believed physiotherapy referral is beneficial for severe CLBP or CLBP that was not responding to medications.

"As to the referral pattern, majority let's say about 90% can be managed by the family physician so we tend to do the necessary investigations. Those that we think are manageable, we manage. Those that we do certain investigations, and we think are quite

bad we refer to the neurosurgeons. Most likely a neurosurgeon. Other times we send some to the physiotherapist" (D8).

Also, the thirty-nine-year-old senior medical officer believed physiotherapy may not offer much for patients with non-specific CLBP. However, he acknowledged he had not engaged with the evidence on the role of physiotherapy and CLBP. Nonetheless, this doctor reported that he sometimes signposted patients for chiropractic care due to its perceived effectiveness in CLBP. This doctor's narrative appears to explicate the influence of limited physiotherapy knowledge in relation to CLBP, limited importance attached to physiotherapy and perhaps a limited interdisciplinary approach to CLBP management.

"Basically, with lumbago and sciatica I've been wondering how much physio will do. So, I'm at the crossroads because I've not gone into any empirical evidence. I've not thought of it and I've not gone into researching to actually get any clues as to whether there is empirical evidence of an effect of physio on CLBP. Sometimes I send them to chiropractors whom I'm sure are able to do something" (D4).

Two of the doctors (D1, D7) who reported occasional physiotherapy referral for patients with CLBP, indicated that the prevailing belief was that physiotherapy was more appropriate for patients with stroke. Thus, exposing a limited appreciation of the scope of physiotherapy generally and limited knowledge of CLBP management and physiotherapy specifically.

"And even for the physio it's because most of the time someone has had a stroke or something. But I think the whole idea of physiotherapy with back pain has not really sunk too well. But the thing is the need for a physiotherapist is not something that we've really come to terms with especially when it comes to LBP, that's the honest truth" (D7).

In addition, two medical officers (D3, D7) believed physiotherapy was always considered vaguely by doctors in the management of CLBP. The participants believed that the limited accessibility to physiotherapy and the nature of physiotherapy management that demanded numerous sessions inconvenienced patients. The thirty-one-year-old medical officer believed that the limited priority given to CLBP by doctors, translated into infrequent physiotherapy referrals.

"I know physiotherapy is important. Well, the main thing is that I think we may focus too much on the other conditions and downplay the waist pain. Another thing too is about access. Because some of the patients are from quite a distance and sometimes the physiotherapy, they may have to come in more than once a week and we sometimes think they're old why don't they just rest at home. Most of our patients who complain about back pain are usually above 50 or retired. Another thing too is about trying to see the patients quickly because there are so many patients and they're coming with much more severe

symptoms. Sometimes you think about cost to patients because I know physio is covered by insurance, but I don't know how completely it is covered by the insurance" (D7).

The twenty-eight-year-old medical officer mentioned he sometimes forgot physiotherapy was an option and was normally inclined towards physiotherapy referral upon patients' request. This doctor together with a few others indicated referring to physiotherapy when patients demanded an alternative following prolonged analgesic use. This reported forgetfulness towards physiotherapy suggests the possibility of limited physiotherapy visibility within the hospitals.

"Some people come requesting for physiotherapy. They will tell you that they've been taking analgesics for a long time. They'd prefer something else" (D5).

"Most of the time it (physiotherapy) doesn't really occur to me" (D3).

Two participants (D11 and D7) believed physiotherapy referral would be better after specialist care and therefore reported that physiotherapy referral for patients with CLBP mostly emanated from orthopaedic surgeons or neurosurgeons.

"I would normally refer to the specialist first. Mostly go to the orthopaedic surgeon. It (physiotherapy) is important, but I would also want the orthopaedic surgeon to assess before the physiotherapist comes in" (D11, 35year-old-female, specialist).

The limited involvement of professions outside medicine was not exclusive to physiotherapy as the participants also reported non-involvement of other HCPs. Their views on alternative CLBP management options are described below.

5.4.2 *"I don't believe in chiropractic medicine"*: Non-Involvement of Other HCPs and Alternative Medicine Beliefs

Consistent with a predominant biomedical/biomechanical inclination, only one participant (D1) vaguely recollected referring a patient to a psychologist for counseling regarding living with CLBP. No other referrals or engagement with any other HCPs were mentioned by any of the participants.

"I'm just thinking I don't remember I might have done it sometime long ago but maybe there may be some psychological so psychotherapy to help the patient cope with the pain. I may have referred to psychiatry where they can attend psychological interventions for behavioural changes, perceptional changes" (D1).

All the participants were aware of chiropractors and acupuncturists as emerging alternative medicine options for CLBP management in Ghana. Three doctors (D4, D8, and D11) indicated they had sign-posted patients to chiropractors sometime during their practice. They believed that chiropractic care could be helpful for patients with CLBP. However, they mentioned rarely utilizing this option due to the costs involved.

"There are you know evidence-based alternative medicines like the chiropractors, the acupuncturists. They do well. We have a number of them in Ghana now. But it's usually beyond the pocket of most of the patients that we have. You know most of our patients can't afford chiropracty and all that" (D8).

All the other participants indicated that they had never suggested the services of alternative medicine practitioners for varied reasons. These included costs involved, not being part of conventional/orthodox medicine, perceived ineffectiveness and limited safety for clients. A female medical officer reported she would never suggest chiropractic services due to her personal experience with a patient with CLBP who was paralyzed after manipulations by a chiropractor.

"I do not believe in chiropractic medicine because it is not actually part of orthodox medicine" (D8).

"I haven't had good experience with chiro. I don't know about others. So, a man had back pain and he went to see a chiropractor. He walked to the chiropractor alright by the time he was leaving, he had paralysis. Maybe it was just someone who didn't do their work well it doesn't mean that it's not good, but it makes me wary of them" (D6).

The next section explores positive beliefs reported by the participating doctors.

5.5 Positive Beliefs

5.5.1 "*When you don't walk, it actually worsens it*": Activity and Exercises

All the participants believed that activity was beneficial for CLBP. They demonstrated, in most cases, awareness that performance of activity in CLBP is supported by evidence. Biomedical explanations were given by participants to support the basis for their positive beliefs, suggesting an influence of the participants' biomedical orientation.

"When you don't walk, it actually worsens, for arthritic pains. It improves it so I'd rather want them to do activity rather than not doing activity, and I believe that if you reduce activity for a long time, over time your impairment infarction worsens rather than improves" (D10, 29year-old-male, medical officer).

"I tell them they also don't need to be living always sitting just one place, sedentary errm, thinking that it is painful so… that is what the evidence says" (D1, 45year-old-male, senior medical officer).

They believed that walking and keeping active by performing work and domestic activities, albeit with caution, were particularly beneficial for CLBP. The thirty-six-year-old female specialist describes this below.

"So usually that's the non-pharmacological management so we don't want you to go on bedrest, you should still continue with your normal work activity, yes exercise, avoid lifting heavy objects, still remain active and change your chairs regularly, orthopaedic mattresses, orthopaedic pillows, sit properly, comfortable chairs..." (D15)

Consistent with the importance attached to performance of activities in patients with CLBP, some of the doctors reported that one of the reasons for analgesia prescription was to get the pain to a tolerable level so patients could engage in activities. The participants therefore mentioned prescription of walking and range of motion exercises to patients with CLBP.

That's why I give you the analgesics. I was saying that I wouldn't reduce it, I'd encourage them to do it. Walking, brisk walking" (D10).

The next section discusses other positive beliefs expressed by participants.

5.5.2 "*Excuse duty (sick leave) would not solve the problem*": Management Approaches

A few participants reported other beliefs that evidence has suggested facilitates positive outcomes. Three participants believed imaging was not required for all CLBP patients and therefore resorted to imaging if CLBP persisted, was unresponsive to medications and to inform referral decisions. They further indicated that X-rays should be dependent on patients' presenting conditions such as suspicion of red-flags, radiculopathy, visible disabilities/functional deficits. They however did not indicate that this belief was facilitated by current CLBP evidence or practice protocols.

"Some of them too on examination they would have marked tenderness on palpation along the vertebrae and then it would inform you if I have to do an X-ray, because it's not the fact that because you have LBP you should take an X-ray. I'm not quite a fan of taking X-rays. Maybe after taking medications and the pain is still there or I suspect there is something more to the pain then I request X-ray or MRI" (D2).

About half of the participants believed prescription of sick leave was not a panacea for CLBP and therefore not indicated in CLBP management. This was succinctly expressed by the thirty-six-year-old specialist.

"I won't give an excuse duty (sick-leave) because of this chronicity. Because excuse duty would not solve the problem" (D15)

Three participants believed that managing patients' expectation was important because the patients with CLBP expected a quick fix which was going to be achieved with medications. According to these doctors, failure to manage patients' expectations resulted in multiple hospital visits and the feeling of not having been adequately treated by doctors.

"I advise them on what to expect. Sometimes they expect a miracle. They believe that because they've come to see you, it should go. Because they are taking their painkillers, so within a day or two it should go. So just what to expect and then it puts them at ease. Otherwise they always feel that you haven't managed them" (D12).

Some of the doctors also believed that obesity could worsen CLBP. Therefore, they reported advising patients about the impact of weight reduction on their symptoms. Only one participant however indicated referring an obese patient to a dietician for weight reduction because of CLBP.

"…the fact that the obesity is a risk that is why they are having it (CLBP). Yes, when they lose weight, it would reduce. I have a personal experience" (D13).

The next section highlights the consistent and compelling influence of the healthcare environment expressed by participants throughout their narratives.

5.5.3 *"How we've been mind-tuned from practice"*: The Influence of the Healthcare Environment

The participants' narratives depicted a prominent influence of the healthcare environment on reported beliefs and practices.

"…Well like I said it's mainly because of how we've been mind-tuned from practice, not training" (D7).

Although the participants acknowledged acquiring knowledge on CLBP and referral pathways in training, most participants believed there was an apparent influence of their local working environment on their beliefs and practices. They suggested that most of the beliefs and practices were learnt on the job and some protocols were transferred through departmental socialization and then collectively followed when dealing with CLBP patients. For instance, the twenty-nine-year-old medical officer describes a stepwise system of engaging with patients with CLBP, mostly influenced by the working environment.

"The point I want you to get is that it's stepwise. So, as I said it's stepwise. I'd give analgesia first, expect improvement. If there is no improvement, I'd add physio. We don't have protocols but er though many of the things that we do are unofficially learnt. Though you learn some from training, it's a practice kind of thing you adopt" (D10).

"I guess most doctors learn on the job so it's sort of an apprenticeship so if during your housemanship training you see your bosses doing something you also follow suit" (D15).

This influence of the working environment was acknowledged by the forty-five-year-old senior medical officer, albeit in another vein. He believed a deviation from norms that pertained within his working environment (prescription of sick-leave and stronger analgesia) made him appear to be a 'difficult' doctor.

"But when you are the only one doing something in an environment where everybody is doing something different it's difficult to get it done. Sometimes even the patients go, but every doctor I go to gives me excuse duty (sick-leave). Maybe the person has been coming they've been writing diclofenac. Only you are saying paracetamol. It makes them think you are difficult, or you are wicked" (D1).

In addition, although most doctors indicated the absence of standardized/accepted CLBP treatment guidelines, they acknowledged the presence of some sort of stepwise protocols, common medications prescribed in the facility and referral pathways. This is described below by the twenty-nine-year-old male medical officer.

"Interestingly we don't really have facility guidelines. For me when they come, I start with some analgesics and nerve agents and some muscle relaxants. It depends on how bad it is. Erm I give you about two weeks and I advise them in terms of posture. If the pain goes down a bit, I ask you to exercise as well, which also helps. Usually, that's the protocol, that's the protocol most people use but I've adopted it. Yes, in practice that's what we do" (D13).

Some of the participants bemoaned the non-availability of more expensive and required investigations such as MRI and more potent medications due to low socio-economic circumstances of most of their clients and the inadequate coverage of the NHIS. They believed this hindered optimal care and hence appeared to express beliefs suggesting the influence of health policy on CLBP management as described by the 28year old male medical officer.

"But as I said it's quite worrying. Some people would come, and nothing has been done for them. They've been taking painkillers. I think we just have to move forward. The thing is that we can't move. Ideally, we should be able to do the higher test like MRI, which is not covered by insurance. But most people even CT-scan is a problem, so we end up getting stuck or referring" (D3).

Although a few of the participants acknowledged the essence of patient centred care, there appeared to be diverse elements of paternalistic care within participants' practices, as evident in the doctors' narratives. Some of which have been discussed in sub-section 5.3.2.1.2. The doctors appeared to portray doing what they felt was right for participants, without expression of elements of patients' involvement in decision making. For instance, the two doctors who acknowledged setting patient goals believed goals should be set for patients, so patients are given a direction.

"With the CLBP most at times you tell them this is what you're supposed to achieve maybe in a month. If maybe the initial pain score was like 8/10 you're expecting it to come to like 7 maybe in two weeks, in a month. So that the patient is working towards something because without goals you're working in vacuum so it's very good to set it" (D14).

Typical of a biomedical approach, it appeared that for most doctors what counted were sociodemographic factors (e.g., patients' age or socioeconomic status) and patients' symptoms and not necessarily patients' opinion, buttressing a paternalistic approach.

"The age of the patient, and other comorbidities or other medication they may be on already, the costs of the medications, the patients' socio-economic status, if they can afford, those are the things we consider" (D7).

The next section presents a summary of the participants CLBP beliefs.

5.5 Summary

The participants held predominant biomedical and biomechanical beliefs related to CLBP causes, prognosis and management. Biomedical causes of CLBP were believed to include degeneration, trauma, structural defects, underlying pathology diagnosed through physical assessment and investigations (X-rays and laboratory). Biomechanical causes of CLBP were related to patients' posture and livelihoods. They focused on the possibility of 'cure' or otherwise when dealing with patients with CLBP. These beliefs appeared to be influenced by participants' biomedical or biomechanical orientation and professional roles/identities.

Participants upheld various mal-adaptive beliefs and practices. The participants believed patients' function was dependent on pain and therefore prioritized pain-relief. Some participants believed CLBP was not severe and therefore placed less priority on CLBP. Maladaptive practices commonly utilized in CLBP management by participants were prolonged intermittent prescription of analgesics and prescription of sick leave. The participants believed late hospital presentation was facilitated by patients' prolonged use of herbal medication and over-the-counter analgesics. Participants' mal-adaptive beliefs and practices appeared to be influenced by their professional roles/identity, paternalistic care and a sociocultural expectation of a passive therapy.

Participants' narratives suggested limited involvement of physiotherapy and other HCPs, and numerous non-evidence-based reasons were adduced for the limited involvement of other HCPs. Participants were aware of other alternative medicine options such as acupuncturists and chiropractors for CLBP management. The limited involvement of physiotherapy and other HCPs appeared to be influenced by limited interdisciplinary CLBP management, and limited knowledge and visibility of physiotherapy. All the participants expressed positive beliefs related to activity and exercises. Other management approaches that facilitate positive outcomes (selective imaging prescription, managing patients' expectation, avoidance of sick leave) were also expressed by a few participants. Positive beliefs appeared to be influenced by participants' biomedical orientation. A discussion of the doctors' and physiotherapists' narratives in relation to the extant literature is presented together in Chapter 6.

5.6 Reflection

A greater number of males were involved in this study. This reflects the gender distribution of the general practitioners at both study sites, as indicated by the gatekeepers. However, consent to participate and willingness to make time to partake in the interview ultimately influenced the gender distribution of the participants, as recommended by Quinney, Dwyer and Chapman, (2016). The ethical and gender-related dynamics associated with dominance of male doctors in the current study needs acknowledging. Previous research has suggested that female researchers investigating male dominated arenas may face obstacles related to access, inappropriate advances or labeling which may adversely affect the researcher's emotional stability (Golde, 1986). Although the participation of females in various professional arenas in Ghana is limited, the hospital environment may differ; since doctors are more likely to have encountered female professionals and researchers on different levels. Therefore, the researcher did not experience any form of perceived favouring, or inappropriate advances associated with being a female researcher. Instead, there were moments of encouragement following interviews with acknowledgements that the interview had created opportunities for deeper thoughts around LBP management.

However, there were moments of implicit and explicit demonstrations of the power positions of doctors in relation to the researcher. This, in the researcher's opinion resulted from the power dynamics inherent within interviewing elite groups or groups who are situated in a position of power and influence (Harvey, 2011). Doctors are superiorly placed within the hierarchies of the health professions, putting them in a position of power (Freidson, 1989). Although the researcher had introduced herself as a physiotherapist and CLBP researcher, doctors asserted their jurisdiction over medical terms and appeared suggestive that the physiotherapist/CLBP researcher may not be conversant with basic medical terms associated with CLBP. This was evident in the use of phrases such as *"we call something lumbar spondylosis…" when we say red flags, we mean…"*. The merit of this approach was the reduced tendencies for doctors to provide superficial narratives. Another doctor explicitly portrayed his place of power by asking for a discontinuation of the interview, a few seconds into the interview, since he felt due introductory processes had not been carried out by the researcher. This ensued, even though the doctor had requested and was offered a meeting for introductions and explanations around the research details prior to the scheduled interview. He proposed that the researcher adopt his specified introductory formalities before the interview could be recommenced.

Additionally, the majority of the doctors who consented to participate in the study appeared unable to meet the interviewer at the designated 'neutral' interview venue; with some suggesting outright that they were only comfortable with the researcher meeting them at the consulting rooms for the interviews. After a month, only one consenting participant had reported to the designated interview venue. Therefore, the interviews had to be conducted in the consulting rooms of the doctors. This further deepened the power imbalances. The consulting room could potentially reinforce the perception of control, as doctors were within their territorial jurisdiction which was quite often dominated by paternalistic doctor-patient consultations as revealed by the patients in this study. The challenges associated with access to elite groups for research was similarly shared by Liu (2018). The interviewer thus approached the interview with an awareness of the power dynamics and possibility of interruptions and divided attention from participants. Therefore, a suitable time was agreed with the participants, mostly during off-peak times and the nurses on duty were informed by the doctors to attend to any queries when the interviews were in progress. This ensured minimal interruptions. The researcher ensured that the interview remained within the scope of the investigation by probing into issues that related to the topic. However, it appeared that being in the consulting room aided recall of circumstances that enriched the interviews. For instance, doctors would make reference and say, *"the patient sat in that chair…without resting the back".* Sin (2003) similarly opines that conducting interviews in participants' personal spaces may provide opportunity for incidental insights which enhance interviews.

Recruitment of participants was eased by the gatekeepers who suggested innovative ways to facilitate recruitment (discussed in chapter 3). Since primary access had been granted by the head of departments and physician in charge of research, participants' trust was enhanced. This is recounted in the principal researcher's reflexive diary as one doctor expressed his skepticism about participating in research that was being overseen by a foreign institution. This highlights how participants situated the researcher: an outsider. He however quickly added that once the physician in charge of research had participated, he was assured that the process could be trusted. As the interviews proceeded and the researcher probed doctors' responses and facilitated discussions around medical discourses, a sense of enhanced trust of the researcher was eminent. This was evident as further into the interviews, doctors asked for affirmations or otherwise of their responses and terminologies.

It appeared that doctors' knowledge of the researcher's physiotherapy background enhanced in-depth discussion on issues related to physiotherapy referral. In these discussions, some doctors perceived the researcher as an outsider with insider knowledge of physiotherapy, CLBP and procedures such as referral. However, the researcher ensured prompting to include discussions around any other HCPs that participants reportedly involved in CLBP. Since participants mainly referred to physiotherapists and surgeons, the depth of information related to physiotherapy may not have been influenced by researcher's background.

Chapter 6: Bio-mechanical/medical Perspectives, Sociocultural Perspectives and the Role of Doctors: Physiotherapists' Beliefs Regarding CLBP and its Management

6.0 Introduction

Globally, physiotherapists are renowned for their role in the management of CLBP (Alshrehri et al., 2020). The doctors' narratives in the current study suggest that, in Ghana, aside surgeons, physiotherapists are the main HCPs to whom doctors refer patients with CLBP. HCPs, including physiotherapists, are potential influencers of the beliefs of patients with CLBP. Physiotherapists may also suggest coping and management strategies that form an aspect of life-long coping for patients with CLBP (Gardener et al., 2017).

This chapter discusses physiotherapists' beliefs around CLBP causes, prognosis, coping and management strategies as well as beliefs concerning physiotherapy as a management option for CLBP in Ghana. This chapter also highlights the mechanisms that underpin participants' beliefs, that is, the healthcare environment (paternalistic care, fragmented management, hierarchical influences, professional identity/roles, bio-medical/mechanical orientation) and the sociocultural environment (sociocultural expectation of paternalistic care and passive therapy). Furthermore, this chapter highlights how physiotherapists, who are perceived as 'activity experts' by doctors (Chapter 5), facilitate activity avoidance and hypervigilance.

The chapter begins with a description of participants' demographic characteristics and is presented with four main headings. Each heading describes a category, its concepts, and the mechanisms at play within the specific category. A summary of the four (4) categories, ten (10) concepts and nine (9) mechanisms derived is provided in Figure 16. A personal reflection and summary are also provided. This chapter ends with a discussion of HCPs' (doctors and physiotherapists) CLBP beliefs in relation to the extant literature. The following section describes physiotherapists' demographic characteristics.

6.1 Demographic Characteristics of Participants

Eighteen physiotherapists: nine from each study site were involved in this study (Figure 15). Ten participants were males and eight were females. The age of the participants ranged from 28 to 53years. The mean (±SD) age of participants was 32.4±6.0. Five (5) of the participants were physiotherapists, eight (8) were senior physiotherapists, four (4) were principal physiotherapists and one (1) was a deputy chief physiotherapist[11]. The years of working experience of the participants ranged from 2 to 15years, with mean (±SD) of 7.6±3.2.

Physiotherapist Acronym	Age	Gender	Rank	Years of Working Experience
PT1	31	Male	Senior Physiotherapist	8years
PT2	28	Male	Physiotherapist	5years
PT3	36	Male	Principal Physiotherapist	12years
PT4	37	Male	Principal Physiotherapist	11years
PT5	53	Male	Deputy Chief Physiotherapist	15years
PT6	27	Female	Physiotherapist	4years
PT7	26	Female	Physiotherapist	2years
PT8	31	Female	Senior Physiotherapist	8years
PT9	33	Female	Principal Physiotherapist	10years
PT10	39	Male	Principal Physiotherapist	12years
PT11	29	Male	Physiotherapist	5years
PT12	31	Male	Senior Physiotherapist	6years
PT13	32	Female	Senior Physiotherapist	7years
PT14	30	Female	Senior Physiotherapist	6years
PT15	28	Female	Physiotherapist	4years
PT16	28	Male	Senior Physiotherapist	8years
PT17	32	Male	Senior Physiotherapist	7years
PT18	33	Female	Senior Physiotherapist	8years

Figure 15: Demographic Characteristics of Physiotherapists

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[11] Physiotherapists in Ghana are classed/ranked under five main categories. They are: Physiotherapist, Senior Physiotherapist, Principal Physiotherapist, Deputy-Chief Physiotherapist and Chief Physiotherapist. These ranks are determined by years of working experience and sometimes post-graduate studies.

Categories	The Predominance of Bio-medical/mechanical Beliefs	Maladaptive Beliefs and Practices	Limited Involvement of other HCPs	Positive Beliefs
Concepts	Biomedical Causal Beliefs ➢ Degeneration and Trauma ➢ Diagnosis of CLBP Cause is a Prerequisite for Treatment ➢ Specialists Referrals	Mal-adaptive Beliefs ➢ The Significance of Pain ➢ Fear-Avoidance Beliefs	Limited Physiotherapy Referral for Misplaced Reasons	Activity and Exercises
	Beliefs about Prognosis	Maladaptive Practices Physiotherapists Facilitated Practices ➢ Dependency on HCPs ➢ Prolonged Strategies and Therapies Patients Facilitated Practices ➢ Late Hospital Visits	Non-Involvement of other HCPs and Alternative Medicine Beliefs	Management Approaches
	Biomechanical Beliefs/Risk-factors of CLBP ➢ Beliefs around Posture ➢ Domestic/Work-related CLBP			Other Positive Beliefs
Mechanisms	Professional Identity ➢ Physiotherapists’ Bio-medical/ mechanical Orientation	Professional Identity ➢ Paternalistic Healthcare ➢ Physiotherapists’ Bio-medical/ mechanical Orientation	Fragmented CLBP Management Physiotherapy Visibility	Physiotherapists’ Biomedical Orientation
		Sociocultural Expectation of Passive Therapy and Paternalism		

Figure 16: Categories, Concepts and Mechanisms

6.2 The Predominance of Biomedical and Biomechanical Beliefs

All the participants upheld varied biomedical and biomechanical beliefs. They believed that CLBP could always be linked to a biomedical or biomechanical cause as depicted below by a thirty-year-old female senior physiotherapist.

"LBP: maybe if the person has degenerative conditions of the spine, yes. So, either the posture or degenerative conditions. These are mostly the causes" (PT14).

None of the participants gave an indication about the possibility of CLBP resulting from a non-recognizable cause (non-specific CLBP).

"…we still need to go to investigate what the actual cause is" (PT3, 36year-old-male, principal physiotherapist).

All the participants, except one (PT1), did not report consideration of psychological factors in the assessment and management of CLBP. Only a thirty-one-year-old male physiotherapist believed that CLBP should be assessed and managed from a biopsychosocial perspective (considering specific biomedical/biomechanical cause of CLBP and the mindset of patients) hence he indicated having referred a few participants to a psychologist. He suggested that he gained this knowledge from personal professional development endeavors such as reading articles rather than formal education.

"I think for me personally I'd want to know the cause because the cause would define the kind of treatment that you want to give the person. There are some of them (patients) that erm I have referred to the psychology department because I realized their pain was sort of psychogenic. What the patient has been doing sometimes even in their conversation you realize that it's bothering them so they're avoiding certain things or chores at home which you know it has no relation with the back pain ok. So, it's a holistic thing. So, the biopsychosocial approach that's what is out there now in the research" (PT1, 31year-old-male, senior physiotherapist).

Another participant (PT17) appeared to link psychological perspectives to CLBP, but from a different perspective. This thirty-two-year-old male physiotherapist believed that when participants attributed CLBP to spiritual causes, their condition became largely driven by their mindset. He believed that these patients may benefit from counseling from psychologists or priests but had never referred a patient for such services since it was not a norm within his practice setting.

"Because some people it starts affecting their thoughts. They attach superstitions to their current predicament so sometimes when you get them a psychologist or priest it may help. I've never referred to a psychologist though because we normally do not do that here" (PT17, 32year-old, senior physiotherapist).

The participants’ narratives portray a predominant biomedical/biomechanical orientation, with only two participants reporting suggestions of psychological considerations. The subsequent sections will discuss specific biomedical and biomechanical causal beliefs of participants.

6.2.1 Biomedical Causal Beliefs

Most participants believed CLBP was attributable to a cause; mostly structural and mechanical. The participants also believed CLBP could arise from specific serious pathology (e.g., malignancy), albeit these causes were acknowledged as rare.

“CLBP we have to rule out red flags. Sometimes malignancy and TB of the spine can cause it. Although it does not happen often, it is rare, but it can be a cause” (PT12, 31year-old-male, senior physiotherapist)

The common causes of CLBP described by the participants are discussed below.

6.2.1.1 *“Degenerative changes… causes back pain”*: Degeneration and Trauma

All the participants believed that CLBP could result from trauma associated with falls or road traffic accidents. They believed that these traumatic incidents could have occurred years before the inception of CLBP, indicating the belief that previous incidents could lead to CLBP in later life.

“Sometimes, they’ve had traumatic maybe road accident before but because they didn’t really see any physical injuries, they thought they were ok and then as time goes on they just get these LBP” (PT6, 27year-old-female, physiotherapist).

Another popular belief among the participants was that spinal degeneration caused CLBP. According to the participants, degeneration resulted from ageing and ‘wear and tear’ (caused by misalignment and overuse of the back structures).

“…degenerative changes, that’s for a particular age group, the aged. You know when you get some degenerative changes in the spine it causes back pain” (PT16, 28year-old-male, senior physiotherapist).

The next section discusses participants’ beliefs suggesting identification of causes of CLBP as a requirement for CLBP treatment.

6.2.1.2 *"…When we are able to diagnose the problem, then we think of the modalities"*: Diagnosis of CLBP Cause is a Prerequisite for Treatment

All the participants believed that ascertaining the specific cause of patients' CLBP was necessary for optimal treatment and/or initiation of treatment. A thirty-seven-year-old male principal physiotherapist for instance, expressed his belief that identification of faulty structures was essential to facilitate re-alignment; thus, depicting a biomedical orientation.

"You do both subjective and objective assessment, and you see which part of the structures of the back is really injured or altered, in terms of alignment, in terms of their anatomical presentation and see how you can re-align it" (PT4).

Therefore, some of the participants expressed their dissatisfaction with referrals from doctors; sighting that these referrals contained superficial and generalized diagnosis, mostly LBP or lumbar spondylosis. Two participants (PT3, PT4) believed that this practice of generalized diagnosis was due to doctors' limited interest in CLBP, since CLBP could not be diagnosed by laboratory investigations but required physical assessments.

"You see they (doctors) don't do comprehensive assessment to decipher or give inferential or actual diagnosis. All that they write is LBP. They won't even categorize it into that three main fold: either acute or sub-acute or chronic LBP. There is no comprehensive diagnosis so sometimes you don't even know which structures are being affected. So, what I see is that they themselves (doctors) are not into it. They're (doctors) concentrating more on something that they would say to patients go for lab tests..." (PT4, 37year-old, principal physiotherapist).

The participants indicated that they performed physical assessments (e.g. range of motion, gait assessments and special tests), which were necessary to adequately diagnose CLBP causes. The participants appeared to identify with physical assessments as a key feature that distinguishes them as physiotherapists.

"When the patient comes, we (physiotherapists) have to assess the patient initially. As physiotherapists, we do range of motion exercises and special assessments for instance to make sure, to diagnose properly. So, when we diagnose the problem, then we think of the modalities" (PT5, 53year-old-male, deputy-chief physiotherapist).

In accordance with the premium placed on establishing causation of CLBP, most participants believed X-rays and other imaging (CT-Scan and MRI) were a necessary aspect of CLBP management. They believed that X-rays were important to aid identification of CLBP cause, guide treatment and formulate a treatment plan.

"Most of the time, the investigation, X-ray or MRI, always dictates or predicts the diagnosis. It also guides our treatment, our treatment plan" (P17, 32year old male, senior physiotherapist).

They reported that almost all patients with CLBP who had been referred by a doctor reported to physiotherapy with an X-ray and/or CT-Scan/MRI.

"80%: as long as they are coming through a doctor, they already have at least an X-ray. For mostly the self-referral, they just come. We advise them, we tell them what might be wrong, they should take an X-ray for further investigations" (PT11, 29year-old-male, physiotherapist).

Some of the participants indicated that most patients with CLBP were referred from neurosurgery/orthopaedic surgery, therefore most of these patients would have already received an MRI, prescribed by the surgeons.

"We get referrals from neuro clinic, we get orthopaedics, we get primary healthcare. The one that is more, I think mostly it's from the orthopaedic and neuro. I'd say 50-50 for orthopaedics and neuro clinic" (PT10, 39year-old-male, principal physiotherapist).

"Usually, those coming from the doctors, they come with their X-rays. X-rays or MRI depending. When they are coming from the neuro clinic, they come with MRI" (PT14, 30year-old, senior physiotherapist).

Most of the participants reported prescription of X-rays for participants who reported to physiotherapy without any imaging reports.

"If they come without an X-ray, I request for one. It helps to arrive at a specific diagnosis" (PT1, 31year-old-male, senior physiotherapist).

From the participants' narratives, it seemed that assessments and imaging were carried out in the belief that they could identify compromised back structures. These faulty structures were positioned as causal mechanisms of pain in the discussion with patients: and therefore ascribed.

"My goal one is to educate them on the condition. So first and foremost, I give them education on whatever is going on from the X-rays and maybe the work they do. So, I make them understand the condition" (PT13, 32year-old, senior physiotherapist).

The next section discusses participants' biomedically inclined referrals.

6.2.2 *"When we suspect red-flags we refer…some are also obese, so we refer"*: Referrals

In line with biomedical thinking, almost all the referrals reportedly carried out by the participants were focused on addressing a biomedical cause or risk-factor. Therefore, all the participants believed that CLBP which was persistent or had increased in severity should be referred to the doctor's or surgeon's unit. They also believed that when red flags (signs signifying possibility of ongoing serious pathology) were suspected, referral to doctors for further investigations were warranted. The physiotherapists did not indicate any other interactions with other HCPs concerning a patient with CLBP that went beyond a referral, suggesting a lack of collaborative working with other HCPs. Some physiotherapists suggested that inadequacies in the health system stifled collaborative working. They suggested that it was difficult for patients to receive follow-up appointments from the same doctors and hence difficult to interact with a specific doctor concerning a patient with CLBP.

"When we (physiotherapists) suspect any red-flags then you have to refer back wherever and you might not even get access to who you referred to, so you just refer to family medicine. If you see any other doctor and tell them that we've referred, it creates a lot of problems because they didn't refer the patient initially, so the system is not good for follow-up and tracing" (PT4, 37year-old male, principal physiotherapist).

"If the situation has not improved after six weeks to three months, you (physiotherapist) send them back to the doctor. Our (Physiotherapists) communication is just by referring to the doctor" (PT16, 28year-old-male, senior physiotherapist).

Furthermore, some of the participants reported referring to a dietician when obesity was suspected as an aggravating factor or cause of CLBP.

"Some of them come with overweight or being obese so usually I refer them to the dietician to advise them on how to reduce their weight" (PT3, 36year old male, principal physiotherapist).

The next section discusses participants' beliefs around the prognosis of CLBP.

6.2.3 *"Every day they (patients) still have pain"*: Beliefs about Prognosis

All the participants believed that the defect in back structures would be permanent and therefore CLBP could only be managed and not cured, since the causative agent would always be present. They therefore reported that this formed a necessary aspect of patient education during patient encounters.

"You see it's chronic and the first action or the first measure is to manage. You are not to remove the pain. So, we educate them (patients)" (PT4, 37year-old, principal physiotherapist)

A few participants however indicated that the inability to cure CLBP and get CLBP symptoms to an acceptable level for patients made CLBP management frustrating and challenging.

"Back pain is very difficult, I mean the chronic ones, and they're very difficult to treat. It's very difficult to get a 100% recovery. The pain level and everything may reduce but to get a 0 VAS (zero visual analogue scale score), I'm yet to come across one. Every day they (patients) still have the pain. Even after the six months they still have the pain. The remarks I want to get from my

patients that now it's gone, I hardly get that. I mean it's very frustrating when I get CLBP patients" (PT13, 32year-old-female, senior physiotherapist).

Some other participants believed that due to the mechanical nature of CLBP (link between activity performance and CLBP), CLBP would be a life-long pre-occupation with patients experiencing periods of pain and relief, as activities may cause exacerbations from time to time. However, some others believed that adhering to necessary biomechanical precautions (to be discussed in section 6.3.1.2) may result in long-term pain-relief and improved function.

"You realize that for the back pain, it's more of a mechanical pain so their (patients') activity will worsen it. So, for most of them the pain goes down and they tell you they're ok and it comes back…So I educate them on the condition and the prognosis" (PT11, 29year-old-male, physiotherapist).

"We caution them about mostly posture, that also causes the pain because you will be treating the patient but still the pain will remain there so you have to caution the patient how to sit in the office, how to lie on the bed, so the pain would not keep coming on and off" (PT7, 26year-old-female, physiotherapist).

The following section discusses participants' biomechanical beliefs.

6.2.4 *"It's a mechanical pain"*: Biomechanical Causes/Risk-Factors of CLBP

Almost all the participants described CLBP as a mechanical pain or pain linked to ergonomics.

"It's a chronic pain, it's a mechanical pain" (PT11, 29year-old-male, physiotherapist).

All the participants believed that a biomechanical focus was the most important aspect of physiotherapy education in CLBP management. The participants believed that biomechanical education was necessary for prevention of LBP, recurrence and chronicity.

"And then ergonomics. Ergonomics too is very important that one to help them to prevent back pains. So, the advice is normally around ergonomics" (PT14, 53year-old-male, deputy chief physiotherapist).

"If you are very mindful of it (posture), you sleep well, you sit well, you support it well, a lot of the pain should go. In fact, some of the patients, the first day I don't do anything with them, just postural education. Yes, like basically, number one priority is the posture. I mean they (patients) come here and if they (patients) go home to do those awkward postures and stuff, we are going nowhere" (PT12, 31year-old-male, senior physiotherapist).

Most participants acknowledged that patients with CLBP frequently reported they were unaware of the influence of biomechanical factors on CLBP. Therefore, all the participants reported prioritizing education on biomechanical causes of CLBP, with some indicating the need for a transformed mindset that acknowledges the role of biomechanical influences on CLBP.

"I say bad posture because sometimes when they (patients) come and you're giving them education, they tend to ask really, this is what I've been doing all these years. I didn't know this posture was wrong. Oh, then I'm sure this is what has caused my problem. So, with that reaction, you get to know they don't have the information. So, they do the awkward postures and all that repetitively and it compounds over the period, I mean over years and then you get to that stage where they come to the hospital to come and see" (PT13, 32year-old-female, senior physiotherapist).

"So, I think we need to go more into the communities to educate the public. There are some of the things we've been doing for centuries in our homes… bending and sweeping, sitting on those stools for a lot of cooking and all of those things, which could actually be risk-factors for back pain which probably we have to have like an education on the mindset and it can actually reduce the burden" (PT10, 39year-old-male, principal physiotherapist).

A thirty-year-old female physiotherapist (PT14) further indicated that this transformed mindset needed to reach policy makers so that biomechanical factors would be adequately considered in occupational settings.

"…But it would come from our leaders so when they are making policies, they have to consult the physiotherapists. The work environment should be suitable for the workers" (PT14).

The following section discusses participants' beliefs around posture.

6.2.4.1 "Bad postures during activities": Beliefs around Posture

All the participants believed that adopting 'wrong' sitting and sleeping postures caused, worsened or maintained CLBP states. These were sometimes referred to as poor back ethics, bad/wrong/unnatural/abnormal postures by the participants.

"Adopting unnatural or abnormal posture for long, sometimes the person might be sitting in an improper way for a long time, the person at that time doesn't know that posture is incorrect so after long months or long days of doing that he gets that pain" (PT3, 36year-old-male, principal physiotherapist).

According to the participants, 'good' postures were postures that enhanced maintenance of straight backs or upright positions; while 'bad' postures were considered as those that compromised straight backs and thus placed undue stress on back structures. These included, bending, sitting laterally/in a tilted fashion, sitting in a slouched position or without a back rest, or lying prone.

"Bad postures. In the sense that they (patients) don't sit well, they lift, I am going to use the word awkward again. They lift awkwardly, they lie awkwardly. You have some not sitting upright. They bend laterally. They sit and they are tilted to one side, you get people lifting with sudden, a sharp bend of the trunk to pick heavy load from the floor. They don't squat to pick things from the floor. You get people lying prone most of the time. Yes, some people feel comfortable when they lie prone, but we all know that lying prone is not a best posture for the spine. So that's what I mean by awkward postures" (PT13, 32year-old, senior physiotherapist).

Generally, the participants believed that the 'wrong' postures adopted when performing ADLs, work or leisure activities were responsible for CLBP.

"A great majority of the patients that I see it is due to posture. Most of them you can trace it down to poor posture usually at work, when performing house-chores for instance the broom we use to sweep, the way we lift and all that" (PT12, 31year-old-male, senior physiotherapist).

All the participants also believed that furniture, specifically chairs and mattresses could induce postures that compromise an upright back and therefore precipitate CLBP.

"Inappropriate beds, chairs that we sit on at home and at work. The stools that we sit on at home and then the postures that we use" (PT1, 31year-old-male, senior physiotherapist).

All the participants believed that prolonged sitting, standing and bending were unhelpful and facilitated the occurrence and progression of LBP.

"Prolonged sitting, prolonged standing and it boils down to poor posture. Most of the time we have some secretaries around so the prolonged sitting. These are some of the causes of LBP" (PT11, 29year-old-male, physiotherapist).

The next section discusses participants beliefs around activity induced CLBP.

6.2.4.2 "It (CLBP) is work-related": Domestic or Work-related CLBP

All the participants believed that the type of work (paid and domestic) and working environment were potential risk-factors or possible causes of CLBP.

"It (CLBP) is work-related. So, most of them are ergonomic and few you could see that it's prolonged sitting in cars. Bad roads you know, But the work the person does plays a big role. Mostly its ergonomics. About 90% it's ergonomics" (PT13, 37year-old, principal physiotherapist).

Therefore, they believed that persons involved in manually intensive jobs such as labourers, farmers and factory hands were susceptible to CLBP. The participants believed that these jobs demanded prolonged repetitive movement, standing, bending and lifting of heavy loads and thus placed undue strain on the back.

"Most is work-related. We've had some secretaries, some field workers, they're either engineers or. We have some nurses around, so we talk about the sitting, how they lift, how they help their patients in and out of bed, others will be field workers, they work at a factory, factory hand, helping pack goods, carry them and the rest" (PT11, 29year-old-male, physiotherapist).

Furthermore, all the participants believed that sedentary jobs (jobs that encouraged prolonged sitting/standing) could cause CLBP.

"We see a lot of bankers. Now it's mostly common among those whose work involves a lot of sitting or standing so teachers, bankers, we see a lot of drivers, seamstresses, market women. They sit for so long and put pressure on the spine" (PT17, 32year-old-male, senior physiotherapist).

In addition, all the participants believed that inappropriate ergonomic considerations in the work environment could precipitate CLBP. They believed that work surfaces, equipment and furniture that did not fit an individual's specific characteristics and as such placed a demand on the individual to twist or bend or assume prolonged postures could cause CLBP.

"A typical example is our colleagues in the offices, the banks, their chairs may not be appropriate for them, that is where we get the problem coming from so until the work environment is changed to favour us, to suit our postures, we would still have a problem. Our nurses on the ward everything is just too manual for them. The height of the bed that they use for the patient. In fact, the work itself" (PT14, 30year-old-female, senior physiotherapist).

The narrations above suggest that physiotherapists situated themselves as 'biomechanical experts' and this perception played a significant role in their CLBP beliefs and practices. The next section discusses participants' mal-adaptive beliefs and practices pertaining to CLBP and its management.

6.3 Mal-adaptive Beliefs and Practices

This was one of the dominant findings presented by the participants. All the participants reported some beliefs or practices discouraged by current evidence-based guidelines on CLBP management. These reported beliefs and practices will be discussed in detail in subsequent sections.

6.3.1 Maladaptive Beliefs

6.3.1.1 *"They (patients) get better functionally because now the pain is gone"*: Significance of Pain

All the participants believed that pain, function and quality of life were paramount indicators in CLBP management.

"When I'm planning the treatment, the first thing I look at is the severity of the pain and then how it affects their function and their basic activities of daily living and then we tailor our treatment towards it. Relieve the pain and then we improve their activities of daily living and then in a nutshell we are looking at improving their quality of life" (PT6, 27year-old, physiotherapist).

However, the participants believed that all the other goals were dependent on improvement in pain. Therefore, they suggested that pain-relief was the initial management strategy utilized by physiotherapists, with some indicating pain-relief was initiated after patient education on CLBP, biomedical and biomechanical causes.

"If their pain is probably 7/10. I'm looking at getting it down to probably 5 or 4 so that they can work and also to be able to do their activities of daily living with minimal difficulty or no difficulty at all" (PT11, 29year-old-male, physiotherapist).

"The management goals just to relieve pain, most of the time we go with pain-relief, after patient education on the condition, causes and prognosis" (PT7, 26year-old-female, physiotherapist).

All the participants believed that pain was a limiting factor and once the pain was eliminated all the other goals such as function and quality of life could be easily achieved. This is described below by the thirty-nine-year-old male principal physiotherapist.

"Relieve pain, improve function, those are the two major ones. So, we relieve the pain using the modalities then improve function. They (patients) get better functionally because now the pain is gone, because pain was a big limiting contributor" (PT10, 39year-old-male, principal physiotherapist).

Most of the participants believed that pain was the primary reason for which patients sought physiotherapy services.

"Most patients, their most important concern is just pain. The pain should go. They are really not interested in what is going on, what is happening, their problem is the pain should go, the pain, the pain" (PT11, 29year-old-male, physiotherapist).

The participants' narratives appeared to consistently suggest that this significance of pain and concentration on pain was not discussed with patients. For example, the use of phrases such as 'my goal; I'm looking at'

*"**My** first **goal** (emphasis placed by author) especially chronic pain is to bring the pain to the minimal level, at a manageable level to the patient" (PT4, 37year-old-male, principal physiotherapist).*

Furthermore, it appeared from participants' narratives that physiotherapists often presented treatment goals as goals adopted 'for' patients based mainly on physiotherapists' biomedical/biomechanical knowledge and understandings of patients' limitations. This depicts elements of paternalistic care and the influence of their formulated professional identity.

"I'm looking at *reducing the pain level within some specific time, and then* ***I'm also looking at*** *if the pain caused reduced motion,* ***I'm looking at*** *improving the motion... So,* ***I'm also looking at*** *improving their quality of life. Getting them back to their work and then to also prevent recurrence of the pain" (PT6, 27year-old-female, physiotherapist).*

The next section discusses participants' fear-avoidance beliefs.

6.3.1.2 *"So anything …that triggers the pain, they should stop"*: Fear Avoidance Beliefs

Since all the participants believed that biomechanical factors were risk-factors/causes of CLBP, they reported a CLBP management approach that focused on eliminating these modifiable risk-factors. Therefore, this became the basis for physiotherapists' FABs.

"What is accounting for the chronicity is probably because of a pattern, a trigger: once the trigger is there, the stimulus is there it (pain) will go high. So, you try to manage by dealing with the stimulus. It can be the posture; it can be activity-related. If you can remove it, remove it. If you cannot remove it get better way for the patient to go about it so that you can manage. If there is no other way and the thing has become chronic and it's worrying the patient, can we change the job?" (PT13, 37year-old-male, principal physiotherapist)

All the participants appeared to be convinced that a restricted or modified way of carrying out daily tasks and exercises was necessary to ensure sustained pain reduction, and physiotherapy gains. Therefore, participants' narratives indicated that FABs were expected to form an aspect of life-long coping for patients with CLBP.

"The postural education, the dos and don'ts, the exercises; those are the things that they'd (patients) leave here with really. But all the other things we are just doing something for the mean time" (PT12, 31year-old-male, senior physiotherapist).

Another belief expressed by most participants was the belief that patients' activities and exercises that induced/worsened pain were warning signs and needed to be stopped at once and avoided where possible in the future. According to these participants, patients were tasked to watch out and identify 'unhelpful' activities; thereby facilitating hypervigilance.

"Anything that they (patients) do that triggers the pain, they should stop. I always tell them (patients) it's a red flag, that something is wrong. If you are doing specific things in the house and it's making your pain worse, you don't continue to do it. They either break the activity. We tell them (patients) they would have to monitor the pain and their activities and any activity they're doing if it is worsening the pain, they should stop" (PT11, 29year-old-male, physiotherapist).

Some of the participants suggested that the patients recalled activities that aggravated or induced their pain when prompted by physiotherapists. This served as a basis for physiotherapists' plan for advice on activity avoidance, reduction or modification of the activity.

"For the don'ts we (physiotherapists) get it from the patients. We get it from what they have been doing. Some of them will tell me that even when they carry normal bucket, then I advise that they should take half, go and pour it bit by bit" (PT17, 32year-old-male, senior physiotherapist).

Participants' FABs aligned with advice on avoidance, reduction or modification and these will be discussed in the following sections.

6.3.1.2.1 *"All back patients are not supposed to lift heavy objects"*: Total Avoidance of Activities

Most participants believed that where possible patients should avoid the activities that they perceived as causing or maintaining LBP e.g., bending and lifting, especially when it was not a key part of work or domestic tasks.

"We tell them that all back patients are not supposed to lift heavy objects. For me, for all my patients I tell them to stop lifting heavy things…because it's not good for their condition (PT17, 32year-old-male, senior physiotherapist)

"If there are some activities that the person can do away with, activities not directly related to their job, for instance carrying loads on their head, if you can I'd advise you to stop" (PT18, 33year-old-female, senior physiotherapist).

A few others indicated that if a hobby induced pain or involved the adoption of 'wrong' postures or performance of 'unhelpful' activities, they would advise patients to stop that hobby. This depicts participants' belief that hurt equals harm.

"As for hobby we can deal with it, you should stop. There is a choice you are torn between the devil and the red sea, so where do you go? You know so you try to rob Peter to pay Paul" (PT13, 37year-old-male, principal physiotherapist).

The majority of the participants having expressed the belief regarding work induced LBP, suggested that they sometimes advised patients about totally changing their current roles at work, to switch on to lighter tasks that did not demand prolonged standing, lifting, bending and other perceived 'unhelpful' activities. They reported that this advice was sometimes strengthened with official letters from physiotherapists to patients' supervisors or working institutions.

"For instance, when the person is working in a factory where he does a lot of things or manipulates a lot of machines which might affect the back pain. We tell them just hold on or sometimes we

even write an official letter to his employers that this person needs to be given a low duty job rather than a high duty job" (PT12, 31year-old-male, senior physiotherapist).

A few participants believed prolonged walking induced pain and therefore should be avoided by patients with CLBP.

"But sometimes mobility also can cause pain so in that case you have to advise rest for some few hours. For instance, from K to B the people (patients) may prefer to walk. They won't even pick a taxi so we advise the patient to take a taxi or even if he will walk, when he walks for some time, he has to sit, rest and continue" (PT5, 53year-old, deputy-chief physiotherapist).

The next section discusses participants' FABs in relation to advice to suspend activities.

6.3.1.2.2 Suspension of Activities

Most participants reported that they normally advised patients to temporarily suspend their work, sporting and domestic activities to allow for 'healing' to occur and rest of stressed back structures. They believed that this was particularly important when the patient's work was identified as the harmful stimulus or an aggravating factor. They had reportedly proffered this advice to nurses, seamstresses, office-workers and factory hands in the past.

"Sometimes it may be a particular activity that you're doing at work that is causing the back pain. So, you might need to take a break from that activity for a while to be able to recover. For example, if your work involves you lifting every day, probably that could be the risk-factor. Probably that is what is causing the back pain, so you probably need to take some days off" (PT10, 39year-old-male, principal physiotherapist).

Some of the participants reported extending this advice to exercise performance (fitness and prescribed exercises). According to the participants this advice was necessitated by the belief that CLBP is mechanical and therefore inevitably linked to activity performance. They indicated that participants may be performing strenuous exercises, and prescribed exercises could also induce pain in already stressed tissues that have not been given time to properly heal.

"When they (patients) come and the pain is 5 and above, we don't give any exercises. We write it but we don't start. The reason being most of the exercise may worsen the pain" (PT11, 29year-old-male, physiotherapist).

"Sometimes a patient will come and be like I do this kind of exercises on daily basis. Sometimes when you look at the patient's condition and the kind of exercises he's talking about, you can really relate it to the fact that the exercises he does actually aggravates the pain. So sometimes you'd sit the person down and tell the person … this kind of exercise will aggravate your pain so … hold on with it" (PT12, 31year-old-male, senior physiotherapist).

The next section discusses participants' prescribed FABs that are related to activity modification.

6.3.1.2.3 *"We recommend modification"*: Activity Modification

Activity modification appeared to be the most popular and utilized option for reducing strain on the back and preventing overload of the back structures, according to participants' narratives.

"We commonly recommend to the patients to reduce the workload as much as possible and then try and sometimes make corrections in the person's lifestyle" (P8, 31year-old-female, senior physiotherapist)

All the participants believed that there was a 'right' posture and better way of performing every 'wrong' activity to decrease the stress and harmful effects on back structures.

"The best way to keep the back is to always keep it straight so, 90° bending over to pick something, you know our setting when you are washing you bend over like that for hours, all those things affect the back. When one is cooking it's the same thing, sweeping, so all those things patients are made aware and cautioned to try and adapt appropriate means of carrying out such activities" (PT18, 33year-old, senior physiotherapist).

Therefore, they suggested various ways that participants could modify domestic, work and leisure activities. These were normally premised on pacing activities (reducing heavy loads and taking intermittent breaks), taking on minor duties, adopting 'right' postures when performing activities (for instance using a long broom to sweep, rather than a short one to avoid bending 90°).

"We recommend modification. Let's say their work demands standing so let's say they stand for like 2hours without sitting and after 2hours they start feeling a lot of pain I tell them that you can choose to stand for let's say 45minutes you rest for let's say 5minutes or so. So, divide instead of 2hours continuously. You can just break them into parts so that you have rest periods" (PT1, 31year-old-male, senior physiotherapist).

The next section discusses mal-adaptive practices reportedly facilitated by participants, patients and doctors.

6.3.2 Mal-adaptive Practices

6.3.2.1 Physiotherapists' Facilitated Practices

6.3.2.1.1 *"Some patients come for a year"*: Dependency on Healthcare Professionals

All the physiotherapists believed that multiple physiotherapy sessions were necessary for CLBP management. Therefore, the participants reported prescribing bi-weekly/tri-weekly/weekly physiotherapy sessions. Some of the participants reported that physiotherapy sessions spanned six to eight weeks on average. Others reported that physiotherapy sessions were ongoing for three to six months; with a few reporting patients with CLBP could attend physiotherapy for years. This suggests physiotherapists' facilitation of patients' dependency on healthcare professionals. All the participants however reported that the duration of the sessions was mainly dependent on patients' symptom response.

"We recommend averagely twice a week. Minimum duration of treatment, I'm looking at three weeks. Err Maximum, there's no maximum. Someone might go away and come back. You initially begin twice a week; then you come once a week; then you come once in two weeks; then you come even once in a month. But if I have to put a maximum let's say three months" (PT10, 39year-old, principal physiotherapist).

The issue is you see a patient for long and some of them … six months, you're still seeing the patient. There are some patients who come for a year and even more" (PT14, 30year-old-female, senior physiotherapist).

The participants acknowledged that the prescribed physiotherapy sessions were sometimes influenced by the national health insurance system (NHIS). The NHIS reportedly covered eight physiotherapy sessions; after which a patient required another doctors' referral for further management or had to pay out of pocket. This appeared to suggest system and hierarchical influences in CLBP care.

"Sometimes to the NHIS covers eight sessions so when it is exhausted, they can go for another referral from the doctor and come if the pain is still there" (PT12, 31year-old-male, senior physiotherapist).

Although all the participants expressed worry over seemingly long physiotherapy durations, one participant (PT15) reported advising patients that continuous physiotherapy sessions were rather beneficial.

"I give them less number of sessions as time passes by but I still make sure they understand the fact that having a continuous session would really help them" (PT15, 28year-old-female, physiotherapist).

It appeared that the belief about the permanency of structural defects (which were perceived as the main causes of CLBP) facilitated prescription of prolonged physiotherapy sessions by participants. This depicts the influence of participants' biomedical orientation.

"We are just managing the pain we are not taking it away so, after like eight sessions they're fine and when they have the condition again then they come back. So, they may be around for three to six months, then discharged and when it comes back, they come again" (PT18).

However some of the participants believed that patients were not willing to be discharged even when symptoms were considerably better due to physiotherapy being used as a form of socialization by elderly patients with CLBP; patients' dependency on electrotherapy and unwillingness to continue exercises and other prescribed passive therapies, such as heat therapy and massage at home.

"It's a complex thing that's how I see it. In our setting here, where someone would come one year, two years, three years, you discharge them after two months, after two weeks, they would come back with another complain. The person just wants to come to the physio department for the pain to be managed with electrotherapy or heat therapy or just wants to come here before he or she would do the exercise. So, it is a huge challenge. Discharge has really been difficult. For some, once you begin to discuss discharge with them, anytime they come the pain is increasing. Some elderly come to socialize because they enjoy coming for treatment because it is an opportunity for them to leave home and go out. So, because of that they don't want to be discharged" (PT18, 33year-old, senior physiotherapist).

Some participants believed that due to the link between activity and CLBP, intermittent long-term episodes of pain were inevitable and thus intermittent need for physiotherapy services. Other participants believed that the unwillingness of patients to adhere to biomechanical considerations resulted in a constant presence of pain and hence ever-present patients. These appear to depict the influence of participants' biomechanical orientation. Furthermore, the participants perceived failure to manage CLBP as a consequence of non-compliance as opposed to an ineffective approach. This highlights paternalism and power relationships between the physiotherapists and patients.

"Back pain I never get to discharge them. I do my part but as to whether the patients do their part of adhering to posture education and all that is the issue. Sometimes too they can't help it the way back pain is, sometimes they do some activities and the pain comes back so it never seems to go away. There is always pain" (PT13, 32year-old-female, senior physiotherapist).

According to the thirty-one-year-old physiotherapist at site two (PT12), long treatment duration was facilitated by inadequate reviews due to inadequate staff and lack of treatment guidelines.

"Because of the system that runs here. Then also the whole place you may have one or two physios seeing the patients and the caseload is huge. Maybe you saw the patient for two weeks, last week, this week, its either worse and something must change, you might not notice it because the patient comes, and you just continue. By the time you realize, you take the folder and realize that the patient has been coming in the last four weeks without any review. Maybe the lack of guidelines could contribute to these prolonged sessions" (PT12).

The next section discusses passive modalities reportedly utilized in CLBP management by participants.

6.3.2.1.2 *"We use dry heat, moist heat… stimulate the nerves"*: Passive Strategies and Therapies

Most participants believed a break from work, which was regarded as the causative agent of CLBP, was a necessary aspect of CLBP management. Therefore, they reported recommending sick leave. Some of the participants suggested sick leave prescription was not within the domain of physiotherapists and hence referred such patients to their doctors for some time off work. Others reported personally prescribing some days off work. The severity of the patients' pain was mentioned by these participants as a factor that informed sick leave prescription/recommendation.

"We usually advise patients to have some rest so that the pain will go down. We refer to the physician for the physician to give him/her the sick leave. Because when you are treating rest is one important aspect of back pain management. Sick leave is usually recommended for the person to rest and not engage in any activities that would aggravate the pain" (PT3, 36year-old, principal physiotherapist).

All the physiotherapists reported utilization of various passive modalities (electrotherapy, heat therapy, lumbar traction and massage) for patients with CLBP to relieve pain and ease tensed muscles. However, the rate of use and degree of importance attached to passive modalities appeared to vary slightly across participants. Only a few participants suggested minimal use in the initial phase of patients' visit and the majority suggested predominantly utilizing passive therapies throughout physiotherapy visits.

"For pain relief, we do that by using heat packs, electrical stimulation. We use electrotherapy, heat therapy, yes. Heat therapy is used when the muscles are tensed too and sometimes massage" (PT13, 32year-old-female, senior physiotherapist).

"Normally you would have to use some of these pain modalities, but you don't have to be dependent on these pain modalities. Sometimes when the pain is unbearable you try to just a little bit of pain-relief, but I don't even keep long, maximum 15minutes. Initially I may start with this pain relief but along the line I want to get them off it and see how it would go" (PT4, 37year-old-male, principal physiotherapist).

Some participants reported suggesting massage and heat therapy as long-term strategies to be used at home by patients with CLBP.

"Sometimes too we look at home care, where we recommend hot water bottle for the patient and then some massage with some topical analgesics creams" (PT3, 36year-old-male, principal physiotherapist).

The majority of the participants believed that the passive modalities were the measures available and unique to them as physiotherapists to curtail patients' pain, suggesting an influence of professional roles/identity. They reported that knowledge about passive modalities were acquired from training, however their practice environment reinforced and facilitated its use.

"We try to relieve the pain. As physiotherapists, we have different approaches. Either we use the dry heat, moist heat then we try to stimulate the nerves. Oh, from training we are thought what treatment modality to use for what, and they are available and used in the facilities too so…" (PT11, 29year-old-male, physiotherapist)

Electrotherapy (particularly TENS and sometimes shortwave, microwave and ultrasound) and heat therapy appeared to be the most utilized modalities.

"If it is some chronic pains, we try doing some TENS or microwave. They help to relieve the pains" (PT16, 28year-old-male, senior physiotherapist).

"Mostly I like moist heat in relaxing the muscles. If hot pack will help relieve the pain and relax the muscles, I'll go for it. If there is the need to use the TENS, I do" (PT18, 33year-old-female, physiotherapist).

However, the participants suggested that electrotherapy was the least known modality and hence the least sought modality by patients, buttressing physiotherapists' tendencies of introducing passive therapies to patients with CLBP.

"A fewer number of patients think of electrotherapy … Generally, we (physiotherapists) tend to use electrotherapy a lot but most patients do not seem to know about it" (PT8, 32year-old-male, senior physiotherapist).

Massage was reported by participants as a common modality readily associated with physiotherapy by patients with CLBP and thus expected as a treatment. This suggests an expectation of passive therapy by patients.

"I'd say majority of the patients who come here think they are coming for massage, because to them physiotherapy is simultaneous to massage. So, they come in thinking that they are going to be given massage" (PT8, 32year-old-male, senior physiotherapist).

Lumbar traction was reportedly prescribed to help ease pressure on an impinged nerve, thus relieve nerve pain that may have resulted from a disc bulge, or reduced intervertebral spaces, or osteophytes.

"And err in cases like disc herniation or disc bulge I think lumbar traction can be done. If we suspect reduced spaces, we do lumbar traction" (PT5, 53year-old-male, deputy-chief physiotherapist).

All the participants perceived manual therapy as an effective option for CLBP. However, most participants suggested rarely using manual therapy due to limited expertise.

"For me I don't do manual therapy because I'm not really comfortable with it. But most of the times if I realize that we should do some manipulations, that is the manual therapy, I let other therapists that are conversant with it do it" (P6, 28year-old-female, physiotherapist).

A few participants believed supportive devices (corsets and walking aids) were recommended for CLBP. They believed these devices assisted in reducing pressure placed on the back and hence provided some relief.

"And then I think err the next thing that I think about is the supportive devices too. There are some who might need a walking aid. So that they take some of the pressure from the back. So, if they need to use a corset to support them, their trunk I'd recommend that" (PT1, 31year-old-male, senior physiotherapist).

Most of the participants' narratives suggested that physiotherapists decided on a preferred modality for patients based on patients' symptoms and physiotherapists' biomedical/biomechanical knowledge.

"Most of the time we go with pain relief. So, we use TENS. Sometimes too if the muscles are also tense, we use hot pack. But if it is a radiating pain maybe we will go for some interferential. Sometimes if the pain is deep seated, I'd go for err shortwave" (PT6, 27year-old-female, physiotherapist).

The majority of the participants suggested that even during rare instances where patients opted for a preferred treatment choice, the ultimate decision lay with the physiotherapist because the professional is perceived to have the requisite knowledge and skills, suggesting a paternalistic culture of healthcare.

"But I think sometimes they (patients) have pre-programmed their minds on a treatment before coming, not often though. But after the assessment you are the therapist and you should arrive at the best for the patient" (PT1, 31year-old-male, senior physiotherapist).

Also, the participants suggested that most patients did not have prior physiotherapy knowledge, hence had no treatment preference and so expected the physiotherapist to make all decisions regarding their treatment. This appears to suggest patients' acceptance of a paternalistic approach.

"But when it comes to preference for treatment, most patients who come do not have anything in mind. They (patients) just want their pain to be relieved. Whether it's by exercise, any pain-relieving modality, they just don't know anything about what they are coming for" (PT18, 33year-old-female, physiotherapist).

The next section discusses maladaptive practices reportedly facilitated by patients and doctors.

6.3.2.2 *"You realize they have been on painkillers prescribed by doctors for a long time"*: Physiotherapists Beliefs Concerning Doctors' and Patients' Maladaptive Behaviours and Practices.

The majority of the participants believed that the 'Ghanaian attitude' made patients readily inclined to initially self-manage, suggesting an influence of culture on CLBP care. The participants reported that patients with CLBP commonly self-medicated with over-the-counter analgesics and herbal medication. Therefore, participants reported patients with CLBP presenting late to hospitals/doctors and by extension physiotherapy, since physiotherapy visits were normally dependent on doctors' referral.

"Patients don't come early. You get a few of them coming early but most of them they come after the condition is chronic. Some take years to even come. Hmm maybe it's our Ghanaian attitude. The person feeling LBP might try other things. Other things like massage somewhere else. All these alternative and herbal medicines and all that. Trying to cope by themselves" (PT14, 30year-old-female, senior physiotherapist).

The participants also believed that prolonged analgesic use was a common practice among patients with CLBP. They believed that in addition to prolonged periods of self-medication, doctors also prescribed analgesics to patients for prolonged periods before exploring other alternatives.

"When they get back pain, they go to the nearest drug store to buy painkillers and take it. Sometimes it helps them so they think oh if I take any painkiller it would resolve so as they keep on doing it and it doesn't resolve then they tend go to hospital. You realize they have been on painkillers prescribed by doctors for a long time too" (PT5, 53year-old-male, deputy-chief physiotherapist).

However, four participants (PT4, PT10, PT17, and PT18) believed that trends were changing. They reported that some doctors prescribed analgesics and physiotherapy concurrently and therefore referred patients with CLBP early for physiotherapy.

"At first the referrals were late. But now it's becoming better. Now what is happening is most of them they combine. They give them the painkillers and tell them to come and do physio too" (PT17, 32year-old-male, senior physiotherapist).

The next section discusses participants' beliefs regarding limited physiotherapy involvement, awareness and knowledge in Ghana.

6.4 *"I think most doctors don't … see the importance…of physiotherapy"*: Limited Physiotherapy Involvement, Awareness and Knowledge.

Most participants believed that physiotherapy was introduced as a management option in CLBP at a rather late stage. The participants believed that doctors had limited knowledge concerning the role of physiotherapy in CLBP management and therefore referred to physiotherapy upon patients' request, when pain persisted and there was the need to try another alternative, or patients could not afford surgery. This appears to suggest a lack of collaborative working between physiotherapists and doctors in the management of CLBP.

"Sometimes also the doctors don't refer patients early. Unless in cases where the person happens to know a physiotherapist … then the person comes to you (physiotherapist) and he gets referred quite early. But otherwise, if the person must go through the system, then it would take time before the person gets to you. I think most doctors I believe don't probably see the importance or the relevance of physiotherapy so they keep the patients to themselves thinking they can take care of them. But when they realize that the patients keep coming but they don't have solutions to it then they eventually refer the cases. I mean for majority of the cases that's the trend. They keep the patient, they try to prescribe medications, because even if you have to go through the folders you realize that medication, medication, medication" (PT10, 33year-old, principal physiotherapist)

In addition, two physiotherapists (PT4, PT10) believed that a deeper insight and collaboration with doctors in the management of CLBP in Ghana is needed.

"But I think that if we can have a solid team in the management and there is a proper coordination, everybody is in line and working we will be able to achieve the desired results that we want… The management is so disjointed that it becomes difficult to help the patient. So maybe in moving forward the best way is to make sure that a team works very well and also, we that we are treating, the physios or whatever we should know that if we can't help then it would be very difficult for the patient to be helped" (PT4, 37year-old-male, principal physiotherapist)

Some participants also believed that the referral protocols and bureaucracy that patients with CLBP had to navigate contributed to late physiotherapy involvement in CLBP and therefore a first point of physiotherapy contact practice policy might assist in bridging this gap. This appears to suggest the effect of hierarchical influences on CLBP care.

"We probably are proposing that the entry system should even be through the therapist. At the clinic sometimes when you compare patients who came through the doctors and those who came themselves, you realize that those who came through themselves tend to do better. Though I'm just saying it, I've not done a research. But that is my observation. Because going through the system, by the time they probably get back to you (physiotherapist), things might so I prefer entry system to our end before if we think we can't handle it we actually refer to the doctor" (PT10, 39year-old-male, principal physiotherapist).

The dominance of doctors within the healthcare system was further reinforced by some participants who mentioned that sometimes doctors' referrals came with required physiotherapy treatment prescribed by the doctors.

"Some clinics have some particular form, so they have marked it. They have written TENS, massage, so the doctors just tick those things. Even here some (doctors) even go to the extent of our normal referral of writing the treatment like muscle strengthening, they would put it in a blanket statement like electrical stimulation, muscle strengthening, massage. Some also write spinal manipulation" (PT17).

Two participants (PT4, PT15) also appeared to believe that private medical practice enhanced late physiotherapy involvement, since physiotherapy services were not available in most private hospitals and doctors preferred to hold onto patients for financial gains. This appears to suggest the influence of lack of physiotherapy accessibility/provision on CLBP care.

"Usually, the challenge that we've been facing is when they go through the private hospitals. Because the private hospitals are interested in their money, they wouldn't want to refer patients early. Most of these clinics don't offer physiotherapy too. So, they will be there and receive all the medication until the patient begins to express worry and lack of money and then the doctor will say then try physio" (PT4, 37year-old-male, principal physiotherapist).

Furthermore, all the participants believed that there was a general limited awareness and knowledge of physiotherapy and other medical alternatives among the general populace. The majority of the participants recalled that most patients with CLBP equate physiotherapy to massage and gym-based exercises. This depicts limited scope of physiotherapy practice perceived by patients.

"These patients don't really know if physiotherapy can really benefit them. So, they don't have the knowledge of the effect physiotherapy can have on them. They come thinking of massage and a few times exercises" (PT2, 28year-old-male, physiotherapist).

"Sometimes you can even get a seven-year history of back pain. They've been going up and down in and out of hospital. Sometimes I don't blame the patients. When you interview them, they don't treat themselves or they don't go to the herbal clinics, but doctors are not able to … tell if physio can help. So, most of the time, most doctors refer to us late" (PT13, 32year-old-female, senior physiotherapist).

Some participants also recalled that most patients with CLBP were unaware of what physiotherapy entails and therefore approached the treatment encounter as a passive recipient with a sole aim of seeking care by whatever means possible. Therefore, they were present at physiotherapy because their doctor had recommended it. This further reinforces the seeming sociocultural acceptance of paternalistic care.

"Normally we get patients by referral so when they come, they don't normally request for special therapy because they don't know anything. They're in for therapy so it's up to us to choose which therapy best suits them. So, they have the expectation that once I'm coming, especially referred by their trusted doctors, then they know that ok they've referred me to another better person who will help. They don't have any management preference" (PT4, 37year-old-male, principal physiotherapist).

The next section discusses positive beliefs and strategies reported by the participants.

6.5 Positive Beliefs and Strategies

6.5.1 *"For some they would want to work through their pain"*: Self-Efficacy Beliefs

Some participants reported that on occasions some patients worked through their pain and ensured CLBP did not affect performance of their daily activities, suggesting patients' self-efficacy. These participants believed that self-efficacy beliefs were facilitated by patients with CLBP.

"Some patients can use the pain to do most of their daily activities, so they don't take it serious" (PT6, 27year-old-female, physiotherapist).

The thirty-three-year-old female physiotherapist appeared to believe that self-efficacy in patients was influenced by culture, type of work and literacy. She believed that patients with low level of education and involved in manual work viewed CLBP as a consequence of hard work that could be overlooked until worsening symptoms emerged. According to this participant, the belief that CLBP is not a serious ailment had been passed down to this category of persons through folklore, and therefore CLBP was seen as a normal part of life. However, she believed that educated patients and office workers appeared to problematize CLBP.

"I have never seen a labourer for instance. I think such people don't see it as a problem. Because growing up and hearing people say my back, my waist but they are ok. They never go to any hospital; they never go to any physio so I think such people are so hardened that they don't really pay attention to these back aches until it worsens to the extent that they can't really do anything with it, that is when you find them in the hospital. But the corporate people are very conscious about what is happening, they are more educated, and awareness of back problems is more among them. So, I think that's why they would want to seek care" (PT18).

None of the participants indicated that they facilitated or encouraged patients' self-efficacy beliefs.

6.5.2 *"My advice is keep being active"*: Activity, Exercises and Pacing

Only one participant (PT10) believed that staying active was a better option for patients with CLBP and therefore categorically reported that he advised patients with CLBP to stay active.

"…My advice is that keep being active" (PT10, 39year-old-male, principal physiotherapist)

All the participants believed exercises were important, albeit with restrictions and caution.

"Exercises are very important…I think that well they (patients) must be involved in some level of activity. I don't think they should stay off completely. Even though there are a number of them, one or two who would come and say that can you request that I'm given days off work and I may refuse it" (PT12, 31year-old-male, senior physiotherapist).

All the participants believed that prescribed exercises were an essential aspect of CLBP management and therefore they reported prescribing varied back exercises (strengthening exercises, core stability exercises, stretches, and range of motion exercises). The exercise regimen prescribed by participants was reportedly influenced by biomedical understandings of CLBP.

"Some back-extension exercises, abdominal exercises, core-stability exercises, strengthening exercises" (PT16).

However there appeared to be variations concerning when to introduce exercises, with some introducing exercises immediately after assessment and others after significant pain relief.

"Yes so with the exercises, exercise comes at the end of the day, but on the first day we go through the exercises but subsequently we give the exercises for the patients to do those exercises by themselves" (PT10, 28year-old-male, senior physiotherapist).

"It depends. So, when you assess the pain, some people are in severe pain. Maybe two weeks or three weeks our target is to reduce the pain around 6. Aha, before we start the patient on any exercise" (PT17, 32year-old-male, senior physiotherapist).

The participants believed that prescribed exercises were necessary aspects of long-term coping with CLBP and therefore reported that they prescribed home exercises.

"We prescribe a home exercise or a home program. That one too is very important. That would sustain the therapy that you are giving to the person" (PT5)

It appears that participants referred to the importance of patients' involvement, only when exercises and biomechanical considerations were discussed. They believed that patients' adherence was important for effectiveness of exercises.

"You see patients' compliance with exercises is very important. If they don't adhere it's a problem" (PT14, 53year-old-male, deputy-chief physiotherapist).

All the participants believed that pacing activities allowed for a safer way to encourage performance of inevitable domestic and work tasks. Therefore, all the participants had reportedly suggested pacing to every patient with CLBP that they had encountered.

"Some patients sit down for so long a period without any breaks in between. So for such patients I recommend that they have to occasionally be on their feet, do a few stretches, if the job is too demanding such that you could not get the time to do the stretches, then you could go on breaks. Toilet breaks. Brief breaks where you can at least stretch whilst you're going or do a few exercises whiles in the washroom. It doesn't have to be for an hour. Five minutes, ten minutes, that should be enough" (PT8, 31year-old-female, senior physiotherapist).

The next section discusses other positive beliefs mentioned by the participants.

6.5.3 *"Most of the time, I would not immediately, quickly request for an X-ray"*: Other Positive Beliefs

A few participants believed that patients' expectation needed to be managed to curtail 'unrealistic and high' patients' expectations of a 'cure'. Therefore, they reported that as part of patient education, they informed patients that CLBP could only be managed and not cured.

"So, you (physiotherapist) manage their expectation psychologically, that oh we are not here to take everything away... Some we will manage it; some we can't do anything about it. So that they know that as I'm coming this is the state of it. So, let me not expect too much. Let them know

that it is a process that is still on-going. It is something that we manage you don't cure it. Because if it's a degenerative condition you don't cure it" (PT4, 37year-old, principal physiotherapist)

Also, two participants (PT12, PT18) believed that selective imaging was necessary in CLBP management. They believed that physiotherapy treatment could commence once physical assessments had been carried out. Therefore, they reported that they only requested for X-rays when patients had a history of trauma or when symptoms persisted.

"We request X-rays but not all of them. It depends on the history. So, if maybe there is a trauma, there was a fall, maybe then we refer…Most of the time, I would not immediately, quickly request for an X-ray" (PT12, 31year-old-male, senior physiotherapist).

Three participants (PT1, PT4, and PT10) believed that collaborative working was important in CLBP management. PT1 also believed that CLBP should be considered and managed from a biopsychosocial perspective and therefore relevant healthcare professionals such as psychologists were needed. Patients' involvement as part of a biopsychosocial approach however appeared absent from participants' narratives. Participants' positive beliefs and active strategies appeared to be mainly influenced by biomechanical/biomedical orientation and professional roles.

"…A biopsychosocial approach where we consider working together with other relevant HCPs such as pharmacists, psychologists" (PT1, 31year-old-male, senior physiotherapist).

The next section presents a summary of physiotherapists' beliefs.

6.6 Summary

All the participants upheld varied biomedical or biomechanical beliefs. Common biomedical beliefs were related to degeneration, trauma and the importance of a biomedical diagnosis (facilitated by X-rays). Biomechanical beliefs were mostly around posture, occupational and domestic tasks. Bio-medical/mechanical beliefs were influenced by participants' professional identity described mainly in terms of physiotherapists' bio-medical/mechanical orientation and paternalism (to be discussed in detail in Chapter 7). Also, all the participants expressed varied maladaptive beliefs (FABs, significance of pain) and practices facilitated by: physiotherapists (dependency on HCPs, passive therapies, such as electrotherapy and sick-leave); doctors and patients (late hospital visits, self-medication and prolonged analgesics use). Mal-adaptive beliefs and practices appeared to be influenced by participants' professional identity (bio-medical/mechanical orientation, paternalistic care) and sociocultural expectations. Positive beliefs and active strategies related to exercises and pacing were expressed by all the participants, though with suggestions around activity restriction. Other positive beliefs expre#ssed by a few participants were self-efficacy, selective imaging and managing expectations. Positive beliefs and active strategies appeared to be influenced by participants' bio-medical/mechanical orientation. Limited physiotherapy involvement and knowledge was also expressed by most participants. These appeared to be influenced by system/hierarchical influences, physiotherapy visibility (including accessibility) and fragmented management.

6.7 Reflection

The researcher approached the data collection with physiotherapists as being both an insider/outsider (a Ghanaian physiotherapist and student at a UK institution). Most physiotherapists in Ghana received training from the University of Ghana. Therefore, physiotherapists in Ghana are closely knit. Being an insider facilitates trust and rapport as the interviewer and participants share common language and experiences (Dwyer and Buckle, 2009). In the current research, being an insider was integral to understanding some of the jargons and processes (e.g., referral) conveyed by the physiotherapists. Words such as in-charge, excuse duty, treatment room were familiar to the researcher and therefore allowed for a conversation devoid of undue interruptions to seek explanation of terms being used by participants. However, Dwyer and Buckle (2009) indicate that being an insider does not necessarily give you prior notions inherent within the sub-cultures. Indeed, physiotherapists in this study revealed beliefs and practices that were distant to what the principal researcher knew and experienced as a Ghanaian physiotherapist (e.g., views on timing of exercises). The physiotherapists' interviews took place at a neutral venue. This may have been facilitated by the insider status of the researcher; since being an insider facilitates cooperation of participants due to enhanced trust and rapport (Quinney, Dwyer and Chapman, 2016)

Additionally, the insider status of the researcher facilitated participants' immersion into the dialogue. This immersion may result in participants divulging information which they did not intend to disclose (Kvale, 2006). In the current research, the temptation to disclose procedural information regarding CLBP management that was considered sensitive by the participant emerged as disclosed in chapter 3, section 3.5. Additionally, being an insider facilitated ease of access to gatekeepers and recruitment of participants. However, the researcher was mindful of the ethical responsibility of recruiting participants without coercion or pressure (McDermid, Peters, Jackson, Daly, 2014). Therefore, voluntary participation and the right to withdraw from the research at any time were emphasized to participants and gatekeepers.

There was an indication from the beginning of most interviews that physiotherapists were wary of being assessed and judged by an 'outsider' who had acquired some ‘superior’ knowledge. The researcher however assured the participants that the interviews were going to be a conversation around CLBP and its management. Objective and collective terminologies appeared to be used by participants during the initial stages of the interview. This phenomenon is common when interviewing professionals (Quinney, Dwyer and Chapman, 2016). However, the researcher using prompts and probing ensured that participants’ personal and subjective opinions were also derived. The researcher considered the physiotherapists’ interviews as the most challenging when compared to patients’ and doctors’ interviews. This was due to the increased risk of influencing the interview with the researcher’s biases. The task of maintaining realistic and in-depth interview sessions demanded continuous self- assessments and reflections. Furthermore, the risk of approaching interviews with preconceived ideas was highest for this group of participants, since the researcher was a physiotherapist and thus aware of general physiotherapy approaches for CLBP. The use of an interview guide, reflexive diaries and supervisory meetings helped keep the researcher in check and facilitated a broad and deep exploration of issues raised by participants and those present in the interview guide.

The next section provides an interpretation of the main findings from doctors’ and physiotherapists’ data in relation to the extant literature.

6.8 Interpretation of HCPs’ Data in Relation to the Extant Literature

This is the first study that explores the CLBP beliefs of HCPs in an African country. All the HCPs who participated in the study expressed predominant biomedical/biomechanical beliefs concerning CLBP, depicting a prevailing bio-medical/mechanical orientation. Similarly, Zangoni and Thomson (2017) intimate that HCPs tend to be inclined towards utilization of implicit professional knowledge, which is typically biomedically oriented rather than evidence-based approaches. In addition, Farre and Rapley (2017) indicate that the nature of medical care that encourages autonomy and medical supremacy facilitates biomedically tailored approaches and hinders the uptake of biopsychosocial interventions which demand collaborative effort and shared decision making. This resonates with the current study which portrays an inclination of HCPs towards the use of imaging and other diagnostics, goal setting ‘for’ patients and independent (HCPs) decision making to facilitate the therapeutic dialogue between the ‘knowledgeable professional’ and the ‘passive recipient’ (patient): paternalist care. Furthermore, in the current study, HCPs’ professional identities that emphasize biomedical and paternalistic approaches may account for the shift of patients’ initial biopsychosocial inclinations to biomedical ones as highlighted in the patients’ narratives (Chapter 4). Biomedical beliefs and orientation have also been reported in surveys conducted on HCPs (doctors and/or physiotherapists) beliefs in Europe, Canada, Brazil, Hong-Kong and Saudi-Arabia (Bishop et al., 2008, Fullen et al., 2011, Mauricio et al., 2012, Simmonds et al., 2012, Regina et al., 2015, Alshehri et al., 2020). These previously conducted studies reported uncertainty regarding HCPs' treatment orientation due to attaining of mid-scores for both biomedical and biopsychosocial sub-scales of the PABs, suggesting some awareness and beliefs regarding biopsychosocial involvement in CLBP. In contrast, the present study findings suggest that there is almost a non-existent consideration of psychological factors and very limited beliefs around biopsychosocial considerations for CLBP among Ghanaian HCPs.

The current study findings indicate that participants' biomedical and biomechanical beliefs underlie their treatment choices and pathways. This aligns with findings from systematic reviews (Darlow et al., 2012, Gardener et al., 2017) and primary research by Alshehri et al., (2020) and Regina et al., (2015) on HCPs' beliefs that have established significant associations between HCPs' treatment orientation/beliefs and treatment choices. On the contrary, a survey conducted by Fullen et al., (2011) on Irish doctors' attitudes and beliefs regarding CLBP reported that doctors' biopsychosocial beliefs regarding CLBP did not match their treatment practices. Also, in the current study, there was a mismatch between doctors' beliefs regarding imaging and sick leave and their reported practices in a few instances. In these instances, doctors reported an awareness of current evidence advising against routine imaging and sick leave for CLBP, but reportedly prescribed sick leave and imaging to enhance patient satisfaction. This agrees with studies by Corbett, Foster, Ong (2009) and Fullen et al., (2011) on doctors' attitudes, beliefs and reported behaviours and a SR by Gardener et al., (2017) on the influence of physiotherapists' beliefs and attitudes on CLBP management. These studies suggest that non-evidence-based strategies are sometimes prescribed by HCPs, not because of unawareness of current guidelines but due to patients' expectation and satisfaction. According to Regina et al., (2015), uptake of biopsychosocial interventions by HCPs is a complex process that is determined by patients' and HCPs' perspectives and healthcare settings. This assertion is portrayed in the current study, since HCPs' biomedical/mechanical orientation, socialization within the practice environment, HCPs professional identities and patient expectations underpinned HCPs reported beliefs and practices.

It is worthy of note however that in the present study, most of the participants expressed beliefs and practices that mostly contradicted current evidence for CLBP management (Lin et al., 2020). For instance, radiological imaging was considered appropriate and universally prescribed by most HCPs in the current study. Similarly, a high rate of imaging prescription (1 out of 4 LBP patients) was found in a SR of twenty-six studies assessing the constituents of usual care in family medicine practice and emergency departments (Kamper et al., 2020). Despite all the included studies in the SR being studies conducted in developed countries, where HCPs have access to and are aware of current practice guidelines, a high rate of imaging prescription was eminent (Kamper et al., 2020). Another 2020 systematic review (69 qualitative studies) on clinicians and patients views about imaging for LBP found strong to moderate evidence suggesting that the need for radiological imaging is driven by HCPs' desire to reassure patients that their pain is not resulting from serious pathology, (fear of) medico-legal litigation, legitimizing patients' pain and patients' expectations (Sharma, Traeger, Reed et al., 2020). The HCPs in the current study endorsed all the reasons for radiological imaging stipulated by Sharma et al., (2020), except for medico-legal litigation that did not appear to be an aspect of concern for doctors and physiotherapists in the present study. This may be related to the high level of trust wielded in HCPs and paternalism as reported by patients and HCPs in this study; hence patients demanding little accountability from HCPs. Research by Lin et al., (2013), suggests that imaging findings may facilitate negative beliefs, unhelpful behaviour and pessimistic outlook of patients with CLBP. Moreover, a qualitative study of 11 patients by Alhowimel, Alotaibi, Coulson, Radford (2020) on the psychosocial consequences of diagnosing non-specific CLBP in Saudi-Arabia found that radiological-facilitated diagnosis enhanced restricted participation in daily and social functions, FABs and anxiety. In the present study, doctors reported that they explained the benefits of imaging to patients with CLBP. They suggested it was an avenue to reveal the source of patients' symptoms, without explaining potential harmful effects of imaging for patients with CLBP. This emphasis on benefits of imaging by HCPs was similarly reported in the SR by Sharma et al., (2020) on clinicians and patients' views concerning imaging.

Furthermore, indiscriminate radiological imaging has been identified as a significant source of CLBP care costs in developed and developing countries (Carregaro, da Silva, van Tudler, 2019, Chou et al., 2012, Maniadakis and Gray, 2000). Indiscriminate radiological imaging may also lead to over-diagnosis (Sharma et al., 2020). The current study gives an indication that radiological imaging may be a significant source of over-diagnosis and costs incurred in CLBP care in Ghana, since the majority of physiotherapists and doctors in the current study reported prescription of some sort of imaging to all patients presenting with CLBP. Of concern is the absence of non-specific CLBP as a diagnostic label for CLBP in the discourses of all physiotherapists and most doctors who participated in the current study, which reinforces Ghanaian HCPs beliefs about identifiable CLBP causes. This contradicts research conducted in developed countries where the term non-specific CLBP provides an explanation for the very nature of the highest number of CLBP patients reporting for care (>80%) (Kent and Keating, 2004).

Biomechanical beliefs were expressed by all participating HCPs of the current study. However, there was an overarching biomechanical inclination of physiotherapists when compared with doctors. Moreover, physiotherapists perceived themselves as 'biomechanical experts'. This biomechanical inclination of physiotherapists was also reported in a SR by Gardener et al., (2017) on the influence of physiotherapists' beliefs and attitude on treatment practices which reported that physiotherapists preferred to treat biomechanical problems but felt inadequate to address psychosocial issues. The HCPs in the current study reported that education of patients with CLBP was mainly centered on explanation of bio-mechanical/medical causes. This contradicts current guidelines for CLBP management which advise against a concentration on pathoanatomic explanations of CLBP causes due to the possibility of pessimism and the adverse influence pathoanatomic explanations may have on future LBP episodes (Lin et al., 2020).

Fear-avoidance beliefs formed a prominent aspect of the narratives of doctors and physiotherapists in the current study. FABs mainly resulted in advice on avoidance and restriction of activity; and sometimes led to sick leave prescription, advice on rest and delayed return to work. Similarly, SRs by Darlow et al., (2012) (17studies from eight developed countries) and Gardener et al., (2017) (five quantitative and five qualitative studies) on HCPs' and physiotherapists' beliefs respectively, found that FABs were common among HCPs, and HCPs with high FABs were more likely to offer sick leave certification and delay return to work. SRs of evidence-based guidelines however advocate for early and graded return to work (Lin et al., 2020, Oliveira et al., 2018). It also appears that some participating physiotherapists in the current study placed activities on a continuum, with extreme opposing ends indicating potentially easily avoidable activities and difficult to avoid activities. For instance, activities related to work and hobbies appeared to be on opposing extreme ends of the continuum and therefore some physiotherapists indicated that it was easy to task a patient to avoid a perceived harmful hobby. This highlights the potential for limited consideration of the psychological wellbeing of patients, as an aspect of CLBP management. Lifting heavy loads and the adoption of a round back were considered precipitators of CLBP and therefore commonly advised against in the current study. This conforms to a survey of 400 manual handling advisors and physiotherapists in UK on the safest lifting technique (Nolan, O'Sullivan, Stephenson, 2018). Nolan et al., (2018) found that 75% of physiotherapists reported that the safest lifting technique constituted the use of a straight back. However, there is no evidence to support the claim that avoidance of lifting or a round back prevents LBP

(Kingma et al., 2010). A prominent difference between the FABs of doctors and physiotherapists in the current study was that the doctors proposed activity should be guided by patients' pain tolerance and hence reportedly advised patients to take a break when pain was unbearable. However, the physiotherapists emphatically indicated that they advised patients that pain was a warning sign and an indication of further harm and facilitated hypervigilance. Darlow et al., (2013) intimates that advice to protect the back may result in worry and hypervigilance.

All the doctors and physiotherapists in the present study gave credence to pain as the most important indicator, which other goals such as function were dependent on. Similarly, UK general practitioners in a mixed-method study on GPs' attitudes and self-reported practices about LBP believed pain control was a key focus for general practitioners managing CLBP (Corbett, Foster and Ong, 2009). However, Smith, Hendrick, Smith et al., (2017) in a SR (nine articles from seven trials) comparing the effects of painful and non-painful exercises for chronic musculoskeletal pain found that painful exercises presented small but significant benefits over non-painful exercises. This SR depicts that exercising with pain is safe and therefore pain-relief should not be a compulsory antecedent to the achievement of other therapeutic goals. Moreover, research by Gardener et al., (2015) on patient-led goal setting in clinical care found that clinical outcome measures do not necessarily align with goals that were meaningful to patients: 49% of the twenty study participants prioritized goals relating to physical activity.

Maladaptive practices were expressed by all the participating HCPs in the current study. Most doctors and some physiotherapists in the current study believed rest was not beneficial for CLBP management. However, they acknowledged prescription of sick leave, albeit for a shorter duration to meet patients' expectation and facilitate healing of back structures. Similarly, studies (Corbett, Foster, Ong, 2009; Fullen et al., 2011) on doctors' attitudes, beliefs and behaviour reported that there were often tensions between patients and HCPs over the advice to stay active and patients' expectation of being prescribed bed rest. According to Corbett, Foster, Ong (2009), GPs therefore supported modified rest and short periods off work. Furthermore, intermittent and prolonged use of analgesia (Paracetamol, NSAIDs and Opioids) was expressed by participants of the present study. Similarly, a SR (twenty-six studies:195,000 patients with LBP from countries) assessing the components of usual care in family medicine practice and emergency departments found that opioids were over-prescribed in family practice According to SRs of clinical practice guidelines (CPGs) for musculoskeletal pain (44 CPGs; 11 high quality LBP guidelines) (Lin et al., 2020) and CLBP (15 CPGs) (Oliveira et al., 2018), paracetamol is advised against as first-line management and opioids are not recommended for CLBP due to questionable efficacy and the potential harm associated with opioids (overdose and death). Prescriptions of NSAIDs are also cautioned to be carried out taking cognizance of potential harmful effects of prolonged intake (Lin et al., 2020, Oliveira et al., 2018). The doctors in the present study reported consideration of harmful effects of pain medications when prescribing. However, it appears they felt that pain medication was the most effective way available to doctors to control CLBP. The physiotherapists in the current study reported that massage, heat therapy and electrotherapy were frequently used in the management of CLBP. This agrees with findings of a review conducted on CLBP beliefs and management practices in Africa (Ahenkorah et al., 2019), suggesting a favouring of passive modalities by developing countries, including Ghana. In contrast, physiotherapists in developed countries often utilize manual therapy and exercises (Shipton, 2018). In addition, physiotherapy students from UK and Sweden, in a qualitative study, described their professional identities as "empowerers", "educators" and "treaters" (Lindquist, Engardt, Garnham et al., 2006). A contrasting approach to physiotherapy regimen and formulated professional identities for CLBP management between developed and developing countries is evident. The difference in practice appears to be due to lack of engagement with evidence-based practice and absence of practice guidelines. According to SRs of CPGs, there is inconsistent evidence on the efficacy of electrotherapy, massage and heat therapy for CLBP management (Lin et al., 2020, Oliviera et al., 2018). More importantly, Shipton (2018) suggests that passive therapies such as prolonged analgesics and electrotherapy do not offer long term benefits for patients. Passive therapies also facilitate dependency on the healthcare system and hinder self-management (Malfiliet, Ickmans, Huysmans et al., 2019).

Of particular interest, in the current study, doctors appeared to be more abreast with the current evidence on activity, imaging, bed rest and patient-centred care when compared to physiotherapists, although this evidence-based knowledge did not necessarily match their reported beliefs and practices. This could be as a result of access to evidence-based materials and external scientific meetings/clinical meetings by doctors as indicated by a few participating doctors. This could also be due to the appreciation of evidence-based medicine hence a quest for evidence-based knowledge as the term evidence-based/evidence-based medicine was frequently used in doctors' narratives but not physiotherapists' narratives.

Although SRs of CPGs prioritize advice to stay active for patients with CLBP (Lin et al., 2020, Oliviera et al., 2018), only one physiotherapist emphatically reported that he advised participants to stay active. On the other hand, most doctors indicated that activity was more beneficial than rest for patients with CLBP. Generally, there was an appreciation of exercises and activity as important aspects of CLBP management, suggesting that Ghanaian HCPs sometimes expressed beliefs and practices that were in line with current evidence for CLBP management (Lin et al., 2020). However, physiotherapists in the present study reported prescription of specific back exercises, rather than facilitation of general function or activity performance. The current evidence for CLBP management however suggests that no specific exercises are more effective for CLBP and a concentration of facilitation of functional activities should be prioritized (Shipton, 2018, Fersum, Smith, Kvale et al., 2019). Pacing was also commonly suggested by all the HCPs in the present study as a way of encouraging performance of daily tasks and work roles, although a biomechanical rationale of decreasing load on the back underpinned this advice. Also, the physiotherapists in the current study commonly reportedly prescribed core stability exercises, which appears to be a dated approach for CLBP management. A systematic review by Smith, Littlewood, May (2014) debunked the efficacy of core-stability exercises for CLBP. Some doctors in the present study also reported that sick leave could not be a panacea to CLBP, hence did not prescribe sick leave for patients with CLBP. Again, this belief and practice is consistent with current management guidelines for CLBP (Lin et al., 2020).

The CLBP beliefs and practices of Ghanaian HCPs appear to be modeled around a professional identity that is mainly hinged on biomedical/biomechanical understandings and paternalism. Hierarchical influences and power play between doctors and other HCPs as well as between HCPs and patients contribute to how CLBP is managed in Ghana. Sociocultural beliefs around the role of the patient (passive recipient) and the HCP (knowledgeable professional) also influence HCPs beliefs and practices. Limited HCPs’ engagement with evidence and limited patients’ knowledge are also contributing factors. A reconstitution of HCPs’ beliefs and knowledge to acknowledge the following: mostly CLBP does not have a readily identifiable cause, biopsychosocial perspectives provide a holistic understanding, assessment and management approach for the complexities of CLBP, activity is paramount and general exercises are also effective, patient empowerment and self-management is key in chronic pain management is warranted.

Chapter 7: Illness and Professional Identity: A Composite of Power, Group and Sociocultural Dynamics

7.0 Background

This research aimed to develop a theoretical model that explains the CLBP beliefs and management among Ghanaian HCPs and CLBP patients. Guided by the principles of grounded theory and critical realism (Strauss and Corbin, 1998; Bhaskar, 1986); open coding, axial coding, induction, deduction and abduction facilitated generation of categories, concepts and mechanisms that explained the CLBP beliefs and management practices among Ghanaian HCPs, and patients with CLBP (Chapters 4, 5 and 6). In keeping with critical realism and grounded theory, a core-category representing the significant/encompassing mechanism that explains the beliefs that underlined the experience and management of CLBP in Ghana was derived. This chapter discusses the core-category and derived theoretical model. A reflection on how selective coding, abduction, retroduction and reflexivity were used to derive the core-category is presented below.

7.1 Reflection

That themes emerge from the data is a common assertion in most qualitative research texts (e.g., Saldana, 2015). The intricacies that lay with this phrase began to materialize once I began data analysis. This chapter further deepened my appreciation of the mind-stimulating processes that qualitative research demands. Identification of the core-category spanned about a year, with initial exploratory thoughts such as biopsychosocial beliefs and power emerging. After open and axial coding were completed, and substantive categories and mechanisms generated, the researcher began exploring and querying what mechanism provided an encompassing, explanatory power (that is, the mechanism that sufficiently explained how CLBP beliefs emerged and why CLBP management proceeded the way it did among the participants) (Corbin and Strauss, 2008). Therefore, the researcher, using retroduction, began to ask the transcendental question: 'what may be for this to be the case?' (Bunt, 2018). The derived mechanisms were particularly questioned, compared and explored, as the researcher sought an explanatory framework (causal mechanism) that explained the beliefs and management outlined by participants (effect) (Blaikie, 1993). Using reflexive diaries and diagrams, the researcher unpacked her thoughts around linkages and dominant trends in the data. Constant comparison of data and supervision meetings aided the emergence of the core-category.

The concept of professional identity emerged earlier on in the analysis (during open and axial coding) compared to other core concepts. The data consistently showed that HCPs approached CLBP management considering who they felt they were, what made them unique, and what society expected from them as professionals: professional identity. Furthermore, the data showed that patients' formulated beliefs around CLBP influenced how they managed and lived with CLBP. Patients had largely formulated beliefs that made them perceive CLBP as a transient part of the self and thus CLBP practices aligned with the focus on elimination of an 'unwanted' self in the hope of regaining the pre-morbid self; hence a sub-core-category illness identity was derived.

The main contention as regards the core-category was power versus identity. The notion of power as a possible core-category became endearing as the data progressively showed the dominant paternalistic and biomedical inclination of HCPs' and patients' expectation of same. However, as it would later play out, power did not provide a successful explanation for themes such as HCPs' maladaptive beliefs and practices and HCPs' recurrent language, 'we' and 'over here', that depicted the social activity which underpinned their practice. There were more varied categories within the patients' data. However, there was a clear indication of dominant biomedical/biomechanical beliefs and maladaptive beliefs which were largely driven by HCPs and sociocultural beliefs. The unique finding of patients entering the healthcare system with biopsychosocial beliefs which became reduced to biomedical perspectives following encounters with HCPs was also uncovered. Thus, the dominant influence of HCPs emerged again. Yet again, power did not comprehensively account for other categories such as psychosocial impact and some maladaptive beliefs/behaviours. Rather, power better served as a significant mechanism underpinning the more encompassing core-category, identity.

Later, the arduous task of situating the research within the wider research context in order to highlight unique contributions within the field began. Concepts around Arthur Frank's narratives of quest, chaos and restitution (Frank, 1995), biographical disruption/suspension (Bury 1982, Bunzli et al., 2013) and the sick role (Parsons, 1951) were all considered at some point. The use of reflexive diaries, supervision meetings, reading and re-reading helped identify the core theories underpinning further abstraction of the research findings. The journey towards this chapter could be summarized as a challenging yet fulfilling and developmental task in my PhD journey. The following section introduces the core-category and explanatory theories used to further abstract the data and generate a theoretical model.

7.2 Introduction

Chapters four, five and six elucidated how patients', doctors' and physiotherapists' beliefs regarding CLBP were linked to their behaviours, practices and perceptions of self. **Identity** was thus derived as the core-category, with **illness identity** and **professional identity** as sub-core-categories. Given the influence of HCPs on patients' beliefs in the current study; the link between beliefs and how people formulate their personal and social identities (Adams et al., 1997), the definition of identity presented by Mead (1934) guided this chapter.

The concept of illness identity inspired by Charmaz (1995) was used as the interpretative framework guiding further abstraction of patients' and HCPs' data and situating this research within the wider research context. The four illness identity states: rejection, engulfment, acceptance and enrichment (Van Bulck, Goossens, Luyckk et al., 2018) will be discussed. This chapter introduces the concept of liminality as an illness identity state in the current study. Liminality provides an explanation of patients' inability to progress towards more positive illness identity states. Additionally, this chapter will reveal HCPs as 'powerful' entities driving patients' adopted illness identities. The situation of the self within the discourses of power as stipulated by Foucault (1979, 1982) will be used to explain the role of HCPs in facilitating patients' illness identities.

To further establish the HCPs' (physiotherapists and doctors) data within the wider research context, social identity approach (Turner and Tajfel, 1979, Turner, Hogg, Oakes et al., 1987) as it pertains within the discourse of professional identity will be used to interpret the HCPs' data. Social identity approach provides a framework for assessing the inter/intra- group processes that exist between the participating HCPs. Additionally, Freidson's theory of medical dominance will be used to explain the power dynamics between the doctors and physiotherapists (Freidson, 1970).

The chapter ends with a summary. Figure 17 below provides a pictorial representation of the core category, mechanisms and categories derived from this study. These will be discussed throughout this chapter. The next section introduces the concept of identity.

The Ghanaian CLBP Beliefs & Management Theory: Core Category, Mechanisms & Categories

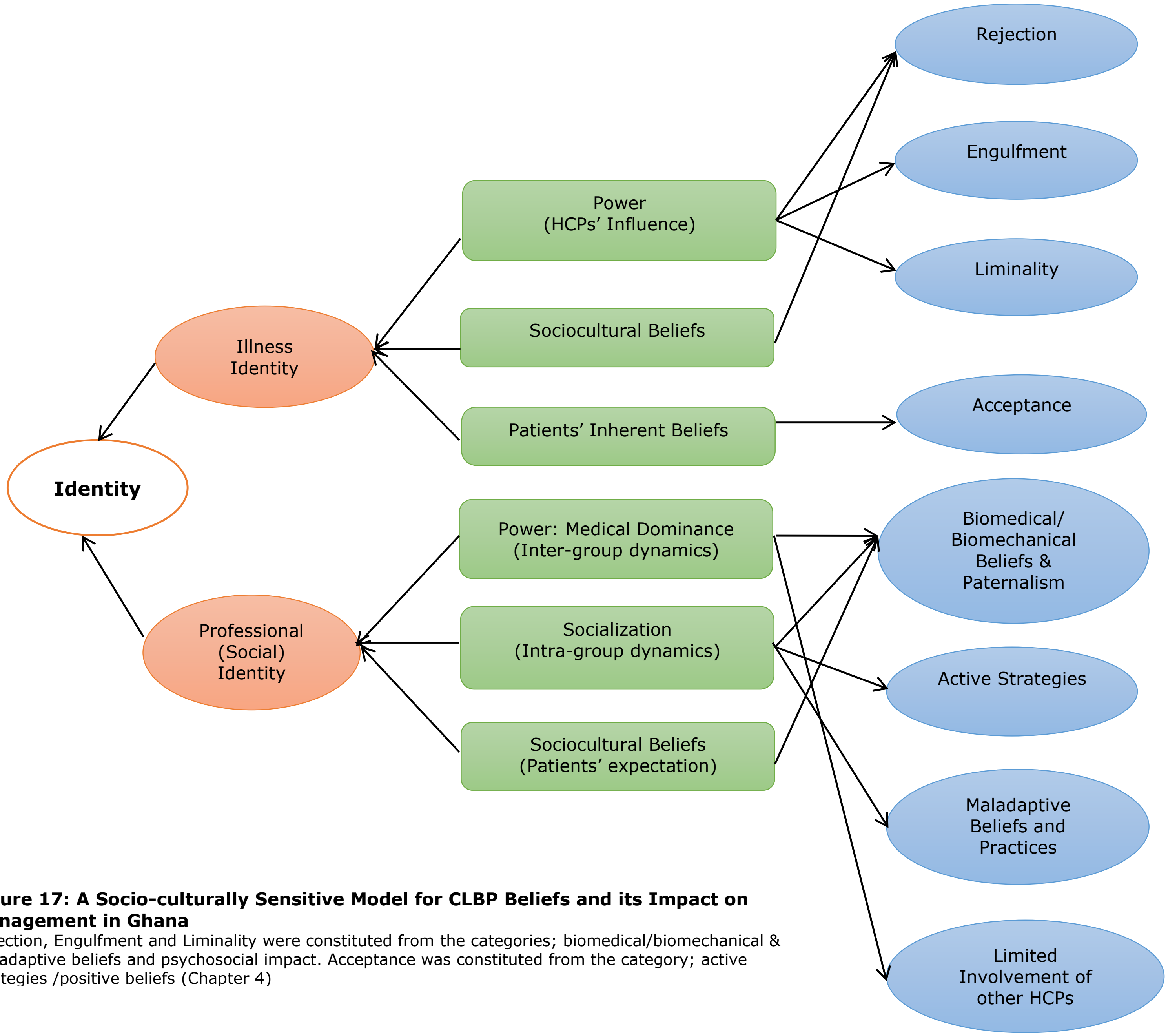

Figure 17: A Socio-culturally Sensitive Model for CLBP Beliefs and its Impact on Management in Ghana

Rejection, Engulfment and Liminality were constituted from the categories; biomedical/biomechanical & maladaptive beliefs and psychosocial impact. Acceptance was constituted from the category; active strategies /positive beliefs (Chapter 4)

7.3 Identity

The concept of identity spans a variety of domains; philosophy (Descartes, 1641), neuroscience (Damsio, 1998), developmental psychology (Erikson, 1963), sociology and social psychology (Mead, 1934, Blumer, 1969, Goffman, 1963). These varied fields commonly describe identity as a dynamic and multifaceted concept, affected by social situations (Clarke, 2003). However, identity as defined within sociology and social psychology will be applied in this chapter. Specifically, the definition of identity provided by Mead will be employed. Mead (1934) describes identity as a dialectic between 'me' and 'I' with the 'I' representing personal identity and 'me' representing one's social identity. The 'me' occurs within the social environment; it relates to the self as formed by one's relationships, group membership, status and roles. It is the self as formed through the lens and expectations of significant others. Personal identity refers to how individuals locate, describe, and differentiate themselves from others (Hewitt, 1992). Mead (1934), aligning with the precepts of symbolic interactionism describes the self as reflexive and principally a social structure. Symbolic interactionism opines that individuals interact with each other to create symbols (e.g. language, words, gestures, rules, roles) and these symbols shape one's perception of how they are viewed by others and also become gauges by which individuals view others (Mead, 1934). These symbols shape behaviour and identity (Adams and Jones, 1997). The definition by Mead lends itself suitably to this research because it fosters the opportunity to assess the construction and negotiation of identity within various social contexts (e.g., hospitals/HCPs, sociocultural environments) and the influence of the self. This chapter will use the terms identity and self interchangeably, since this is what pertains in previous research on chronic illness and identity (Bury, 1982, Charmaz, 1995, Adams and Jones, 1997, Van Bulck et al., 2018).

In the field of chronic illness, seminal work by Bury (1982) and Charmaz (1983) set the scene for research into chronic illness and identity. Bury (1982) analyzed interviews of twenty-five female and five male patients with rheumatoid arthritis and coined the term 'biographical disruption'. He described the inception of chronic illness as leading to disruption of one's future plans and thus a "fundamental rethinking of one's biography and self-concept" (p.169). Charmaz (1983) also analyzed interviews of fifty-seven chronically ill individuals. She proposed that chronic illness resulted in "leading restricted lives, experiencing social isolation, being discredited and burdening others" (p. 167). Consequently, patients with chronic illness experienced "loss of self" (p. 167). These seminal works provide an understanding of the processes involved in identity transformation when chronic illness begins (Yoshida, 1993). Further researchers have explored the identity transformation processes involved with chronic illness (Williams, 1984, Corbin and Strauss, 1987). More importantly and for the purpose of this chapter, previous authors have also explored the outcomes of these identity transformations (Charmaz, 1987, 1995, Yoshida, 1993). Charmaz (1995) interviewed one hundred and fifteen patients with varied chronic conditions such as "heart and circulatory disease, cancer, emphysema, diabetes, chronic fatigue syndrome, rheumatoid and collagen diseases (arthritis, lupus erythematosus, Sjogren's syndrome, mixed connective tissue disease), and other auto-immune diseases (such as multiple sclerosis)" (p.661); they described the relations between the body, identity and impairment and ways in which individuals with chronic ailment may adapt to illness. Charmaz (1995) stressed the importance of illness integration/identity: altering life and self to attain unity between the impaired body and self as a way of adapting to chronic illness. Following on from the research by Charmaz (1995), other authors (Adams and Jones, 1997, Oris, Rassart, Prikken et al., 2016, 2018, Yanos, Roe, Lysaker, 2010) have further developed the propositions by Charmaz (1995). More recently, research by Van Bulck et al., (2018) on illness identity among two hundred and sixteen patients with congenital heart disease identified that, the type of illness identity adopted by patients predicted healthcare usage. The current research, using illness identity as an interpretative lens and due to the previously identified relationship between illness identity and healthcare usage (Van Bulck et al., 2018), builds on previous research by Charmaz (1995) and Van Bulck et al., (2018) described above. The following section discusses the concept of illness identity.

7.4 Illness Identity

Illness identity refers to the degree to which an individual incorporates illness and established a coherent sense of self (Charmaz, 1995, Leventhal, Idler, Leventhal, 1999). This degree of incorporation guides daily life choices and values (Charmaz, 1995). For this study specifically, illness identity refers to how CLBP has been incorporated into one's self (Oris et al., 2016). Generally, there are four illness identity dimensions: Rejection, Engulfment, Acceptance, Enrichment (Oris et al., 2016, Van Bulck et al., 2018). Illness Identity has also been explored in terms of illness self-concept (Morea, Friend, Bennett, 2008), illness cognition (Evers, Kraaimat, Lankveld et al., 2001), enmeshment theory (Morley, David, Barton, 2005), self-concept differentiation (Harris, Morley, Barton, 2003) and self-discrepancy theory (Waters, Keefe, Strauman, 2004). These measures of identity either cover narrow dimensions of identity (Morea, Friend, Bennett, 2008, Evers et al., 2001) or reduce identity to attributes/roles performed (Harris, Morley, Barton, 2003; Morley, David, Barton, 2005). For instance, the illness self-concept scale proposed by Morea, Friend, Bennett (2008) consists of three domains (directionality, pervasiveness, illness self-consciousness) which focus on the engulfment dimension of illness identity; and self-differentiation concept refers to the degree to which an individual’s self-representations differ in different roles (Diehl, Hastings and Stanton, 2001). An individual who employs similar self-representations across different roles has a low self-differentiation and thus loss of an attribute or a part of the self is likely to affect varied roles (Harris, Morley, Barton, 2003). Self-differentiation appears to equate identity to roles only. Therefore, the four dimensions (Rejection, Engulfment, Acceptance and Enrichment) (Charmaz, 1995, Oris et al., 2016, Van Bulck, 2018) will be applied to this research because:

- They cover a broader scope of illness identity.
- The dimensions are directly related to integration of illness and adapting the self to enhance unity between the body and self (Charmaz, 1995).
- They offer a theoretical framework that largely lends itself to the current research.
- Lastly, application of these illness dimensions offers an opportunity to analyze why and how patients in the current study align more with certain illness identity dimensions than others.

The next section discusses the rejection illness identity.

7.4.1 Rejection

Rejection refers to the degree to which an illness is rejected as an aspect of an individual’s identity (Charmaz, 1995). Illness is seen as a threat and unacceptable to the self (Oris et al., 2016). Rejection of illness may be described as ‘struggling against illness’ (Charmaz, 1995, p.663). In struggling against illness, illness is seen as an enemy and apart from the self (Charmaz, 1995). Therefore, patients do not accept illness, or any restrictions imposed by illness and are focused on regaining their former selves. Illness rejection has been found to be negatively associated with treatment adherence in patients with diabetes and asthma (Adams and Jones, 1997, Tiden, Chapman, Sharples, 2005, Oris et al., 2016). Previous studies indicate that, rejection facilitates poorer physical and psychological states in chronically ill patients (Oris et al., 2018, Van Bulck et al., 2018). Therefore, rejection is considered a mal-adaptive illness identity (Van Bulck et al., 2018). The majority of qualitative studies exploring the self and chronic illness have projected rejection as a phase that chronic patients traverse, while considering/progressing to other illness identity states (Clarke and James, 2003, Yoshida, 1993, Ashbring 2001, Richardson, 2005). However, Adams and Jones, (1997) interviewed thirty patients with asthma and described how a group of patients classified as “deniers” by the authors absolutely rejected the identity asthma sufferer. In the current study, rejection represents an initial denial of the presence of CLBP by patients; followed by rejection of the perpetuity of CLBP by patients. It also represents a protracted/permanent illness state, which could be solely nullified by a cure. Rejection of the perpetuity of CLBP was facilitated/reinforced by most HCPs.

In the present study, rejecting the presence of illness was underpinned by the sociocultural belief that the patient's ailment was benign or temporary. This led to ignoring symptoms, prolonged self-medication (with local spices, over the counter analgesics and herbal medication), and late hospital presentation. Similarly, Charmaz (1995) describes how chronically ill patients may choose to "ignore or minimize illness" as a way of maintaining a coherence between self and body. Furthermore, Charmaz (1995) indicates that the process of adapting to impairment begins with how impairment is defined. In the present study, most patients and HCPs defined the experience and management of CLBP within a reductionist biomedical/acute illness framework. This implied that the experience and treatment of CLBP followed a linear model of structural diagnosis, treatment and cure (Tamm, 1993, Gatchel, 2015). It appears that the biomedical/biomechanical beliefs of patients and HCPs impelled a rejection identity, particularly, the rejection of CLBP as a life-long aspect of the self.

All the patients recounted receiving a structural diagnosis (as visualized through imaging) and passive therapies (such as medications and electrotherapy for prolonged periods), pending complete resolution of CLBP. In the current study, structural diagnosis sometimes fostered rejection. The patients viewed the defects as a dent on the self, a threat to optimal physical health, and thus a threat to accomplishing other important self-concepts. For some patients, restored structural defects were perceived as an objective measure of cure. The patients did not accept the defects as a part of the self, which points to illness rejection. Conversely, previous studies assessing identity and chronic pain (Yoshida, 1993, Miles, Curran, Pearce et al., 2005) suggest that diagnosis may facilitate integration of illness as part of the self, especially in illnesses such as fibromyalgia or chronic fatigue syndrome which have been described as 'contested and stigmatized' due to their complex pathophysiology and presentations (Clarke and James, 2003). Furthermore, the emphasis on a cure and the dependence on passive treatment strategies by HCPs and patients are incongruent with chronic illness management models (van Erp et al., 2019), suggesting rejection of a chronic illness identity. Contemporary chronic illness management models emphasize self-management, patient empowerment and long-term active management approaches (Gatchel, 2015, O'Sullivan et al., 2018).

A recent study by Van Bulck et al., (2018) found a link between illness identity and healthcare visits. They suggested that patients with congenital heart disease who scored higher on the rejection and engulfment scales of the illness identity questionnaire were more likely to utilize healthcare services. However, the current study suggests that HCPs facilitated and reinforced rejection and engulfment identity states in patients with CLBP. The influence of HCPs is detailed in section 7.3.5.

Some authors (Leventhal, Halm, Horowitz et al., 1999, Oris, Luyckk, Rassart et al., 2018) have suggested that more severe symptoms may result in illness being rejected and rejection may be used as a defense mechanism, or as a way of ensuring that patients' pre-morbid identities are not denigrated or affected. Similarly, in the current study, some participants demonstrated rejection of the chronic illness identity because they wanted to maintain their social identities as spouses, professionals or parents. They believed that an illness identity was incompatible with their pre-formulated social identity. Previous studies have indicated that money plays a crucial role in the experience of chronic illness and illness identity formulation, as it allows flexibility with relinquishing some self-concepts (e.g., work) (Charmaz, 1995, Albrecht, 1992). In the current study, working to earn an income was tied with patients' social identities as parents and spouses. Patients' narratives suggested that financial implications associated with relinquishing self-concepts motivated alignment with a rejection identity. Whilst previous studies have claimed that older participants were more likely to obtain higher rejection scores (Oris et al., 2018), in this study it was the converse. It appeared younger participants (<40 years) were unequivocally drawn towards the state of rejection, without any indications for the possibility of acceptance of CLBP as a part of the self, as CLBP was believed to be a disease related with ageing.

According to Charmaz (1991), until patients with chronic ailments embrace their illness and the changes associated with illness as chronic, they continue to search for recovery and therefore separate their illness from their self-concepts, without finding common grounds for progression. The state of rejection embraced by patients, which was cemented by biomedical/biomechanical beliefs, served as a basis for the next identity state (engulfment) which is discussed below.

7.4.2 Engulfment

Engulfment refers to the dominance of illness on the self, causing a dissonance between the body and self (Charmaz, 1995; Oris et al., 2016). Engulfment means illness is centrally placed and all other self-concepts (e.g., work, relationships) become subservient to the illness (Morea, Friend, Bennett, 2008). HCPs and patients in the present study upheld maladaptive beliefs and practices which resulted in an engulfment state. In some instances, the back was believed to be at the core of all activity performance and movement and therefore problems in the back meant the physicality *in toto* was affected. This translates into an engulfment state (Morea, Friend, Bennett, 2008). Relationships between perceptions of bodily/activity performance and identity have been documented in previous research (Goffman, 1963; Miles et al., 2005). Miles et al., (2005) interviewed twenty-nine persons with chronic pain. They found that 'bodily constraints': constraints with previously taken for granted/spontaneous activities (such as movement) affected peoples' sense of self and their participation in social activities.

Evidently, all the patients in the present study had received 'legitimate' structural diagnoses and biomechanical causes of their CLBP from doctors and physiotherapists. According to Bury (1982) "legitimacy raises a new set of problems, involving a re-evaluation of the relationship between the new visible disease and self-hood" (p. 172). In the current study, biomedical and biomechanical causes/diagnosis meant patients and HCPs had to evaluate the structural defects/biomechanical causes and adjust the body and self in order to minimize or eliminate CLBP. Re-defining oneself, altering identity goals and relinquishing some self-concepts are believed to be required courses of action in the experience of chronic illness (Bury, 1982, Charmaz, 1995). However, the re-definition suggested by HCPs and maintained by patients in the current study were often restrictive and unwarranted per the current evidence on CLBP management (Lin et al., 2020). Treatment and coping strategies utilized by the present study participants encouraged the culture of living solely for illness (Charmaz, 1995) and thus a state of engulfment. Some patients in the present study opined that, coping strategies (such as stopping work) undermined their sense of self. Charmaz (1995) however intimates that the re-definition of self or adaptation to impairment must be acceptable to the self and society (Charmaz, 1995).

Following interactions with HCPs, the patients in the present study reported a new awareness and the need for momentary and permanent adjustments to ensure cure and prevention of future occurrences. These adjustments were corroborated as strategies prescribed for management of CLBP by the participating HCPs in the current study (HCPs role on patients' identity formulation would be discussed in section 7.3.5). Patients reported how (after interaction with HCPs) the back was given the foremost priority during performance of activities or assumption of certain postures. They reported varied fear-avoidance beliefs (avoidance of perceived 'harmful' postures and activities). However, these perceived 'harmful' postures and activities constituted important work and daily life tasks. Therefore, patients had to relinquish important self-concepts due to their acquired beliefs and not necessarily impositions caused by CLBP.

The rejection identity adopted by participants was closely related to the engulfment identity, because patients' beliefs concerning the prognosis of CLBP directed coping strategies. Almost half of the participants (HCPs and patients) in the present study being inclined towards a cure, avoidance and modification of activities were viewed as interim measures, pending recovery. They believed that once recovery was achieved, 'a normal life' could be restored. This appeared to facilitate HCPs' proposal and patients' uptake of extremely restrictive measures that ensured every other important aspect of the patients' life (work, relationships, and finances) was determined by CLBP. Suspension of every aspect of patients' lives (work, hobbies, relationships) pending recovery or healing was evident in participants' narratives. This is described as biographical suspension by Lin et al., (2013). Avoidance and modification were sometimes viewed as permanent measures (e.g., avoidance of lifting heavy loads) that would help prevent worsening and recurrence. Therefore, acquired beliefs from interactions with HCPs compelled patients to consider permanently restrictions, which were not necessarily imposed by CLBP. Miles et al., (2005) identified that persons with chronic pain may seek to maintain a 'normal life' by avoiding situations that would create room for their short-comings or difficulties with performing activities to be noticed. Some studies have suggested that engulfment may be linked with the presence of more severe symptoms, because having severe symptoms may increase tendencies to be overwhelmed and thus engulfed by their illness (Leventhal et al., 1999, Luyckx, Rassart, Aujoulat et al., 2011). However, in the present study, the patients indicated that biomedical and biomechanical beliefs gained from interactions with HCPs drove decisions to avoid and withdraw from activities as opposed to seeking to avoid stigmatizing gazes or severity of CLBP.

Although identity is a multifaceted construct, studies on chronic illness and identity indicate that patients regard work and relationships as important constructs of identity (Charmaz, 1995, Miles et al., 2005). Furthermore, Charmaz (1983) portends that people's interactions within the sociocultural environment preserves the self. These social interactions include work, hobbies, relationships and group memberships. Therefore, strategies that consistently sever or reduce these social interactions potentially undermine the self and deepens the loss of self. Subsequently this affects the process of re-unifying the body and the self, thereby facilitating maladaptive illness identity states such as engulfment.

In accordance with the traditional biomedical framework of disease (Tamm, 1993), the patients (after HCPs' interactions) reported dependency on HCPs for treatment. HCPs (especially physiotherapists) in the current study reported prescription of multiple treatment sessions, facilitating patients' dependency on HCPs. These in some instances prevented patients' from fulfilling other important self-concepts such as domestic/paid work and childcare activities. The endless search for cure (rejection) and engulfment resulted in financial constraints for most of the patients. The patients partook in some sort of misinformed health consumerism: they visited any facility or took in medication that was proposed by self-acclaimed herbal medicine practitioners, alternative medicine practitioners, family, friends and healthcare practitioners in their quest for a cure.

Considering the above discussions, in the current study, engulfment can be described as a protracted/permanent state deemed necessary for recovery or prevention of recurrence/worsening. The adoption of more adaptive illness states such as acceptance will be discussed in the subsequent section.

7.4.3 Acceptance

Acceptance describes an illness state where coherence between illness and other important self-concepts is achieved (Charmaz, 1995). Although illness is acknowledged, individuals are not overwhelmed by their illness (Oris et al., 2018). In the current study, acceptance was not commonly adopted by participants. Although five patients in the current study indicated acceptance of their condition as chronic, only three out of these five patients can be described as having adopted an acceptance identity. These three patients suggested they had resolved to experience the daily effects of CLBP, go with the flow of it, listen to their bodies and maintain activities as much as possible within the limits permissible by CLBP (Charmaz, 1995). Thus, they depicted integration of CLBP and establishing coherence between body and self (Oris et al., 2016). This is described by Charmaz (1995) as "struggling with illness" (p. 663) or "surrendering to the sick body" (p. 672). Charmaz (1995) emphasizes that surrendering does not mean giving up or being overwhelmed by illness. Indeed, the patients whose narratives depicted acceptance reported how they maintained paid and domestic work and adjusted tasks when the body was unyielding. They believed that they had gained understanding of the impaired body and how to function in roles that constituted their identities. Furthermore, these patients reported that they resorted to medical care during flare-ups. This depicts that they were not ignoring CLBP but seeking to live with CLBP in a way that ensured an effective balance between the body and self.

It is worthy of mention that these participants also alluded to adhering to biomechanical/biomedical advice suggested by HCPs. However, they acknowledged the limits presented by CLBP without necessarily putting important aspects of their lives on hold or being overwhelmed by their pain. Acceptance was self-motivated by patients in the current study. HCPs narratives did not suggest facilitation of an acceptance identity neither did patients report that HCPs influenced their resolve to accept CLBP without necessarily feeling overwhelmed. Although acceptance requires a personalized and internalized commitment, social contexts, and demographic characteristics (such as age, gender, work and relationships) may contribute to the process of acceptance (Charmaz, 1995). Since acceptance is viewed as an internalized and active process, personal and acquired beliefs may play a role in promoting acceptance (Adam and Jones, 1997). HCPs in the current study appeared to concentrate on the disease rather than the person as pertains within medical models that do not offer a holistic approach (Tamm, 1993, Gatchel, 2017). One of such models, the biomedical model, was the dominant approach reportedly utilized by most HCPs who participated in the current study. This could contribute to HCPs not promoting acceptance.

Given that only three participants reported acceptance, it limits the possibility for making substantial inferences. However, the participants who described acceptance illness states were either older participants (>60) and/or had experienced CLBP for over a long period (>10years). Previous studies on illness identity in adolescents with type 1 diabetes (Oris et al., 2018) and adults experiencing varied chronic ailments (Sparud-Lundin, Öhrn, and Danielson, 2010) have similarly reported that patients who had lived with chronic illness for a longer period accepted it because they had learned to cope. Also, Leventhal et al., (1999) suggested that patients with less severe symptoms may not be overwhelmed by their illness and thus easily accept their chronic ailment. However, the three participants in the current study who described acceptance illness states recounted periods of severe symptoms such as inability to move when their current severe episode started. These three participants were retired/could work remotely, did not report financial constraints resulting from CLBP and recounted they had a dependable family support system. Perhaps these factors may have contributed to adoption of acceptance states. Social support, especially familial or spousal support, has been credited as one of the important aspects that positively affects experience of chronic illness and illness identity construction (Charmaz, 1983, McKillop et al., 2015). The availability of support allows for broader choices concerning roles/identities that could be relinquished or altered to accommodate the impaired body and this promotes acceptance (Charmaz, 1995).

The absence of an enrichment identity and the introduction of the concept of liminality as an illness identity domain in the current study will be discussed in the subsequent section.

7.4.4 Liminality

None of the current study participants' narratives suggested an enrichment identity. Enrichment refers to positive changes or an enhanced state of self, resulting from the experience of chronic illness (Oris et al., 2018). Positive changes could include greater appreciation of life, increased personal strength or interpersonal relationships and altering priorities (Tedeschi and Calhoun, 2004). Enrichment is normally associated with considerable stressors, in the case of illness, severe illness experience (Helgeson et al., 2006). Although considerable stressors were reported by some of the patients in the current study, narratives of enrichment were absent. Previous studies exploring chronic illness and identity have all reported that some patients accepted chronic illness and were enriched (Van Bulck et al., 2018, Oris et al., 2016, 2018, Miles et al., 2005, Richardson, 2005, Clarke and James, 2003, Ashbring, 2001), although patients may oscillate across the different illness identity states (Yoshida, 1993). However, in the present study, the patients were primarily stuck in the rejection and engulfment identities and acceptance did not proceed to enrichment. It is to this end that liminality is proposed as an illness identity state in the present study. Patients' social identities and HCPs are proposed as factors that drive the state of liminality among patients in the current study.

Although illness experience begins as a disruption and threat to identity, illness also requires transformation (Bury, 1982). This transformation starts with integration of illness into the self (acceptance) and acceptance gives room for positive changes associated with illness (enrichment) (Charmaz, 1999). This study draws on liminality as defined by Turner (1967) following on from initial work by van Gennep (1909). Liminality refers to the mid-stage in the process of change or a rite of passage (Turner and Turner, 1978). In his book, the Forest of Symbols, Turner (1967) defines liminality as a period of being "neither one thing nor the other, or maybe both, neither here nor there or maybe even nowhere and at the very least betwixt and between" all lawful, cultural or natural classifications and identities. Liminality denotes a state of confusion, ambiguity and paradox (Honkasalo, 2001). During a period of transition or change, individuals may find themselves in a position of no longer in the old state but not yet in the new state (Turner and Turner, 1978). They become liminal beings (Turner 1967). Individuals are viewed as having reached a limen (threshold) between the old and new state (Jackson, 2005). Originally, liminality was proposed as a transient period, but other studies indicate that liminality may become protracted (Honkasalo, 2001, Brown, Huszar and Chapman, 2017). Given that liminality is not characterized or classified within the norm, it is mostly viewed as a negative element that seeks to disrupt the normative social order (Jackson, 2005). However previous studies explaining the experience of chronic pain (Honkasalo, 2001) and the sick role (Lewis, 1975) within the framework of liminality indicate that liminality may provide stability and hope. The current study maintains that patients remained in a protracted state of liminality. This impeded the possibility of incorporating the impaired body into life and self in socially and personally acceptable ways (acceptance) (Charmaz, 1995) and achieving positive illness gains. Similarly, a study by Saunders, Bartlam, Artus, et al., (2018) explaining the experience of sciatica in the context of biographical suspension and liminality suggests a 'sustained liminality of self' characterized by inability to fully align with pre/post illness identities which may foster adverse psychological impact. The current study differs from the study by Saunders et al., (2018) considering the indications of oscillations between identification with pre/post illness states as opposed to the limited acceptance and concentration on rejection and enrichment found in this study.

In the current study, the paradox, neither here nor there, yet in both, that is associated with liminality was evident in patients' and HCPs' narratives. Most patients in the current study had lived with CLBP for considerably long periods, been in protracted states of seeking cure (rejection) and unduly restricting the body and self as directed by HCPs (engulfment). Yet, they considered their ailment as not chronic (one that would have a definite endpoint) due to their non-negotiable social identities and the influence of HCPs. They were hoping that the stage of liminality would end with a reversal into their old states. Moreover, patients did not align with a new identity that allows for coherence between the impaired body and self and achieving illness gains. Yet, they altered the self: patients readily altered postures and activities temporarily or permanently as proposed by HCPs. Patients acknowledged that a 'new temporary/permanent self' had been imposed by CLBP. They were in a liminal state: stuck in the rejection and engulfment identities, awaiting a cure. Most HCPs in the current study considered CLBP as a life-long condition. However, the coping and treatment strategies suggested by HCPs were incongruent with chronic pain management models (van Erp et al., 2019, O'Sullivan, Caneiro, O'Keeffe et al., 2018) but fitted better within an acute illness model. This presents HCPs as also 'neither here nor there'. The invariable biomedical approach adopted by most HCPs in the present study facilitated patients being stuck in rejection and engulfment.

On the other hand, the three patients who reported acceptance identities did not report positive changes resulting from illness. As these patients reported that they visited HCPs during flare-ups, it meant that HCPs were a key feature of the social context of their illness. The narratives of HCPs in the current study however suggest that they upheld dominant biomedical beliefs. Biomedical beliefs however impede the appreciation of illness within a positive light and encourage viewing illness as a threat, since the biomedical model principally requires that illness is identified, eradicated and normality restored (Tamm, 1993). Therefore, interactions with HCPs may have underscored patients' inability to embrace enrichment.

It is necessary to mention that all the studies around chronic illness and identity that reported acceptance and enrichment were conducted in developed countries. Therefore, the patients in the previous studies and those in the current study experienced their illness within different sociocultural contexts. Sociocultural contexts (including available social support) may contribute to the adoption of positive illness states. In addition, the current study depicts that interaction with HCPs shape the formation of illness identities among patients with chronic ailments. Therefore, the influence of HCPs may contribute to differing illness identities among chronically ill patients in different geographical regions. The next section delves into HCPs as objects of power and how these 'powerful' entities influenced illness identities of patients in the current study.

7.5 Panoptic Surveillance: The Influence of HCPs

Mead (1934) situates the self as a product of reflexive interaction with others. Illness identity formation involves a dynamic process of interaction between individuals and the social context of illness (Charmaz, 1995). In the case of the study participants, the HCPs' interaction served as an important social interaction that helped navigate understanding and facilitated sense making of their identities and thus formulation of an illness identity. Foucault is noted for postmodernist views of the self as a reflection of power relations that act on it (Reeve, 2002). Foucault (1979) emphasizes that the self is constructed through powerful "external surveillance" (the gaze) and internal discourses of "self-policing and self-surveillance". Foucault following from Bentham's invention of the panopticon prison (a prison architecturally designed to ensure prisoners are observed, without the observer being noticed), indicated that panoptic surveillance (being placed under observation such that it impossible to tell whether one is being observed or not), results in character transformation through self-surveillance (Foucault, 1979). Self-surveillance is compelled through the feeling of being under continuous observation (Foucault, 1979). With self-surveillance, individuals become 'subject' to the forces that seek to control their behaviour and are compelled to act in accepted ways (Foucault, 1982). The panopticon permits enactment of an unapparent and subtle disciplinary power through observation, examination and normalizing judgment (Foucault, 1979). In addition, Foucault's technologies of self imply that the self is a product of interactions with powerful discourses which generate "self-knowledge". Knowledge generated then becomes espoused as a truth about the self (Foucault, 1982).

In medicine and healthcare, the self is impacted upon through powerful discourses of dominant biomedical knowledge which inscribes upon an individual a healthy versus ill status (external gaze) (Fox, 1995). Health professionals further provide strategies for self-discipline to ensure normative standards of the self are maintained (Brown, Huszar, Chapman, 2017). The significance of health, the fear of disability and death become drivers for self-surveillance in patients and thus maintenance of required regimen prescribed by healthcare professionals (Couch, 2020).

Applying Foucault's sociological conceptualization to the present study, HCPs may be portrayed as 'powerful' entities who drove identity transformation and thus illness identity formation. HCPs in a place of power contributed to the construction of patients' self-knowledge, constituted mainly of biomedical, biomechanical and mal-adaptive beliefs and practices. The expectation of paternalism by the patients and a paternalistic approach utilized by HCPs in the current study inevitably deepens HCPs' powerful states. Patients' newly acquired knowledge about the self, shaped their illness identities. HCPs as powerful and knowledgeable entities in the field of health (Brown, Huszar and Chapman, 2017) influenced patients' inclination towards rejection and engulfment identities and subsequently a state of liminality. The internal discourse of self-surveillance was also evident in patients' narratives as they adhered to biomechanical precautions and even espoused stringent approaches, not directly suggested by HCPs (such as suspending work) due to acquired knowledge from HCPs. HCPs in the current study could be described as powerful entities who facilitated/reinforced mal-adaptive illness identity states. The subsequent sections discuss the dominant concept derived from HCPs' data (professional identity), using social identity approach as an interpretative framework.

7.6 Professional Identity

Professional identity was identified as a central casual mechanism underlying HCPs' beliefs and practices. Professional identity may be described as the extension of notions of identity into professional spheres (Ibarra, 1999). It is described as the definition of the self, according to professional attributes, values and beliefs (Ibarra, 1999). Individuals aggregate to form professions and organizations and therefore inter and intra group dynamics are an aspect of professional working (Haslam, 2012). Consequently, research exploring professional identity is likely to reveal how social identity is enacted between and within professional groups. In addition, Willets and Clarke (2014 p.165) suggests that after professional training within institutions, enculturation into the work environment starts and professional identity becomes a "complex social activity". Professional identity may be considered as a result of psychological processes and not simply a spontaneous accomplishment (Burford, 2012).

Therefore, social identity approach (SIA), a theory of social psychology that describes the mechanistic underpinnings of group processes (Haslam, Reicher, Reynolds, 2014), will be used as an explanatory framework of how participants' construct and maintain their professional identity. SIA facilitates explicit interpretation of the nature of professional identity, inter-professional tensions and the influences and consequences of group membership (Burford, 2012). This research contends that social identity approach is relevant for understanding the inter/intra-group processes and contextual factors underlying professional identities of doctors and physiotherapists in the management of

CLBP. The next section describes SIA concepts and subsequent sections would demonstrate the application of SIA to the current research findings.

7.7 Social Identity Approach

Social identity refers to people's self-concepts which are formed through group membership ("the we") (Tajfel and Turner,1979). Social Identity approach (SIA) derives its underpinnings from social identity theory (SIT) (Tajfel and Tuner, 1979) and self-categorization theory (SCT) (Turner et al., 1987). In his pioneering work on social identity, Tajfel (1978) identified the effect of group membership on people's self-conception and biases even when only little meaning was attached to the groups and no benefit was attached to group membership. Subsequently SIT was borne by Tajfel and colleagues as a theory of intergroup behaviour, demonstrating tendencies towards in-group favoritism and out-group discrimination (Tajfel, 1978, Tajfel and Turner, 1979). SIT recognizes that groups operate with different levels of status and power (Hornsey, 2008) and inter-group comparisons are made between relevant out-groups (Hogg et al., 1995). According to Haslam (2004) groups are inherently a source of social influence. Self-categorization theory (SCT) is considered as a further explanatory model of SIT (Hogg, Terry, White, 1995). SCT seeks to describe the mechanisms underpinning the processes and consequences of identification with a group (Turner and Reynolds, 2012). While SIT proposes that individual (personal) and group (social) identities are on opposite ends of a continuum (Hogg et al., 1995); SCT portends that there are abstracted levels of identities (personal, social and human levels) (Turner and Oakes, 1997). SCT contests the deterministic/simplistic binary positioning of personal and social identity stipulated by SIT (Hogg and Terry, 2000). SCT emphasizes that identity vacillates between the intergroup and interpersonal continuum; and salience of a particular identity determines the prominent identity at a particular time (Turner and Oakes, 1997). Both SIT and SCT emphasize that the adoption of personal or social identity is dependent on salience and context (Hornsey, 2008). Furthermore, SCT proposes that as individuals identify with particular social categories, a cognitive process of accentuation occurs (Turner et al., 1987). Accentuation involves a heightened perception of the similarities within and differences between social categories (Haslam et al., 1995). Social identity salience and associated accentuation then leads to "depersonalization": the self increasingly becomes a reflection of group characteristics and norms rather than personal characteristics (Hogg and Terry, 2000). Consequently, depersonalization facilitates enactment of shared norms, beliefs and practices of a group (Turner and Reynolds, 2012). To incorporate both social identity theory and self-categorization theory, the term social identity approach was adopted (Hornsey, 2008).

SIA emerged as a theory of inter-group processes that explain psychological processes underpinning the motivation of groups to maintain a positive social identity (Haslam, Reicher, Reynolds, 2014). SIA is considered an explanatory theory of social influence, group cohesiveness and conformity amongst others (Abrams and Hogg, 1990). SIA explores how individuals view themselves and others as social categories and ways in which this affects individual perceptions, attitudes, and behaviour (Weiss et al., 2015). SIA is fundamentally concerned with how self-concept is derived from specific collective contexts (Tajfel and Turner 1979; Turner et al., 1987). Since its inception, SIA has been used within diverse fields of research (including organizations, leadership, health, crowd conflict & management, conformity and socialization among peers, prejudice and stereotyping) (Haslam, Jettem, Posmes, et al., 2009). Systematic reviews by Kreindler, Dowd, Star et al., (2012) and Haslam et al., (2009) have provided detailed accounts regarding the contribution of SIA to understanding and explaining group processes in health. These include communication, multidisciplinary working, rehabilitation, clinical assessment, coping and depression. The next section discusses the major intra-group process that was identified in the participants' narratives.

7.7.1 Intra-group Processes within Doctors and Physiotherapists

Although factors such as training contribute significantly to health professionals' social identity (professional identity) (Willets and Clarke, 2014), the current study suggests identification with work colleagues and the work environment as the most proximal indicator of HCPs' social identities. In healthcare, socialization is considered a central tenet of professional identity formation (Viktoria and Joynes, 2018). According to Sawatsky, Santivasi, Nordhues, et al., (2020 p.617), professional identity formation is "an adaptive developmental process" that includes the individual's psyche and socialization into collective norms and patterns. Similarly, in the present study, the collective narrative of 'we' was prevailing, suggesting a process of socialization within the work environment. Indeed, this socialization was explicitly expressed by participants, as medicine was described as an apprenticeship requiring 'on the job learning' and socialization. Ashforth and Meal, (1989, p.21), intimate that the psychological categorization of 'we' as opposed to 'I' creates a perception of "oneness with or belonginess to some human aggregate". One of the strengths of SCT lies in its ability to elucidate intra-group processes (Haslam et al., 2009). Thus, SCT provides an appropriate framework for interpretation of the intra-group socialization acknowledged by participants and the consequent adoption of group norms and practices.

HCPs (such as doctors and physiotherapists) are regarded as a group of professionals who possess a strong professional identity (Kreindler et al., 2012). A strong professional identity enhances group salience, identification and subsequently depersonalization (Kreindler et al., 2012). Doctors and physiotherapists in the current study demonstrated their niche as professionals through their descriptions of unique tacit and scientific knowledge that were reinforced through socialization within the work environment. Identification with a unique body of knowledge enhances acquisition and establishment of professional status (Fuller, 1978). French sociologists, Jamous and Peloille (1970), however described the relationship between possessing predetermined technical knowledge and skills (technicality) and indefinable/uncertain knowledge and skills (indeterminacy). Technicality is dependent on science and research whilst indeterminacy is dependent on individual clinical expertise, experience and judgment (Traynor, 2009). According to Jamous and Peloille (1970), a high indeterminacy/technicality (I/T) ratio increases professional status and autonomy as the professions' body of knowledge becomes increasingly unique and therefore cannot be easily predictable, exposed and controlled by external agents. The doctors and physiotherapists in the current study often demonstrated possession of technical (e.g., analgesics prescription, electrotherapy/heat therapy) and indeterminate (e.g., assessment, diagnosis and managing each patient distinctively) knowledge primarily situated within a biomedical/biomechanical and paternalistic paradigm.

In the context of SIA, the dominant identity content (group norms) collectively shared by physiotherapists and doctors in the current study was a biomedical/biomechanical and paternalistic approach. In other words, they defined their social identity in terms of a biomedical model and paternalism. Through the process of depersonalization, biomedical/biomechanical and paternalistic approaches became ingrained as prototypical group characteristics that served to enhance their distinctiveness and self-worth as health professionals. Therefore, these were internalized and formed the basis for HCPs' beliefs and patient care. As explicated by Abrams and Hogg, (2000), in SIA, group norms are internalized through identification with a group and thus these norms affect the working behaviour and attitudes of professionals and are accepted as a descriptor of the group. Furthermore, participants in the present study identified with some maladaptive beliefs and practices (e.g., fear-avoidance beliefs, prolonged medication, and electrotherapy) which contrasted with existing CLBP management guidelines. These beliefs and practices were either adopted or reinforced through socialization at work; and these informed CLBP management. In the present study, identifying as doctors or physiotherapists and the associated socialization within the work environment served to propel a sense of collectiveness and social identity. According to Burrage and Torstendahl (1990), the social/professional identity adopted by professionals serves to drive common working boundaries, goals and regulation of professional conduct.

The effect of socialization within the work environment as described by the current study participants was also extended to the uptake of more active CLBP management approaches (specifically exercises). However, there were instances where participants reported challenges with uptake of evidence-based approaches (such as non-prescription of sick leave and multidisciplinary working); resulting from incongruence of personally acquired evidence-based approaches with collective norms. This illustrates interaction of the levels of identities (personal, social, and human), suggested by SCT and the consequent struggle for salience that may arise in collective contexts.

SIA portends that the salience or adoption of a particular social identity is not only determined by internalized shared social identities but is also partly determined by perceptions of the social identities that are relevant/embraced within a particular social context (Steele, Spencer, Aronson, 2002). As paternalism and a biomedical model were expected by patients; adoption and salience of these approaches were enhanced. The next section describes the inter-group processes present within the narratives of the current study participants.

7.7.2 Inter-group Processes between Doctors and Physiotherapists.

In the context of this study, SIA (the sub-component, SIT) provides the explanatory framework for understanding group processes between physiotherapists and doctors. Narratives of in-group favoritism were manifested through doctors' reported preference for referrals to doctors who were specialists (in-group members) before consideration of an out-group (physiotherapists). Indeed, the doctors revealed that orthopaedic specialists mainly replicated procedures carried out by family medicine physicians. However, they were predisposed to initially refer patients with CLBP for specialist attention due to validated expertise. This reported dominant referral pattern of 'specialist before physiotherapist' may be understood via the lens of SIT.

Referral to other HCPs aside physiotherapy was almost non-existent, reinforcing the possibility of in-group favoritism. Within the Ghanaian context, other practitioners that may be involved with CLBP management are chiropractors, occupational therapists and clinical psychologists. However, lack of trust, classification of chiropractors as alternative medicine practitioners and the cost involved with chiropractic care were mentioned by a few participants as barriers to referral for chiropractic care. Doctors and physiotherapists are recognized globally as HCPs involved with CLBP management (Lim et al., 2019). However, in the present study, as intergroup differences were accentuated, some physiotherapists questioned the interest of doctors in CLBP management and suggested doctors provided inadequate diagnosis and late referrals. Similarly, although doctors acted as gatekeepers deciding on appropriate referral pathways for patients, they depicted limited knowledge around physiotherapy and CLBP; with some suggesting physiotherapy referrals for CLBP management may be a redundant process. These narratives suggest the possibility of out-group discrimination among the present study participants. Nonetheless, doctors' ignorance of the role of physiotherapy in CLBP may be due to limited collaborative working and physiotherapy visibility.

Studies in the field of SIA suggest that group members within a lower status group may seek to attain a positive social identity through various means (Tajfel and Turner, 1979). These include focusing on aspects that elevates the in-group or makes it comparable to the out-group (Tajfel and Turner, 1979). Also, intergroup relations are affected by socio-historical contexts (Turner et al., 1987). Therefore, considering the historical context of medical dominance within the health professions, adoption of a biomedical model by physiotherapists in this study may be partly explained by the desire to be on a par with the higher status out-group (medicine). In addition, SIA suggests that groups maintain a positive social identity by preserving the group's favourable social identity and projecting the group above other relevant out-groups (Tajfel and Turner, 1979; Turner et al., 1987). Physiotherapists positioned themselves as 'biomechanical and CLBP experts' with indeterminate skills that went beyond analgesics prescription. More importantly doctors projected the dominance of medicine; evident in their roles as gatekeepers and suggestions of being all-rounded professionals capable of treating every disease. The next section discusses the power dynamics embedded within the healthcare practices of Ghanaian doctors and physiotherapists as indicated by the participants of this study.

7.8 Power Dynamics: Medical Dominance and the Health Professions

The theory around medical dominance was initially proposed by Freidson (1970). Aligning with the precepts of Freidson (1970, 1988), this study uses the notion of professional power to explain the dynamics of authority and autonomy reported by doctors and physiotherapists in the present study. Freidson (1988) suggested that medicine occupied the topmost position within the hierarchy of the health workforce, had autonomy over their practice and exerted autonomy and authority over all other health professions. Although criticized as a uni-dimensional theory, due to its inability to incorporate the dynamism within the health workforce, medical dominance has proven its tenacity over the years (Willis, 2006). Medicine has successfully navigated obstacles threatening its autonomy and authority and continued to maintain its position of power within the healthcare professions (Willis, 2006).

The health professions have been defined as a dynamic force with shifting boundaries, mainly dictated by professions in a higher state of power (Nancarrow and Borthwick, 2005). Medicine has historically possessed this power of controlling the evolution and practice boundaries of other healthcare professions (Freidson, 1988, Larkin, 1983). According to Nancarrow and Borthwick (2005) medicine may exercise its power by delegating less pleasing or perceived lower status jobs to other healthcare professions. This is exhibited in the current study as HCPs (doctors and physiotherapists) suggested that patients with CLBP were kept within the domain of medicine for considerably long periods before referral to physiotherapy was considered. Doctors' and physiotherapists' narrations depicted the concept of delegating the "dirty work" to lower status professionals (Hughes 1958). Indeed reasons (such as persistence, patients' desire for an alternative, concerns over prolonged analgesics use) that were reported by some doctors as motivation for physiotherapy referral suggests referral was initiated when CLBP became unyielding and patients continued to push for a cure. These reasons were not suggestive of doctors' perceived need for a multidisciplinary approach or efficacy of physiotherapy for CLBP.

Freidson (1970) proposed that medical dominance was underpinned by the interplay of political, technological and social factors. Freidson (1970) theorized a four-factor explanation of medical dominance over allied health professions:

- Doctors' control of the knowledge utilized by other professionals,
- Doctors' serving as supervisors and gate-keepers responsible for requesting other health services,
- Doctors' role in diagnosis and treatment,
- Maintenance of unequal status between doctors and allied health professionals.

Furthermore, Willis (1989) also identified four ways in which medicine dominates the other health professions: subordination, exclusion, restriction, and being all encompassing. In this study, the doctors reportedly played the all-important and powerful role of deciding who receives what care and when, thereby indirectly regulating the work of physiotherapists (gatekeeping, supervision, subordination).

The limitation with first-point-of-contact physiotherapy practice[12], coupled with patients' limited awareness of physiotherapy (as recounted in Chapter 4) deepens the 'powerful gate-keeping' position of medics with respect to CLBP care in Ghana. Moreover, a few doctors in the current study emphasized that family medicine practitioners had knowledge on every aspect of healthcare and therefore could prescribe exercises (all-encompassing doctors' role in diagnosis & treatment), depicting another approach to

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[12] According to the current study participants, first point of physiotherapy practice is limited to only patients who may wish to pay for physiotherapy services, without benefitting from the national health insurance scheme. First point of physiotherapy practice had not been formally institutionalized according to the physiotherapists.

medical dominance within the Ghanaian healthcare environment. These narratives also identify professional autonomy constraints of Ghanaian physiotherapists.

According to Freidson (1988), the critical indicator of professionalization is professional autonomy. Moreover, if doctors continue to directly or indirectly control the work of health professionals through gatekeeping, wielding authority and administrative powers, other HCPs cannot claim absolute autonomy. The external social structures (state and doctors) that implicitly determine the practice of physiotherapists may create restrictions, thereby threatening professional autonomy of physiotherapists (Ovretveit, 1985). In addition, the medical profession asserted its dominance and exclusive control of resources as HCPs in the current study described how processes such as sick leave and number of health-insurance covered physiotherapy sessions were determined by doctors. This is grounded in Freidson's 'occupational closure' (*Weberian inspired notions of social closure*) that describes how professions maintain their status and power by ensuring exclusive rights to privileged resources and aspects of a profession (Freidson, 1988). However, physiotherapists in the present study expressed the desire to expand their professional boundaries and enhance the professional autonomy of physiotherapists through first-point-of-contact-practice. This phenomenon of advocacy for occupational boundary expansion, while preserving professional boundaries, is grounded in Larson's description of 'professional project' (Larson, 1977).

The narratives of HCPs in the present study were extensively interlaced with notions of in-group favoritism, out-group discrimination, socialization, medical dominance and control, with physiotherapists expressing the desire for more autonomy and involvement in CLBP management.

7.9 Summary

Social psychology provided suitable frameworks that aided interpretation of the research data. The core category identified in the study was **Identity.** Illness identity and professional identity were identified as the branches of identity that pertain to the current research findings. This study built on illness identity research by Charmaz (1995) and Van Bulck et al., (2018); with Charmaz (1995) providing the main interpretative framework used to describe illness identity. The dominant influencing power of HCPs on patients' illness identities was interpreted using Foucault's notion of self-surveillance. The interpretations suggested that three (rejection, engulfment, acceptance) out of the four already established illness identity states were readily identified in the current study with a skewing towards maladaptive illness identity states (rejection and engulfment). These maladaptive illness identity states were protracted and influenced by HCPs and sociocultural beliefs. Acceptance was rare and enrichment was absent. Acceptance was facilitated by patients’ inherent beliefs. The concept of liminality was thus proposed as an illness identity state; accounting for the protracted nature of rejection and engulfment illness identities and the inability of patients to progress to more adaptive states.

SIA (constituted of SIT and SCT) provided an interpretative lens for analyzing the professional identities of HCPs and the group processes that existed therein. Socialization within the work environment was identified as the major intra-group process reinforcing biomedical and paternalistic care among patients and doctors. The impact of patients’ expectations of biomedical and paternalism was also mentioned. The research findings depicted narratives of in-group favoritism and out-group discrimination manifested through doctors’ patterns of referrals, HCPs’ assessment of the out-group’s involvement with CLBP management, HCPs’ descriptions of their respective and distinct roles as well as medical dominance. The power relations and how it affected CLBP management was assessed using Freidson’s concept of medical dominance

Chapter 8: Discussion and Conclusions

8.0 Introduction

The aim of this research was to develop a socio-culturally sensitive theoretical model of CLBP beliefs among Ghanaian HCPs and patients with CLBP (Figure 17, Chapter 7). Therefore, this research explored the CLBP beliefs of patients and HCPs and how these beliefs influenced CLBP management in Ghana. Specific objectives included exploring patients', doctors' and physiotherapists' beliefs on CLBP and its causes, management approaches and coping strategies. Patients' accounts of their CLBP journeys also highlighted the adverse psychosocial impact of CLBP.

This chapter begins with a summary of the research findings. The findings address the aims and objectives. Section 8.2.1, 8.2.2 and 8.2.3 summarize the CLBP beliefs of patients', doctors' and physiotherapists' respectively and the mechanisms underlying these beliefs. Section 8.2.4 summarizes the core-category, concepts and central mechanisms (the theoretical model) that underlie patients', doctors' and physiotherapists' CLBP beliefs and management.

8.1 Summary of Results Chapters

8.1.1 Summarizing Chapter 4: Transitioning from Biopsychosocial Perspectives to Biomedical Perspectives: Patients' Beliefs Regarding CLBP and its Management

Patients reported performance of daily activities, despite pain, until interactions with HCPs countered their prior notions. Active strategies and positive beliefs such as self-efficacy beliefs, spirituality as a source of hope and comfort and using exercises as a form of distraction were also practiced by patients and influenced by patients' personal convictions. Prior to physiotherapy treatment, patients believed physiotherapy was synonymous with massage or gym exercises, suggesting that patients believed physiotherapy may involve some active components. However limited knowledge and awareness of physiotherapy was generally evident in the patients' narratives.

The patients revealed biomedical beliefs which were centered on the need for biomedical causes and diagnoses. These beliefs were reinforced by HCPs through multiple imaging requests and providing biomedical diagnoses. Patients believed that structural defects (reported in imaging) resulted from falls, accidents and degeneration (overuse, ageing). Other biomedical causes reported by patients included poorly maintained roads, physiological roles of women (e.g., pregnancy). Half of the patients believed that the back was weakened due to CLBP. The patients' biomedical beliefs engendered a quest for cure. Posture and occupation were believed to be biomechanical causes of CLBP. ‘Wrong/bad’ postures, work/domestic activities involving wrong postures and increased back loading were believed to precipitate CLBP. These biomechanical beliefs were mostly introduced following interactions with HCPs. Maladaptive beliefs reported by patients included fear-avoidance beliefs, catastrophizing, unclear meanings attached to HCPs’ explanations of CLBP, confused causes related to food, malaria and hemorrhoids. Spirituality (evil deeds being perpetrated onto the CLBP sufferer by another individual) was also used to explain the cause of CLBP. FABs and sometimes catastrophizing were influenced by HCPs, while the other maladaptive beliefs were influenced by sociocultural beliefs. Mal-adaptive behaviours reported by patients included passive self-coping (prolonged use of herbs, spices, and analgesics), dependency on the healthcare system for passive physiotherapy and medical approaches (electrotherapy, heat therapy, massage, corsets, prolonged physiotherapy and analgesics prescription) and multiple health seeking consultations. The maladaptive behaviours were either influenced by sociocultural beliefs and/or HCPs.

However, prescribed exercises and pacing were attributed to HCPs’ advice; depicting that HCPs facilitated some active strategies. The psychosocial impact of CLBP was described in terms of: loss of self, gendered, domestic, work and social roles; emotional distress; fear of death and disability; stigmatization and marginalization and social support (caregiver burden). The psychosocial impact was affected by beliefs inherited through HCPs’ interactions, sociocultural beliefs and the socioeconomic impact of CLBP.

8.1.2 Summarizing Chapter 5: Bio-medical/mechanical Perspectives, Sociocultural Perspectives and Gatekeeping: Doctors’ Beliefs Regarding CLBP and its Management

The doctors’ narratives suggested various bio-medical/mechanical beliefs which were collectively shared (reinforced through work socialization). All, except two doctors, believed that there was always a ‘legitimate’ biomedical cause of patients’ CLBP (e.g., underlying pathology or structural deficit). Psychological risk factors for CLBP were absent in the doctors’ discourses. Biomedical causes were related to structural defects resulting from degeneration and trauma. Structural defects ascertained through radiological imaging informed patient diagnosis. Biomedical causes informed the commonest referral pathways utilized by doctors: neurosurgery and orthopaedic surgery. These referral pathways also reinforced biomedical treatment. Doctors’ beliefs about the possibility of a ‘cure’ for CLBP differed. A few believed CLBP could be cured, and some believed CLBP was a life-long condition, progressive or unpredictable. Biomechanical risk-factors were related to posture, domestic work, occupation and loading of the spine.

Maladaptive beliefs reported by doctors were related to the de-prioritization of CLBP, perceived significance of pain and FABs, and these were underpinned by HCPs' biomedical orientation and the healthcare environment (professional identity). Most doctors believed pain was the most important indicator in CLBP management, since function was dependent on pain-relief. Most doctors also appeared to prioritize other conditions over CLBP, due to perceived consequences of other comorbidities (e.g., hypertension). FABs (avoidance, suspension or modification of activities) were recommended as coping strategies. The evidence suggesting ineffectiveness of rest/sick leave was common knowledge among doctors. However, half of the doctors prescribed sick leave. Medication (analgesics) prescription was considered the doctor's main treatment for CLBP and was perceived as central to doctors' professional identity. The doctors' narratives suggested that they relied on their biomedical knowledge and collective protocols within the working environment to make decisions regarding patients' care, without incorporating patients' choices (paternalism). The doctors believed that some maladaptive practices were facilitated by patients (late hospital presentation and prolonged self-medication). The maladaptive practices appeared to be influenced by the patients' sociocultural expectation of passive therapies and paternalism, medical paternalism and doctors' professional identity.

Aside patient referral there was no form of collaboration between doctors and physiotherapists. Most doctors either referred to physiotherapy occasionally or sometimes. The doctors appeared to have limited knowledge regarding the scope of physiotherapy and other HCPs in CLBP management, although they were responsible for signposting patients to other HCPs. The limited knowledge and involvement of physiotherapy appeared to be influenced by fragmented care and limited physiotherapy visibility. Positive beliefs and active strategies were also present in doctors' narratives. Activity and exercises were considered as important in CLBP management by all the doctors. Some doctors desisted from prescribing sick-leave due to its documented ineffectiveness in the long-term. A few doctors also believed that they managed patients' expectations.

8.1.3 Summarizing Chapter 6: Bio-mechanical/medical Perspectives, Sociocultural Perspectives and the Role of Doctors: Physiotherapists' Beliefs Regarding CLBP and its Management

Similar to the doctors' accounts, the physiotherapists' narratives revealed: bio-medical/mechanical beliefs; maladaptive beliefs and practices; positive beliefs and active strategies; and limited physiotherapy involvement; awareness and knowledge. All the physiotherapists indicated there was always an identifiable cause for CLBP. All, except one, suggested lack of consideration of psychological factors. Bio-medical/mechanical beliefs were related to: biomedical causes (structural defects resulting from trauma and degeneration); biomechanical causes (posture, occupation and overloading spinal structures); and the possibility of cure. Radiological imaging was suggested as an important investigation and was commonly utilized to assist with identification of biomedical causes. There was no indication of interactions with doctors that went beyond referrals, suggesting lack of collaborative working between physiotherapists and doctors in CLBP management. CLBP was considered a life-long condition by all participating physiotherapists. Bio-medical/mechanical beliefs were influenced by physiotherapists' biomedical orientation and professional identity.

Maladaptive beliefs described by physiotherapists were the significance of pain and FABs. The physiotherapists prioritized pain relief as the main treatment goal without giving indications of patients' involvement in goal setting. FABs described included the belief that pain equals harm and therefore painful activities should be avoided, suspended or modified. The maladaptive practices reported by physiotherapists included the prescription of multiple physiotherapy sessions that mainly involved treatment using passive therapies (electrotherapy, heat therapy, traction, massage). Furthermore, the physiotherapists indicated that management decisions were based mainly on physiotherapists' biomedical orientation and work socialization (professional identity). Physiotherapists believed that late referral from doctors and late hospital presentation by patients hindered CLBP management. The mechanisms underpinning physiotherapists' maladaptive beliefs and practices were physiotherapists' professional identity (paternalism, biomedical orientation and work socialization) and sociocultural expectations of paternalism and passive care.

The physiotherapists believed that the involvement of physiotherapy in CLBP was often late and inadequate. They believed that doctors and patients had limited knowledge on physiotherapy. Limited knowledge and involvement of physiotherapy appeared to be underpinned by limited physiotherapy visibility and fragmented care. Positive beliefs reported by physiotherapists were prescription of exercises, pacing work to manage performance of activities, the importance of collaborative working, and selective imaging requests. These were underpinned by physiotherapists' professional identity (biomedical orientation and work socialization).

8.1.4 Summarizing Chapter 7: Illness and Professional Identity: A Composite of Power, Group and Sociocultural Dynamics

Identity was derived as the central mechanism underpinning patients' and HCPs' beliefs in this study. Illness and Professional Identity were considered as the respective domains of identity relating to patients and HCPs respectively. Charmaz (1995) provided the main interpretative framework for the illness identities described in this study: rejection, engulfment, liminality, acceptance. Professional identity was discussed in relation to inter- and intra- group dynamics as described within the social identity approach (Tajfel and Turner 1979; Turner et al., 1987).

In this study, rejection of illness as part of the self (Charmaz, 1995) was adopted by most patients. Rejection was hinged on participants' biomedical beliefs and considered as a protracted state that could only be nullified by a cure. Rejection was influenced/reinforced by HCPs' interactions, the incongruence between patients' social identities and an illness identity and sociocultural beliefs. Engulfment: the dominance of illness on the self (Charmaz, 1995), was also commonly adopted by participants. Engulfment arose mainly from maladaptive beliefs and practices (e.g., FABs, catastrophizing) and biomedical beliefs which led to suspension or avoidance of work/leisure/social activities. Engulfment was also regarded by patients as a necessary state for recovery or prevention of recurrence/worsening of CLBP. Engulfment was facilitated/reinforced by HCPs. Acceptance, an illness identity state characterized by coherence between illness and other important aspects of the self (Charmaz, 1995), was adopted by only three participants. Acceptance was mainly facilitated by the patients themselves. These patients explained their personal resolve to experience the daily effects of CLBP and maintain activities as much as possible within the limits permissible by CLBP. Furthermore, there was no indication from HCPs' and patients' narratives regarding HCPs' facilitation of an acceptance identity. Liminality explains the paradox of 'neither here nor there or somewhere in between' (Turner, 1967) that existed in most patients' and HCPs' narratives. For instance, although participants had withheld important aspects of their lives for considerable periods, they did not regard their condition as chronic. Although HCPs considered CLBP as a chronic condition, CLBP management appeared consistent with an acute model of management (i.e., the biomedical model). Liminality also explains patients' inability to transition from maladaptive illness identity states (rejection and engulfment) to more positive illness identity states (enrichment and acceptance). Liminality was principally influenced by HCPs. Foucault's (1979) conceptualization of self-surveillance was used to theorize the subtle powerful positioning of HCPs and their influence on patients' beliefs and behaviours.

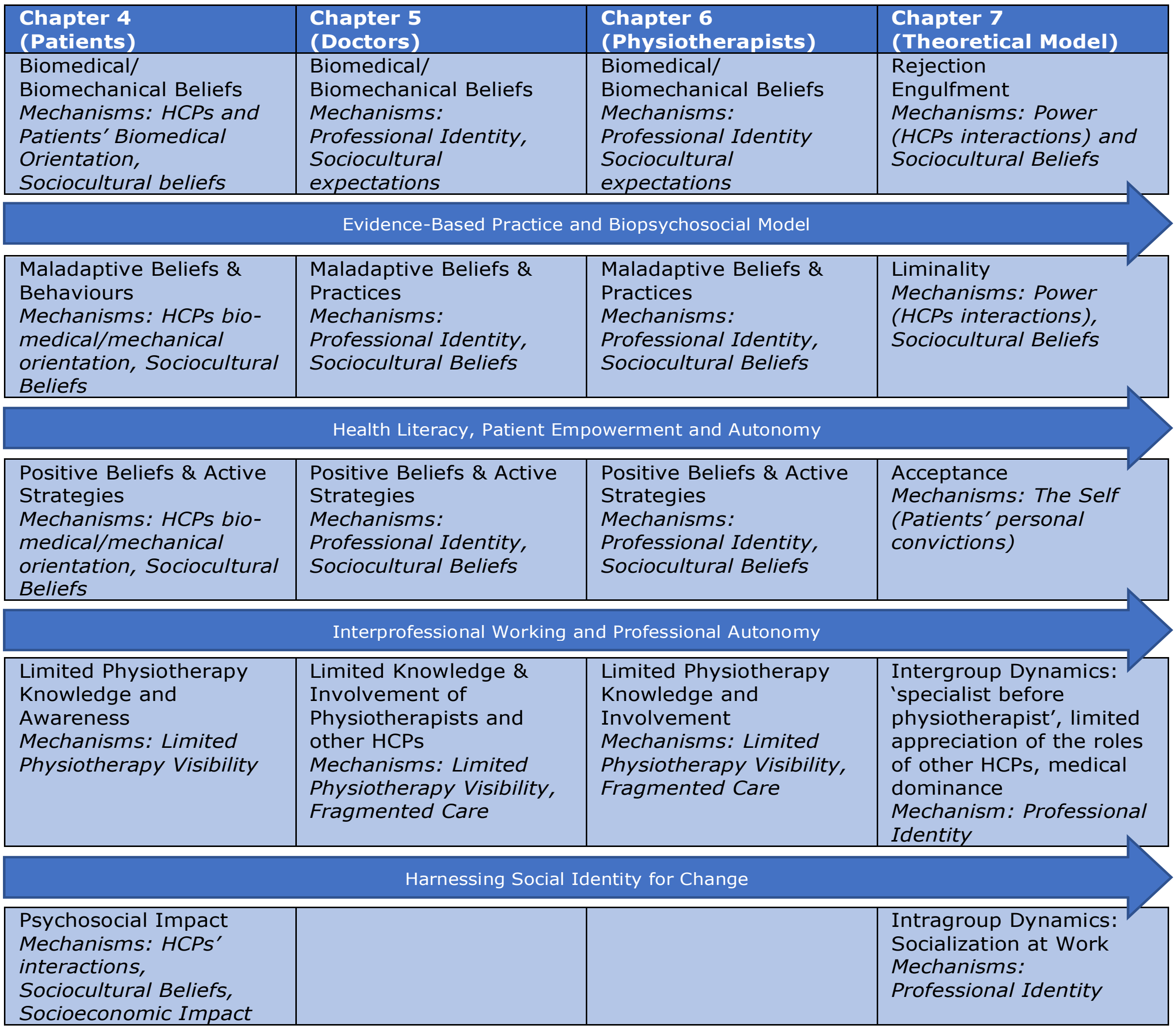
Professional Identity was mostly described in terms of doctors' and physiotherapists' biomedical orientation and paternalism, reinforced through work socialization. The sub-components of SIA (SIT and SCT) provided a framework for understanding the inter- and intra- group processes that existed between and within physiotherapists and doctors and how these affected CLBP beliefs and management. The main intragroup process that affected HCPs' beliefs and practices was socialization at work. SCT portends that as members of a group consistently perceive themselves as an in-group, depersonalization occurs which facilitates adoption of the group's dominant identity content (bio-medical/mechanical beliefs and paternalism) (Turner et al., 1987). Doctors and physiotherapists described the influence of the work environment on their management choices and reinforcement of biomedical beliefs. SIT suggests that identification with a group may lead to in-group favoritism and out-group discrimination (Hogg and Abram, 1988). In this study, the identified intergroup dynamics were the doctors' dominant referral pattern, 'specialist before physiotherapist', physiotherapists' reservations about the interest of doctors in CLBP management (inadequate doctors' diagnosis, late referrals) and medical dominance. Medical dominance as proposed by Freidson (1970) was used to theorize medicine's 'powerful' role within the Ghanaian healthcare system, as it pertained to CLBP management. This study revealed that medicine dominated through its gate-keeping role, suggestions of relinquishing the 'dirty work' to the lower status group (Nancarrow and Borthwick, 2005) and having an all-encompassing knowledge that permeated every area of healthcare.

This study depicts the mechanisms underlying the maladaptive illness identity states, HCPs' maladaptive beliefs and practices, biomedical beliefs and limited involvement of physiotherapists and other HCPs as; **power (HCPs' influence and medical dominance), sociocultural beliefs, socialization into a biomedical and paternalistic professional identity.** Therefore, the subsequent sections will discuss concepts that may help mitigate the mechanisms underlying the maladaptive beliefs and practices recorded in this study. The following concepts will be discussed:

- Revisiting evidence-based practice for CLBP management and considering a biopsychosocial approach (which may offer opportunities for more holistic, patient-centred, and collaborative care and address maladaptive and biomedical beliefs).
- Professional autonomy and interprofessional working to address medical dominance and fragmented care.
- Health literacy, patient empowerment and autonomy to address sociocultural beliefs and the power dynamics between patients and HCPs (paternalism).

- Harnessing SIA, particularly the potential of the in-group dynamics of work socialization, to foster change in patients' and HCPs' CLBP beliefs and management approaches.

Figure 18 provides a summary of the results chapters (vertical categories) and the proposed concepts (horizontal concepts) for addressing maladaptive illness identity states, medical dominance, fragmented care, paternalism and maladaptive beliefs and practices. The next section discusses evidence-based practice in relation to the research findings and highlights potential challenges with the uptake of EBP in Ghana.



Chapter 4 (Patients)	**Chapter 5 (Doctors)**	**Chapter 6 (Physiotherapists)**	**Chapter 7 (Theoretical Model)**
Biomedical/ Biomechanical Beliefs *Mechanisms: HCPs and Patients' Biomedical Orientation, Sociocultural beliefs*	Biomedical/ Biomechanical Beliefs *Mechanisms: Professional Identity, Sociocultural expectations*	Biomedical/ Biomechanical Beliefs *Mechanisms: Professional Identity Sociocultural expectations*	Rejection Engulfment *Mechanisms: Power (HCPs interactions) and Sociocultural Beliefs*
Evidence-Based Practice and Biopsychosocial Model			
Maladaptive Beliefs & Behaviours *Mechanisms: HCPs bio-medical/mechanical orientation, Sociocultural Beliefs*	Maladaptive Beliefs & Practices *Mechanisms: Professional Identity, Sociocultural Beliefs*	Maladaptive Beliefs & Practices *Mechanisms: Professional Identity, Sociocultural Beliefs*	Liminality *Mechanisms: Power (HCPs interactions), Sociocultural Beliefs*
Health Literacy, Patient Empowerment and Autonomy			
Positive Beliefs & Active Strategies *Mechanisms: HCPs bio-medical/mechanical orientation, Sociocultural Beliefs*	Positive Beliefs & Active Strategies *Mechanisms: Professional Identity, Sociocultural Beliefs*	Positive Beliefs & Active Strategies *Mechanisms: Professional Identity, Sociocultural Beliefs*	Acceptance *Mechanisms: The Self (Patients' personal convictions)*
Interprofessional Working and Professional Autonomy			
Limited Physiotherapy Knowledge and Awareness *Mechanisms: Limited Physiotherapy Visibility*	Limited Knowledge & Involvement of Physiotherapists and other HCPs *Mechanisms: Limited Physiotherapy Visibility, Fragmented Care*	Limited Physiotherapy Knowledge and Involvement *Mechanisms: Limited Physiotherapy Visibility, Fragmented Care*	Intergroup Dynamics: 'specialist before physiotherapist', limited appreciation of the roles of other HCPs, medical dominance *Mechanism: Professional Identity*
Harnessing Social Identity for Change			
Psychosocial Impact *Mechanisms: HCPs' interactions, Sociocultural Beliefs, Socioeconomic Impact*			Intragroup Dynamics: Socialization at Work *Mechanisms: Professional Identity*

Professional Identity refers to HCPs' biomedical orientation and paternalism reinforced through work socialization

Figure 18: Vertical and Horizontal Categories

8.2 Evidence-Based Practice

The importance of EBP was frequently alluded to by HCPs in the current study. There were also indications of knowledge of some current CLBP management approaches (e.g., avoidance of bed rest and the importance of prescribed exercises). However, EBP as it is understood in the context of Western countries (e.g., the use of clinical guidelines) was absent in the narratives of HCPs in the current study. Moreover, non-evidence-based approaches were the prevailing norms (e.g., electrotherapy, prolonged use of analgesics). Contested discourses around a purely biomedical model and paternalism dominated HCPs' descriptions of their approaches to CLBP management. The dominance of a biomedical approach is inherently problematic as it blinds doctors to the possibility of harnessing different approaches (Farre and Rapley, 2017). For the physiotherapists it may be perceived as a medium used to counteract the dominance of medicine and exert the importance and scientific basis of physiotherapy (Nicholls and Gibson, 2010). However, this approach becomes counterproductive facilitating reductionist management approaches as depicted in the current study.

The limited uptake of EBP recorded in the current study could be attributed to limited accessibility, availability, and emphasis on evidence-informed practice. Accessibility and availability of current evidence is facilitated by national structures, organizations, and professional associations in developed countries (Mathieson, Grande, Luker, 2019), thereby increasing the capacity of health institutions and professions to emphasize the uptake of EBP. However, avenues for accessing, promoting, and disseminating current evidence may be limited in the context of developing countries like Ghana. According to Greenhalgh (2015), the growing and ever-changing nature of evidence deepens HCPs' inability to keep up with current trends. EBP as proposed by Guyatt, Cairns, Churchill et al., (1992) and Sackett, Rosenberg, Gray et al., (1996) is credited with numerous successes, including cost-effective and life-saving approaches, fostering scientific knowledge and quality patient care (Pope, 2003). The stipulated benefits of EBP may be particularly essential for a resource limited setting like Ghana, especially the potential for cost-effective and efficient management approaches.

Nonetheless EBP has had its fair share of criticisms (Timmermans and Berg, 2003). EBP has been criticized for its narrow methodological framework, due to its emphasis on RCTs (Stevens, 2018). In the Ghanaian context, the emphasis on RCTs may serve to de-motivate HCPs, since the expertise and resources to conduct high-quality RCTs may be limited and adoption of best practice from Western countries may be unfeasible. Also, the translation of EBP into clinical practice has been a significant hurdle (Timmerman and Angell, 2000; Armstrong, 2002), with critics suggesting that knowledge derived from

EBP is driven by powers (governments, multi-national institutions, healthcare institutions) that seek to control, rationalize, and regulate healthcare provision (Rappolt, 1997). As Foucault (1979, p.27) stipulates, there is no ‘knowledge that does not presuppose and constitute at the same time power relations’. Furthermore, the technical approach of EBP has been classified as a basis for stifling critical thinking and individualized patient care (Upshur, 2002). This could be further understood from the perspective of indeterminacy/technicality (I/T) ratio (Jamous and Peliolle 1970). According to Jamous and Peloille (1970) professional work is underpinned by technical (pre-defined and structured) and indeterminate (tacit, traditional, experiential) knowledge and skills, and professions are considered to have a high indeterminate/technicality ratio. Therefore, an approach that is perceived to increasingly project technical knowledge over indeterminate knowledge may be considered a threat to the professional status of HCPs.

Most of these criticisms have been countered over the years with EBP proponents emphasizing the need for contextual, individualized patient care and the use of evidence in conjunction with expertise and clinical reasoning thereby acknowledging the artistic and indeterminate nature of healthcare provision (Greenhalgh, Snow, Ryan et al., 2015). The need for qualitative studies that address patients’ preferences and unravel complexities that cannot be addressed by numerical data has also been recommended as a relevant source of evidence (Greenhalgh, 1999).

The current evidence-base and clinical guidelines for effective management of CLBP advocates the uptake of a biopsychosocial model (NICE guideline, 2016, Kamper et al., 2017). However biopsychosocial frameworks for CLBP management were almost non-existent in the current research setting. Interestingly, the biopsychosocial approach addresses some important critiques around the uptake of EBP. Biopsychosocial approaches apply holistic, person-centred, and contextual care; thus, optimize quality of care (Gatchel, 2007). Biopsychosocial approaches may serve as a framework for the incorporation of contemporary evidence for CLBP management in the current research setting. The next section discusses the biopsychosocial approach for CLBP management and how it may address challenges to CLBP care identified in this study.

8.3 The Biopsychosocial Approach: A Promising Alternative to Address the Contextual Deficits for CLBP Management in Ghana?

The current study depicts challenges associated with the biomedical model (e.g., over-dependency on the healthcare system and passive therapies, prolonged hospital visits, the quest for a cure, and paternalism) when relied on for the management of chronic conditions. In Western countries, the surge in chronic conditions, associated insurmountable healthcare costs and struggles faced with the biomedical model in improving patient outcomes generated increased advocacy towards consideration of an alternative approach: the biopsychosocial approach (Gatchel, 2007). The biopsychosocial approach, initially conceptualized by Engel (1944), originated in response to the perceived inadequacies inherent within the biomedical model of treatment. Consequently, in Western countries, the BPS model is currently the preferred model for management of CLBP (e.g., NICE, 2016) and other conditions (e.g., mental health (Tripathi, Das Kar et al., 2019), diabetes (Kalra, Jena, Teravdekar, 2018). In the current study, the biomedical model was the main approach utilized by HCPs, despite HCPs acknowledgement of challenges that were associated with the utilization of a biomedical model. The absence of an alternative model of care in the current study setting could be attributed to the lack of knowledge of an alternative model of care, linked to challenges with the promotion and uptake of EBP. Generally, advocacy for biopsychosocial approaches for CLBP management is almost negligible within African countries, despite the increasing prevalence and documented challenges with CLBP management (Igwesi-Chidobe et al, 2017; Morris et al., 2018).

The evidence-base around CLBP management suggests that BPS approaches may facilitate improved CLBP outcomes (van Erp et al., 2019). A systematic review by van Erp et. al., (2019) (7 RCTs conducted in Western countries) assessing the effectiveness of physiotherapist-led BPS interventions in primary care settings suggested that BPS approaches were more effective than education/advice (e.g., staying active, appropriate medication use) in the short, medium and long term and were as effective as physical activity programmes (e.g., manual therapy, motor control, exercises) for managing CLBP. It is necessary to mention that the physical and educational interventions that were outlined in the SR were largely in contrast with most treatment approaches suggested by patients, physiotherapists, and doctors in the current study (electrotherapy, heat therapy, massage, biomechanically tailored advice). Importantly, the SR by van Erp et al (2019) revealed that BPS approaches addressing psychosocial factors and unhelpful beliefs were most promising, emphasizing the contextual, holistic and person-centeredness of BPS approaches. Therefore, BPS strategies have the potential to modify the biomedical and paternalistic approaches predominant within the current study setting. Furthermore, a multidisciplinary BPS approach was also found to be effective for CLBP management (even in patients who had a history of failed treatments and severe CLBP) in a systematic review by Kamper et al., (2015). The systematic review by Kamper et al., (2015) included forty-one RCTs (thirty-three from Europe, three from Iran, three from North America and two from Australia).

Biopsychosocial approaches normally consider biological, psychological and social factors (educational and/or work-related components) (Kamper et al., 2015). Biopsychosocial approaches may be delivered as active strategies through cognitive behavioural strategies, cognitive functional therapy, graded activity, education/advice and incorporating exercises or functional activities (Kamper et al., 2015; van Erp et al., 2019). The active nature of biopsychosocial approaches places the patient in charge of the management process. Therefore, the biopsychosocial perspective has the potential to address HCPs' use of passive, prolonged and paternalistic strategies for CLBP management as indicated by the current study participants. Moreover, biopsychosocial strategies may serve to guide patient education towards more holistic chronic pain explanations, addressing unhelpful HCPs' and patients' beliefs and promoting active coping strategies; thereby facilitating the transition from liminality to positive illness identity states.

Biopsychosocial interventions may be delivered to suit the resources and demands of a setting and so may involve a physiotherapist-led approach or multidisciplinary approach (Kamper et al., 2015; van Erp et al., 2019). This depicts the relative adaptability of biopsychosocial approaches, which may facilitate context-specific applications. A systematic review of 16 studies by Ampiah, Hendrick, Moffatt et al (2020) on the operationalization of biopsychosocial interventions for musculoskeletal conditions in developing countries suggest the potential for the use of biopsychosocial approaches in such contexts. Furthermore, the current study participants gave an indication of patients' pre-existing biopsychosocial beliefs ***prior to*** HCPs' intervention. These suggest the possibility of acceptance of a biopsychosocial approach in Ghana. Moreover, the pathophysiology of chronic pain is fundamentally consistent across different settings (Linton, Flink and Vlaeyen, 2018). Therefore, promising results recorded in RCTs assessing effectiveness of biopsychosocial strategies may equally apply within the Ghanaian context. However, application of biopsychosocial approaches may be time consuming, requires planning, training, and collaboration from professionals within diverse healthcare fields (Vries, Moser, Mertens et al., 2012), and these may pose as hurdles during implementation of BPS approaches. According to Tajfel and Turner (1978), motivational influences may affect social (professional) identities. In the context of this study, HCPs' vocalization of their frustrations with managing CLBP, the acknowledged importance of EBP approaches, the desire for improved patient outcomes and patient satisfaction may serve as motivation for considering an alternative model. The collaborative nature of biopsychosocial approaches may facilitate inter-professional communication, learning and collaboration (Wade and Halligan, 2017). This may improve the fragmented nature of CLBP management recorded in this study. However, structure and hierarchies within the healthcare environment may be immutable and may therefore pose a barrier (Mathieson, Grande, Luker, 2019). The next section discusses the limited collaboration between doctors, physiotherapists and patients revealed in this study, possibilities for interprofessional working among doctors and physiotherapists in Ghana, and professional autonomy of physiotherapists.

8.4 Professional Autonomy and Interprofessional Working

Despite suggestions that the dominance of medicine within the healthcare system may be diminishing, studies have consistently portrayed the contrary, showing that medicine still dominates other HCPs (Badejo, Sagay, Abimbola et al., 2020). The current study is no exception, as the physiotherapists and doctors suggested that doctors were solely responsible for referring CLBP patients and doctors indicated their perceived all-encompassing role in diagnosis and treatment. Medical dominance and the role of the state in the autonomy and working boundaries of the healthcare professions has been well rehearsed in the literature (see Freidson, 1970, Ovretveit, 1985, Nancarrow and Borthwick, 2005). It is not within the scope of this research to appraise the literature in this area.

Professional autonomy is thought of as an exchange for altruism and quality care; a social contract to be overseen by professional associations (Cruess and Cruess, 2004). Professional autonomy is a central concept within the professions that facilitates independent practice (Elston, 1991). It may be exercised at both individual and collective levels. At the individual level, autonomy facilitates independent professional judgment while performing daily work tasks. At the collective level, autonomy underscores the policing of working boundaries, regulation of practice and advocacy for patients' and organizations' improvement (Lin, 2014). In the current study there appeared to be better professional autonomy of physiotherapists at the individual level. However, a few physiotherapists mentioned instances where treatment was proposed by the referring doctor.

Conversely, at the collective level, aspects of professional autonomy of physiotherapists were stifled by medical dominance/the working hierarchies present in the current study settings. The consequence of which was fragmented care and late patient presentation for physiotherapy. The historical positioning of medicine as the foremost orthodox healthcare profession in Ghana (Twumasi, 1981), and the strive for status and occupational boundaries among the professions results in a complex competitive struggle for power (in the case of medicine) and autonomy (in the case of the other HCPs) (Light, 1988). Similarly, in the current study, the narratives of the doctors depicted their 'powerful' positioning, while physiotherapists bemoaned the late referral of patients, with few physiotherapists indicating the prospects of first-point-of-contact-practice as an avenue for early physiotherapy intervention. First-point-of-contact-practice was initiated in Western countries to provide sustainable healthcare services that may address the pressures faced in primary healthcare, increasing expectations of patients and financial challenges (Moffatt, Goodwin, Hendrick 2018). In the context of this study, first-point of contact practice may serve as an avenue for increased professional autonomy, early incorporation of physiotherapy, and opportunities for a two-way referral pathway (that is physiotherapist to doctor, and doctor to physiotherapist referral).

In the current study, there was no indication of collaborative working among HCPs and patients or between doctors and physiotherapists. The main form of HCP-to-HCP interaction was the doctor referring a patient for physiotherapy, which was often late or occasional. However, with increasing specialization and the complexity of patient care, it is often impossible for one provider to adequately meet the needs of patients, stressing the need for collaborative working (Hall, 2005). In this study, although HCPs acknowledged that different professionals may contribute to CLBP care, collaborative working was lacking, and this facilitated late referral and limited knowledge around the roles of different HCPs involved with CLBP management. Furthermore, the physiotherapists questioned the interest of doctors in CLBP management, citing inadequate diagnosis. According to Reinders, Krijnen, Goldschmidt et al., (2018), interprofessional team working builds confidence and trust; facilitates knowledge and appreciation of interprofessional roles through interprofessional communication and learning. In the context of the current research, interprofessional working may enhance trust between doctors and physiotherapists, improve doctors' knowledge about physiotherapy, facilitate prompt referrals and enhance communication between patients, doctors and physiotherapists.

Interprofessional team refers to different professionals who have adopted a common team identity; performing tasks in a cohesive fashion whilst depending on each other (Reeves, Lewin, Espin, 2010). Interprofessional working has been found to improve physicians' approach to CLBP management, leading to better prescription behaviours and involvement of relevant HCPs (Mior, Gamble, Barnsley et al., 2013). Substantive evidence indicates that multidisciplinary approaches improve patient outcomes (pain, disability, quality of life) and patients' and health professionals' satisfaction (Epstein, 2014; Kamper et al., 2017). Interprofessional collaboration is particularly recommended for complex health problems as pertains with CLBP (Perreault, Dionne, Rossignol et al., 2014). The strength in collaboration translates into patients being treated by the most appropriate professional with the best expertise for a given condition (Reinders et al., 2018). The current research identified the phenomenon of 'specialist before physiotherapist' referral, characterized by doctors' preference for referral of patients with

CLBP to orthopaedic surgeons/neurosurgeons before physiotherapists. This may have been facilitated by intergroup dynamics (ingroup favoritism). Interprofessional working may foster timely involvement of physiotherapists in the management of non-specific CLBP and offer patients timely management choices. Moreover, interprofessional working may create the opportunity for incorporation of collectivistic approaches to leadership (Brun, O'Donovan, McKullife, 2019). Contemporary evidence on leadership proposes a shift from traditional, static, vertical, and hierarchical leadership styles to emergent and dynamic styles of leadership: collectivistic leadership approaches (D'Innocentio, Mathieu, Kukenberger, 2014). Collectivistic leadership approaches include distributed, shared and collective leadership (Brun, O'Donovan, McKullife, 2019). In collectivistic leadership approaches, leadership roles and influence are directed by emergent situations (Pearce, Hoch, Jeppesen et al., 2010). The required skills at a given time drives the mantle of leadership and thus enriches the potential within a working team to adequately harness appropriate skills to address a problem at hand (Pearce et al., 2010). Potentially, collectivistic leadership approaches may amend the phenomena, 'specialist before physiotherapist' and re-position the physiotherapist as the required 'specialist' in the management of non-specific CLBP. Furthermore, collectivistic approaches may modify medical dominance and paternalism identified in this study, fostering shared decision making between doctors, physiotherapists and patients. Medical dominance undermines the team ethos of shared values and interdependency; promotes low patient involvement and communication (Busby & Gilchrist 1992). Research has linked collectivistic leadership to enhanced patient outcomes, safety and quality of care (McKee, 2010; Kaufman and McCaughan, 2013) and better team outcomes (D'Innocentio, Mathieu, Kukenberger, 2014).

Interprofessional teamwork requires working with multiple identities cohesively: being able to identify with one's professional and team values at the same time, which could potentially breed tension (Brown, Lewis, Ellis et al., 2011). (In section 8.7 the notion of interprofessional working would be expanded using SIA as a framework). Roles within an interprofessional team are normally distributed in line with the different professional identities situated within the team to promote working boundaries and jurisdictions and avoid conflicts (Hall, 2005; Mitchell and Boyle, 2015). One of the key attributes of interprofessional working is placing the patients' needs, values and choices first: patient-centered care (van Donogen, Lenzen, van Bokhoven et al., 2016). Patients' participation in decisions regarding their care is dependent on the knowledge and information available to them (Camerini and Schulz, 2015). In this study however, limited knowledge around the causes and coping strategies for CLBP, as well as limited awareness on the option of physiotherapy as a choice for CLBP management among the patients was prevalent; and these may stifle active patient involvement in decision making. Moreover, there were narratives of limited patient involvement in decision making. Therefore, the next section discusses health-literacy, patient empowerment and autonomy as avenues for reformed sociocultural beliefs of patients and patients' and HCPs' appreciation of the role of the patient as an active partner in the management of CLBP.

8.5 Health Literacy, Patient Empowerment and Autonomy

In the current study, the patients and HCPs demonstrated the influence of sociocultural factors (friends, family, and folklore) on the meanings attached to CLBP and health seeking behaviours of patients. Patients reported late to hospitals (due to beliefs that LBP was not a serious ailment or did not need medical attention); they were mostly unaware of healthcare services available to them; and they expected HCPs to make all decisions regarding their care. Patients' inclination towards HCPs as the ultimate decision makers may stem from inadequate information concerning CLBP and other healthcare services (health literacy), and the model in which healthcare is typically sought and managed by HCPs (Farre and Rapley, 2017). Health literacy is defined as the ability to access, understand and utilize health information and services (Jordan, Buchbinder, Osborne, 2010). Additionally, some patients ascribed unrelated causes (e.g., food, hemorrhoids) as causes of CLBP, depicting low levels of health literacy with regards to CLBP. This research suggests that, in addition to HCP-patient interactions serving as conduits for maximizing health literacy, there is a need for community and wider social health literacy initiatives that target informing the populace on basic health information, when, how and where to seek information and care for ailments (Jordan, Buchbinder, Osborne, 2010). Furthermore, WHO advocates a broader perspective of health literacy that includes social contexts. Thus, WHO (2013) defines health literacy as "the personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health".

Patients' and physiotherapists' accounts often suggested limited physiotherapy knowledge and visibility in Ghana. Therefore, strategies to increase the visibility and knowledge of physiotherapy among the populace need to be explored, since patients' knowledge of the role of physiotherapy is required to make informed choices about accessing physiotherapy care. Health literacy has been described as an important indicator of population health and health outcomes (Nutbeam, Levin-Zamir, Rowlands, 2018). Moreover, improved health literacy has been linked to better self-management in patients with chronic conditions (Edward et al., 2018). Health literacy is critical for patient empowerment, as patients can only make informed choices when they have knowledge of the condition and choices available to them (Briggs et al., 2010).

In the current study, incorporation of patient choices was mostly absent and occasionally misconstrued. Non-involvement of patients’ choices was fostered by biomedical & paternalistic healthcare; and subsequently sanctioned by patients. Patient empowerment is both a process and an outcome that involves equipping individuals or groups to gain mastery over their actions and control over choices that affect the self (McAllister et al., 2012). It involves a modified HCP-patient relationship that fosters patient-centred care (Anderson and Funnell, 2010). Patient empowerment appears to be in contention with the traditional biomedical approach to care (Anderson and Funnell, 2010). Therefore, patient empowerment begins with HCPs' recognition of the need to empower patients and demands a philosophical shifting from a paternalistic to a patient-centred approach (Anderson and Funnell, 2010). Patient empowerment requires that patients take charge of the choices and decisions around their care instead of mere complying with HCPs’ goals and advice (Fumagalli, Radaelli, Emanuele et al., 2015).

Patient empowerment fosters autonomy (Sharp, Palmore, Grady, 2014). Patient autonomy refers to patients’ ability to make life choices devoid of coercion, control or undue influence from others (Sharp, Palmore, Grady, 2014). Patient empowerment has been found to effectively promote self-management, self-efficacy and control of chronic conditions (Kohler, Tingstrom, Jaarsma et al., 2018, Lorig, Ritter, Villa et al., 2009, Kennedy, Reeves, Bower et al., 2007). Emphasis on self-efficacy and control as the main outcomes of empowerment has however been criticized as inadequate (Salmon and Hall, 2004). According to Aujoulat, D’Hoore, Deccache (2008), the outcome of patient empowerment should include patients’ ability to come to terms with and integrate illness into previous self-representations. Undoubtedly, the current research amplifies this notion, since inability to accept and integrate illness were identified as key mechanisms facilitating unhelpful beliefs, practices and negative psychosocial impact of CLBP.

In the current study, patient education was frequently mentioned by doctors and physiotherapists as an aspect of CLBP management. However, the emphasis was on educating to inform and ensure conformity to HCPs advice (improving engagement with prescribed treatment), instead of educating to empower. Educating to empower ensures that patients are guided and equipped with the relevant information to improve their ability to make informed choices (Aujoulat, D’Hoore, Deccache, 2007). Patients’ engagement has been mentioned in diverse literature as a major challenge in the management of chronic ailment (Medina-Mirapeix, 2009, Anderson and Funnell, 2010, Wentzer et al., 2013). Similarly, in the current study, the physiotherapists mentioned patients’ non-engagement as reasons for unfavourable management outcomes, as opposed to HCPs’ choice of management approach. However, evidence suggests that chronic illness management that is founded on paternalism may facilitate non-engagement; since HCPs and patients' goals may differ or HCPs' advice may be incongruent with patients' identities (Weiss, 2006). In the present study, it appears that liminality (being stuck in rejection and engulfment identities, while awaiting a cure) was adopted by patients to overcome the challenge of incongruence between HCPs' advice and patients' identities. The need to maintain or redefine a valued sense of self when chronic illness strikes, explicitly demonstrates the essence of patient empowerment as established in the current study and other studies (Aujoulat, D'Hoore, Deccache, 2008). Patient empowerment may serve to propel patients from a state of liminality to more positive illness identity states, as they are equipped with current knowledge around CLBP to make informed choices. Empowerment, underpinned by relevant and contemporary knowledge (explaining the chronic nature of patients' condition, addressing unhelpful beliefs, psychosocial contributions to chronic pain: BPS approaches), would serve to facilitate acceptance of CLBP and being positively influenced by the chronic pain experience (enrichment).

Patient empowerment does not seek to isolate patients to deal exclusively with their health problems (Sharp, Palmore, Grady, 2014). HCPs serve as the facilitators and expert resource delivering information to patients to assist in patients' decision making (Wentzer and Bygholm, 2013), buttressing the need for HCPs' acquaintance with current and best available evidence. Patient empowerment involves collaborative (HCPs and patients) goal setting. Involvement of patients in goal setting inculcates self-reflection, problem-solving, challenging barriers, and sustained motivation (Anderson and Funnell, 2010).

The next section discusses how SIA could be used as a framework for implementing reformed CLBP management practices, discussed in this chapter *(evidence-based, biopsychosocial, interprofessional, patient-centered care)*. These may help address maladaptive illness identity states (rejection, engulfment, liminality).

8.6 Harnessing Social Identity Approach for Change

The current study posits that the fragmented and non-evidence-based approaches utilized by HCPs are not only a result of a limited uptake of current evidence on CLBP but also prevalent intergroup dynamics (mediated by medical dominance/power), in-group favoritism and in-group socialization. Therefore, in proposing mechanisms for change and enhanced patient care, intergroup dynamics need to be considered. The importance of assessing group dynamics when assessing workplace situations is similarly shared by other studies (Kreindler et al., 2012, Weiss, Platt, Riley, 2015). Social (work) identities can foster work motivation, workers' wellbeing, and integration of diverse fields and expertise to enhance teamwork (Mitchell, Parker, Giles, 2011; Milton and Westphal, 2005, Ellemers, de Gilder, Haslam, 2004).

Interprofessional teams provide a context for shared goals, identity and collective working (Reeves et al., 2010). Interprofessional teams could be harnessed positively using SIA to overcome the challenges to CLBP care *(fragmented care, biomedical care, paternalism and liminality illness identity state)* revealed in the current study. Additionally, in the current study, the doctors cited 'forgetting physiotherapy' as a reason for late/no physiotherapy referrals. This, coupled with limited knowledge of physiotherapy among doctors and patients, points to the limited visibility of physiotherapy in the Ghanaian context. SIA suggests that changing the context can initiate changes in group dynamics (Slater, Evans and Turner, 2015). Interprofessional teams, a unique contextual change, could change professionals' previous notions concerning each other and facilitate changes to previous working interactions (Kreindler et al., 2012). Identification with an interdisciplinary team will promote the perception of intragroup similarity facilitated by psychological distinctiveness as previous out-groups aggregate and identify as members of an in-group (Tajfel and Turner, 1979). The perception of intragroup similarity promotes cohesion (Hogg and Terry, 2000). Group members become committed towards a common goal, facilitated by mutual respect and communication (Bergami & Bagozzi, 2000). According to Haslam, Reicher and Reynolds (2012, p215), "it is through our self-definitions as group members that social influence occurs and that social belief system shapes what we think, what we care about and what we do". Therefore, interprofessional team working facilitates appreciation, prioritization and positive perceptions of team members (Schot, Tummers, Noordegraaf, 2018). Identification with a group enhances a sense of belongingness and therefore tendencies towards appreciation of group norms, goals and values (Hornsey and Hogg, 2000). In healthcare delivery, collaborative working does not only reduce inter-group biases but ultimately enhances quality patient care and cost-effectiveness (Schot, Tummers, Noordegraaf). The next section discusses adoption of a superordinate identity to facilitate interprofessional working among physiotherapists and doctors in Ghana.

8.6.1 Adopting a Superordinate Identity for Effective Interprofessional Working

SIA presents a framework for identifying intergroup working dynamics and mechanisms to foster positive change (Weiss et al., 2015). SIA portends that a successful interdisciplinary team demands identity work towards adoption of a 'new', collective and shared identity to foster cohesion (Dovidio, Gaertner, Saguy, 2007). The 'new' and collective identity will seek to create a common ground for aggregating the disparate roles within the different professions: a superordinate identity (Gaertner, Rust, Dovidio et al., 1994). Based on the discussions in the preceding sections of this chapter, a superordinate identity comprising ***patient empowerment, evidence-based, collaborative (interprofessional) and biopsychosocial approach*** is proposed**.**

Within interprofessional teams, professionals are required to adopt multiple identities; their respective professional identities and the superordinate identity (Gaertner et al., 1994). Self-categorization describes abstracted levels of inclusiveness and abstraction along the personal and social identity continuum (Turner and Reynolds, 2012). Salience of the interprofessional team is underscored by the psychological process of accentuation: enhanced perception of the similarities within the interprofessional team (now considered as an in-group) (Hogg and Terry, 2000). Accentuation leads to depersonalization, so that participants see themselves as exchangeable with the superordinate identity (Haslam, Oakes, McGarthy et al., 1995). Thus, they adopt the norms, values, and goals of the interprofessional group (Mitchell, Parker, Giles, 2011). The self redefines its social identity. The presence of multiple professional identities within the interprofessional team may be considered as added value, since an interprofessional team is not possible without the aggregation of distinct professions (Krijnen et al., 2018). The professions work within the dictates and scope of their practice while focusing on achieving a common goal (Mitchell, Parker, Giles, 2011). Moreover, identification with the proposed superordinate identity in this study may reduce paternalism and professional-based dominance, since the team is built on mutual respect and communication (Krijnen et al., 2018). Research around team diversity by Mitchell et al., (2010) assessed how occupational status and positions affect group functioning. The study indicated that diversity enhances team effectiveness because diversity generates varied expertise which could be employed to solve problems. However, some authors argue that diversity may become a medium for increased conflict among team members (Mohammed and Angell, 2004).

Redefining social identity must, however, reckon with previously existing social identities in order to facilitate identification with a ‘new’ collective identity (Haslam et al., 2009). It is recommended that the superordinate identity must not seek to replace existing professional identities (Dovidio, Gaertner, Saguy, 2007). Patient empowerment, collaborative, evidence-based and biopsychosocial approach sits within the social identities of both doctors and physiotherapists; but paves the way for addressing of the central challenges *(biomedical and paternalistic care, and liminality)* identified in the current study. The current study participants gave an indication of some form of interaction between doctors and physiotherapists mainly through referrals; suggesting that a collaborative approach does not amount to an alien identity. Moreover, the doctors acknowledged that better collaboration with physiotherapists existed in the management of other conditions such as stroke. EBP was mentioned by some participants in the present study and patient education was a key element mentioned by all the HCPs. These suggest that EBP and patient-empowerment do not contradict HCPs' broader social identities. In addition, a BPS approach contains the biomedical together with psychosocial aspects, suggesting that a BPS approach is a holistic theory that still recognizes biomedical aspects of care (Gatchel, 2007). This, together with HCPs' awareness of the essence of EBP presents a BPS approach as one that fits within broader social identity frameworks of HCPs in the current study. The next section discusses considerations when adopting SIA as a framework to guide change in the current study setting.

8.6.2 Social Identity Approach for Change

Admittedly, elements within the proposed superordinate identity contradict dominant professional identity traits mentioned in this study *(medical dominance, biomedical and paternalistic care, passive management strategies)*. Therefore, its adoption would require practical engagements and mechanisms for facilitating change. The desire for a valued and positive social identity, which is considered as the psychological basis for identification with a group (Tajfel and Turner, 1979), may serve as the motivation for change. HCPs, in striving to maintain/enhance a valued social identity, may be motivated to seek alternative models of care that facilitate feasible and sustainable management approaches, promote a sense of being abreast with current treatment trends, enhance patients' satisfaction the healthcare system and improve patients' outcomes. These motivations were present in HCPs' narratives. Moreover, the description of medicine as both an art and a science may perhaps serve as the basis for health professions to embrace change (Panda, 2006). According to Kreindler et al., (2012), if social identities can be relied upon to resist change, then they can also be harnessed to promote change. Change is normally facilitated when leaders guide the change and ensure it aligns with existing group core values (Haslam, Eggins, Reynolds, 2003). Considering social identity requires appreciation of issues related to identity content (e.g., professional identity) and social structure (e.g., medical dominance and hierarchical structures). It would be useful to tap into existing core values that align with the new change (Goodrick and Reay, 2010). In the case of current study, the existing core values would be EBP, existing collaborative care in other areas of patient care (e.g., stroke management) as suggested by the doctors in the current study and patient education.

Incorporation of existing core values of groups into the change process formed a core tenet of models that used SIA to prescribe ways for introducing change in work environments (e.g., the ASPIRe model (Haslam, Eggins and Reynolds, 2003), "social movement thinking" (Bate, Robert, Bevan 2004), organic development of a "network community" (Bate 2000). The ASPIRe model for instance, proposes a bottom to top approach (Haslam, Eggins, Reynolds, 2003). The ASPIRe model proposes an initial phase of identification of sub-group identities; an intermediate phase that consists of development of goals that align with the sub-group identities and a final phase of planning that is informed by the identities and goals developed from the first and intermediate phases (Haslam, Eggins and Reynolds, 2003). The adoption of a collective identity does not follow a simplistic ready-made fashion but depends on the psychological shift from a sense of 'them' to a sense of 'us' which then births the desired change (Haslam et al., 2009). Interprofessional working could potentially foster this psychological shift among doctors and physiotherapists in Ghana as they focus on a shared goal of improved patient care.

Research has indicated that being a member of a team does not automatically translate into group identification. For instance, a qualitative study by Cott (2001) on the structure and meaning of multidisciplinary team (MDT) as ascribed by five MDTs in Toronto found that professional hierarchies affected meanings; different professions ascribed different meanings and there was a lack of a shared identity. Furthermore, a single intervention such as contextual change may be inadequate to facilitate interprofessional working. Contextual factors such as organizational reforms, availability of resources, and presence of facilitators that promote long-term interprofessional working may be worth considering (Finn, Currie and Martin, 2010). For instance, Farrell, Schmitt, and Heinemann (2001) in their study of one hundred and one (111) interdisciplinary teams for geriatric care found that having lesser differentiated roles promoted identification and a shared team culture in the later stages of teamwork. Also, a UK study by Hudson (2002) on interdisciplinary care among health and social care staff found that the contextual factor, co-location, improved effectiveness of teamwork. In the current study setting, multidimensional considerations such as leadership, organizational and policy reforms may be required, in addition to establishing interprofessional working for CLBP care. Moreover, a team comprising equal status groups may be impossible in certain circumstances. For instance, a study by Ajjawi, Hyde, Roberts et. al., (2009) assessed a shared learning program for medical and dental students across different faculties that promoted joint lessons and learning opportunities. Interviews were conducted among thirty-six staff and students. The dental students felt that the curriculum was skewed towards the higher status group (medical students), and therefore felt marginalized. The creation of 'artificial equal status groups' in initial team building may not stand the test of time in real situational contexts, thereby crumbling group values (Kreindler et al., 2012). Contextual adjustments that are in tandem with the ethics of the professions and the organization may need to be considered when planning for change. In Ghana, there is limited research related to calls for diminished dominance of medicine and professional autonomy. Therefore, initial interprofessional team building that focusses on equal status may be faced with resistance or impede doctors' interest in collaborative care. The role of patients as active partners within the interprofessional team is also paramount. There is the need to incorporate patients' voices and choices during planning and implementation of healthcare. Increasingly the use of patient and public involvement (PPI) as avenues for increasing patients' involvement and prominence in research and practice is advocated (Brett, Staniszewska, Mockford, 2014). PPIs enhance research/practice quality, appropriateness/relevance to patients, translation of evidence into practice, increased understanding of the researchers/clinicians and increased self-worth of patients (Brett et al., 2014). In summary, an effective team is built on core values of mutual respect, shared decision making between professionals and patients and consideration of sub-group identities.

8.7 Conclusions

This chapter provided a summary of the results of this study, showing how the aims and objectives of this research were achieved. This research provides a socio-culturally sensitive model that delineates the CLBP beliefs and practices among patients and HCPs in Ghana. This research has made unique contributions to the field of chronic illness, identifying the illness identity state, liminality, and the central role of HCPs and sociocultural beliefs on patients' beliefs and illness identity formation. This study has also identified the inherent model of care within the Ghanaian healthcare environment: biomedical and paternalistic care and hence the prevalence of biomedical beliefs among patients and HCPs. The reliance on dated evidence and a biomedical model resulted in varied maladaptive beliefs and practices among HCPs and patients, which adversely influenced the psychosocial impact of CLBP. The psychosocial consequences of identifying as a distinct professional within the health workforce and how these drive CLBP management practices have been revealed in this study. The study has revealed the role of work socialization and intergroup dynamics of 'specialist before physiotherapist', limited appreciation of the roles of other HCPs and medical dominance on HCPs' beliefs and practices, which in turn influence the patients' belief system regarding CLBP and its management. This chapter has recommended key concepts to address the structural and sociocultural mechanisms underpinning maladaptive illness identity states and practices revealed in this study. The role of the 'self' (patients) in facilitating active strategies and narratives of work socialization as drivers of HCPs' CLBP beliefs and practices may also serve as important catalysts for change.

8.8 Contributions to Knowledge

This research has made some unique and important contributions to the knowledge around CLBP beliefs and management. These are described below:

- This research has contributed to the understanding and substantiating of the existing evidence that suggests that patients' and HCPs' CLBP beliefs affect how CLBP is managed.
- A comprehensive understanding of the beliefs associated with CLBP and how CLBP is managed in the context of a developing/low-resourced country has been provided through the conduct and findings of this study.
- This study has highlighted the impact of sociocultural influences (e.g., patronage of herbal treatment, initial LBP beliefs suggesting that LBP may not be a serious ailment) on CLBP management (including treatment seeking behaviors) in an African context.
- This research has provided an understanding of HCPs' beliefs regarding CLBP and how these are situated within the discourses of the social contexts that HCPs are situated (e.g., the sociocultural expectations of paternalism and biomedical approach to care).
- This research has highlighted the inherent paternalistic and biomedical approach to care that underlies the management of CLBP in Ghana.
- It has also highlighted the evidence-based management gap between a developing country (Ghana) and developed countries.
- This research presents a comprehensive and novel approach (i.e., the use of two theoretical frameworks: illness identity and professional identity) to understanding how CLBP is experienced and managed.
- This study introduces the concept of liminality as an aspect of illness identity, serving as a boundary between positive illness identity states and maladaptive illness identity states.
- This study explicates the structures/agencies (e.g., power: medical dominance and paternalism) that contribute substantially to how CLBP is managed in Ghana.

8.9 Strengths and Limitations to the Study

This is the first study to develop a contextual model of CLBP beliefs, depicting the mechanisms underpinning CLBP beliefs and adopted management strategies in a developing country. This study provided a novel approach for understanding chronic pain beliefs through utilization of two theoretical frameworks (illness identity and social identity approach). The use of two theoretical frameworks facilitated development of a comprehensive and sophisticated theory. Additionally, this study is the foremost study to explain illness identity in CLBP in relation to liminality. In the African context, this is the first study that has explored the CLBP beliefs of HCPs involved with CLBP management. Furthermore, this is the first study that has explored the belief system inherent within the management pathway (patients, doctors and physiotherapists) for CLBP management in an African country. This study however acknowledges some limitations.

Findings of this study revealed that most of the patients were stuck in rejection and engulfment identities. A study by Van Bulck et al., (2018) assessing the relationship between illness identity and hospital use among patients with congenital heart disease found that engulfment was linked to hospital visits. Furthermore, patients with more symptoms are more likely to visit hospitals and therefore be engulfed by illness (Mozetta et al., 2008). The patients included in the current study were accessing medical and/or physiotherapy care and therefore this may have contributed to dominant narratives of engulfment. Nonetheless, this study highlighted how patients' interactions with HCPs introduced/deepened engulfment. Moreover, engulfment narratives were present even in patients who reported negligible pain, owing to inherited biomedical beliefs from HCPs.

Additionally, this study adopted SIA as the interpretative framework for the HCPs data. However, SIA has been critiqued for its emphasis on cognitive processes and not highlighting the influence of individual, social and historical contexts on social identity (Huddy, 2001). This critique has however been countered by SIA researchers (Tajfel, 1978; Hogg and Abrams 1988). SIA has proposed that in addition to cognitive influences, motivational influences contribute to group dynamics (Tajfel, 1978). Moreover, SIA's explanations of stereotypes highlight the contribution of society to social identity (Hogg et al., 2004). SIA also proposes that social identity is dynamic and contextual, and adoption of group norms will depend on the salience of the dominant identity (group or individual); thus, acknowledging individual influences (Hogg, Terry, White, 1995). In this study, although SIA provided an explanatory model for how HCPs' professional identities affected CLBP management, this study acknowledges sociocultural, historical and contextual influences such as medical dominance. Huddy (2001) proposes that cultural and dominant identifications may be central to the stability of some group identities and therefore social identities may not be fluid as suggested by proponents of SIA. In this chapter the proposition of SIA as a framework for change builds on the HCPs motivation to maintain a positive social identity by providing quality and improved care, as well as the scientific basis of medicine and physiotherapy which constitutes change (Panda, 2006). Scientific evidence evolves and clinical practice should be driven by current evidence (Sackett et al., 1996). Therefore, the fluidity of SIA proposed by Tajfel and colleagues may be suitably harnessed as proposed in this chapter.

The current study utilized semi-structured interviews as the method of data collection. However, the HCPs' interviews were sometimes hindered by time-pressures of participants, resulting in the compromise of sticking to pre-defined duration for the interview sessions. This sometimes resulted in shorter interviews. Therefore, the HCPs' data could have been enriched using other methods of data collection such as observation. Nonetheless, exploring the journeys of patients through the healthcare system, by involving patients and HCPs mainly involved with CLBP creates some degree of triangulation of data (Patton, 1999). The HCPs' narratives mostly substantiated the issues raised by patients and vice versa. Furthermore, the narratives of the doctors suggested orthopaedic surgeons and neurosurgeons as HCPs who contributed significantly to CLBP management in Ghana. However, this research did not include the beliefs of orthopaedic surgeons and neurosurgeons. This study adopted a purposive sampling approach with the aim of sampling across a varied range of participants and participation was voluntary. However, this study did not include consultants, but other high ranked family physicians (e.g., specialists) participated in the study.

8.10 Recommendations:

8.10.1 For Clinical Practice and Training

Clinical practice is a dynamic field that evolves based on new evidence and technologies that promote quality care and patients' outcomes (Panda, 2006). Therefore, there is the need for Ghanaian HCPs' continuous reflection on practice and incorporation of current and effective treatment approaches that fit within the resources available in the Ghanaian context. This study identified HCPs as 'powerful' entities who shape patients' beliefs, coping strategies and overall CLBP experience. To encourage adoption of more positive illness states and discourage liminality, Ghanaian HCPs need to adopt an alternative and holistic model of care that is congruent with the management of chronic illness: a biopsychosocial model. Instead of patients' focus on a cure, HCPs need to encourage patients to focus on acknowledging illness but not living solely for illness. Furthermore, HCPs' advice (on avoidance and restrictions in particular) need to be consistent with the current evidence to curtail unnecessary restriction of patients' lives.

These may require the uptake of continuous professional development (CPD) programs (e.g., self-directed learning, short courses or post-graduate studies) that introduce evidence-based concepts and encourage the uptake of contemporary and evidence-based approaches to care (Hill et al., 2019). CPD programs could potentially improve the human resource capacity within the Ghanaian health workforce to carry out specialized and evidence-based/contemporary CLBP management, conduct Ghanaian-specific health research and foster the uptake of EBP. Additionally, there is the need for adopting strategies to bridge the gap between research and practice. One of such strategies would require conducting Ghanaian-specific research that would present more contextual and applicable strategies, thus improving the transferability of research to clinical practice. An increase in Ghanaian-specific research would foster the development of practice guidelines: a strategy that has been successful in bridging the gap between research and practice in developed countries (e.g., NICE guidelines)

Due to the complex nature of CLBP, this research highlights the need for adoption of interprofessional (collaborative) working to curb fragmented care and late involvement of physiotherapists; address paternalism and medical dominance as well as imbue a sense of collective identity and a common goal towards improved patient outcomes. Therefore, this research suggests the consideration and implementation of interprofessional CLBP teams (patient-healthcare professionals’ partnerships) for the management of CLBP; as these have been found to be effective for CLBP when adopted in developed countries (Fu et al., 2016). Furthermore, this research suggests a revision of the dominant paternalistic approach to care that encourages patients’ view of themselves as passive recipients as recorded in this study. Chronic illness requires long term engagement of the patient; therefore, the patient needs to be an active partner responsible for making daily decisions regarding their care and life goals as permitted within the restrictions imposed by illness (Aujoulat et al., 2008). HCPs need to move from informing patients to empowering patients so that patients can make informed decisions regarding their care (Anderson and Fullen, 2010). Educational strategies among HCPs, targeting the need for patient-centered care approaches, may be beneficial in this regard. Moreover, initiation of patient involvement in research planning and implementation of healthcare strategies in Ghana is warranted, to ensure healthcare delivery is relevant and consistent with patients’/public needs.

Although, socialization within the working environment was identified as a significant mechanism reinforcing the CLBP practices of Ghanaian HCPs, some HCPs indicated that CLBP practices were acquired from training but reinforced through work socialization. Therefore, the incorporation of alternative models to care (in particular, the biopsychosocial model) into physiotherapy and medical training is required. The engagement of medical and physiotherapy educators with contemporary evidence-based approaches to practice through continuous professional development endeavors; and revision of existing curricula to reflect these would be beneficial. These may require periodic revalidation of undergraduate and postgraduate medical and physiotherapy programs that take into cognizance emerging/contemporary/evidence-based approaches and relevant competencies of chronic pain management (Fishman et al., 2013). Additionally, universities/faculties of medicine and physiotherapy in Ghana could establish partnerships with universities situated within developed countries to foster knowledge, research and resource exchange. Furthermore, training of doctors and physiotherapists at post-graduate and undergraduate levels in Ghana should include interprofessional education (IPE) to instill the importance of collaborative working. Interprofessional education has been described by Debra et al., (2018) as two or more professions learning with, from and about each other. Interprofessional pain education promotes student interactions that facilitate sharing and appreciation of the roles of various professionals and promotes a sense of mutual respect (Debra et al., 2018).

8.10.2 For Policy

Due to the overwhelming evidence supporting interprofessional working and quality of care, interprofessional working has been adopted as a policy within health care departments (e.g., Department of Health, 2001). Additionally, IPE has been introduced into curricula of developed countries and entrenched in policy in a bid to foster collaborative working (Barret, Greenwood, Ross, 2003). These processes towards strengthening collaborative working appear to be lacking within the current study setting as no evidence points to such policy statements or emphasis on IPE. A more practical form of interprofessional working may be achieved through strengthening policy documentation around interprofessional education and working among HCPs in Ghana, to support already existing global policy documents on interprofessional education and working (e.g., World Health Organization (WHO, 2010) Framework for Action on Interprofessional Education and Collaborative Practice). Policy documents supporting the need for patient-centered care would be beneficial in promoting patient-centered approaches as the preferred standard of care.

The patients and physiotherapists in this study bemoaned the late incorporation of physiotherapy in the management of CLBP. A few physiotherapists suggested that first point of contact practice may curtail the challenge of late involvement of physiotherapy. First point of contact practice may also foster autonomy of physiotherapists. Indeed, studies conducted in developed countries have reported increased patients' satisfaction, promising financial implications and the efficacy of physiotherapy offered through first-point-of-contact practice (e.g., Goodwin and Hendrick, 2016). This research recommends the consideration of a policy on first-point-of-contact physiotherapy practice that may increase the capacity of physiotherapists to offer timely services.

Public health campaigns have been successful in facilitating a sustained shift in CLBP beliefs among the general population (including HCPs) in developed countries, evidenced in research highlighting the effectiveness of public health campaigns in this regard (e.g., Buchbinder et al., 2001; Buchbinder et al., 2005). Therefore, in addition to health literacy duties of HCPs and healthcare centers, strengthening health literacy policies and promoting population-based strategies to improve CLBP literacy may be required. Public health initiatives/campaigns (e.g., through multimedia: radio, television, social media and rural communities' education programs) that target unhelpful sociocultural beliefs, promote positive messages about back pain and educate the public on where to access timely information and services may promote musculoskeletal health, better health seeking behaviors and mitigate some of the negative psychosocial impact of CLBP. The Ghana Physiotherapy Association (GPA) and physiotherapy departments in Ghana need to develop strategies to improve the visibility of physiotherapy in Ghana. There is the need to increase awareness and knowledge of physiotherapy so that patients can make first-hand choices regarding the option of physiotherapy care. The GPA should encourage the engagement with and uptake of EBP through organization of CPDs, encouraging strategies to bridge the gap between research and clinical practice (e.g., practice guidelines), and supporting physiotherapy research within Ghana. Importantly, considering the burden of LBP in Africa, the rising trend of MSDs in Africa, the maladaptive beliefs, practices and psychosocial impact of CLBP recorded in this study, there is the need for more equitable research funding opportunities globally, within Africa and Ghana that support musculoskeletal health research in Africa and Ghana.

8.10.3 For Research

This research, adopting a qualitative methodology, did not intend to produce generalizable findings. However, the research aspired to reveal practical mechanisms driving CLBP beliefs and care in Ghana, while exploring current management practices. To expand the applicability of this study to other Ghanaian/African contexts, two study settings regarded as focal points for healthcare delivery in the Northern and Southern belts of Ghana were chosen to enhance coverage of the CLBP beliefs and practices. The research has identified important processes which require further investigations to help direct and justify future approaches for CLBP management in Ghana. The following recommendations for research are therefore proposed:

- This study could be replicated in other developing countries and the significance of the model derived in this study further tested.
- The scope of this research included patients with CLBP accessing healthcare. It would be beneficial to explore the CLBP beliefs present among the general Ghanaian populace to decipher other mechanisms underpinning patients' beliefs.
- A survey of the CLBP beliefs of Ghanaian doctors and physiotherapists using the PABs questionnaire may be useful to provide wider coverage/knowledge of the

CLBP beliefs of Ghanaian HCPs. This would provide generalizable information which could be compared to the present study findings.

- This research identified varied direct and indirect economic implications arising from CLBP (Healthcare: Transportation, Radiological Investigations, Medications, Physiotherapy Treatment; Work: Avoidance of Activities (Suspension of Jobs/Chores), Job Losses, Hours of Work Lost due to Multiple Hospital Visits). Research providing economic/cost analysis of various elements contributing to the economic impact of CLBP would provide valuable information on the burden of CLBP in a developing country like Ghana, making explicit the need for CLBP management reforms.
- Since this research identifies the importance of holistic and collaborative care, research assessing the beliefs and readiness of other HCPs (e.g., psychologists and occupational therapists) in Ghana to engage with CLBP care could be assessed.
- Research assessing the feasibility, implementation and effectiveness of: public health campaigns for CLBP and educational strategies that introduce biopsychosocial/patient-centered approaches to HCPs, medical and physiotherapy educators in Ghana would be required to initiate a shift in CLBP beliefs and management in Ghana.
- Longitudinal studies to assess the effect of public health campaigns and educational strategies (promoting biopsychosocial approaches among HCPs, undergraduate/postgraduate medical and physiotherapy students) on CLBP beliefs and practices would be helpful.
- Feasibility RCTs/RCTs on the effectiveness of biopsychosocial approaches to treatment within the Ghanaian context will also be beneficial.
- Based on the mechanisms and recommendations proposed in this study, research assessing the effectiveness of an SIA inspired interprofessional biopsychosocial model of care on CLBP outcomes in Ghana would be beneficial.

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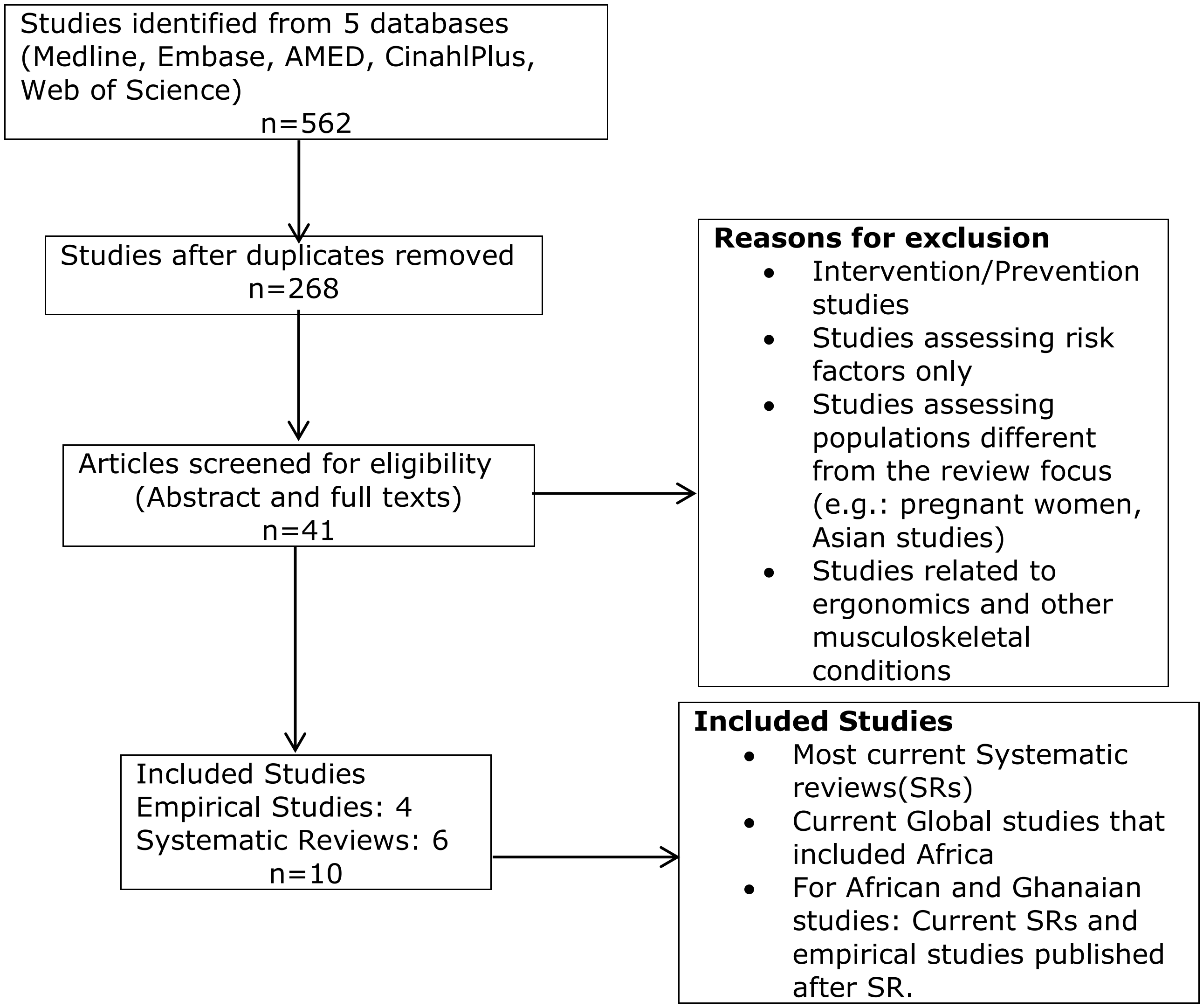
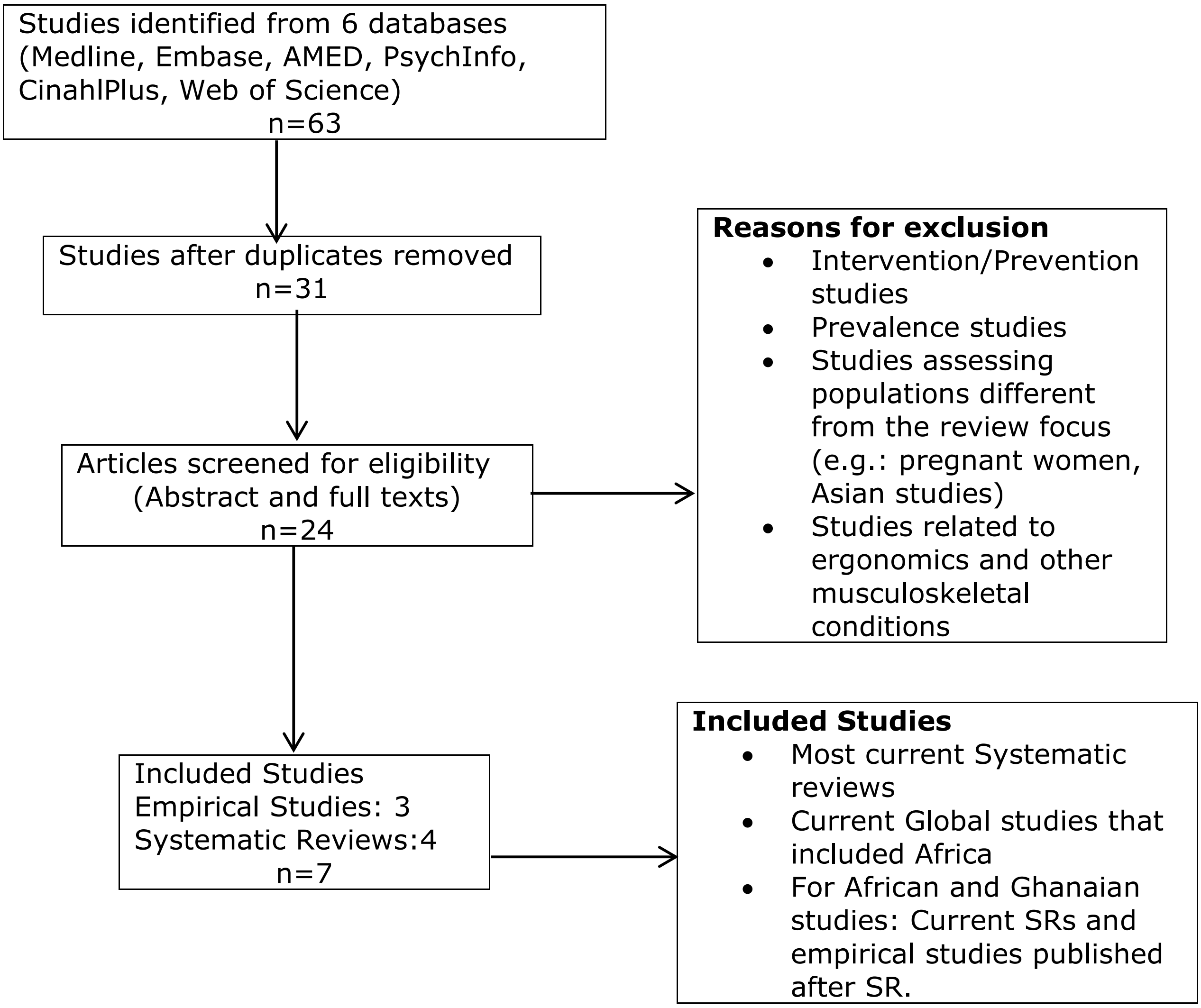
Appendices

Appendix 1: Search Strategy



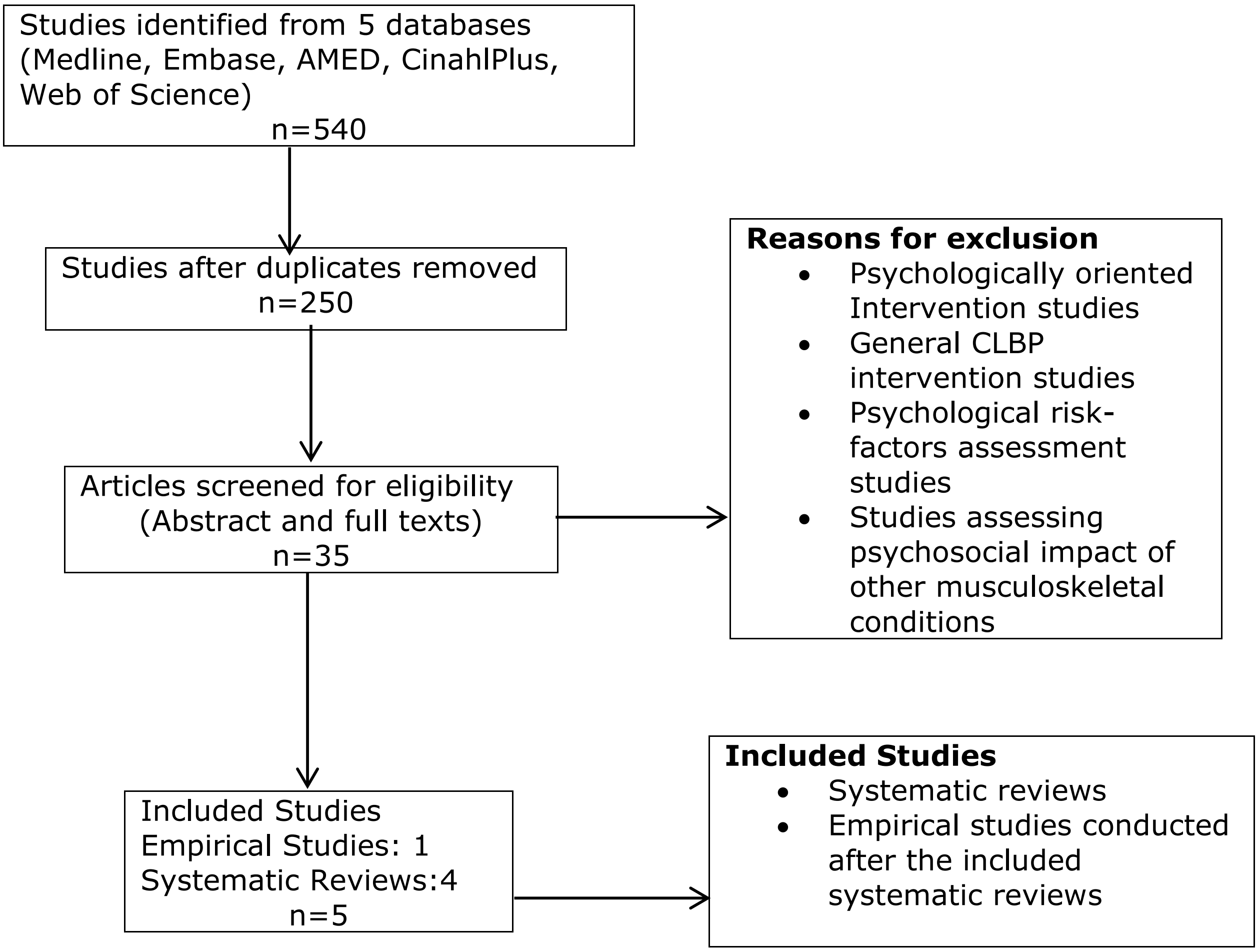
**Filters Used: Human studies published in English from 2007 to June 2021.*

Figure 19: Search Strategy for Prevalence of LBP/CLBP



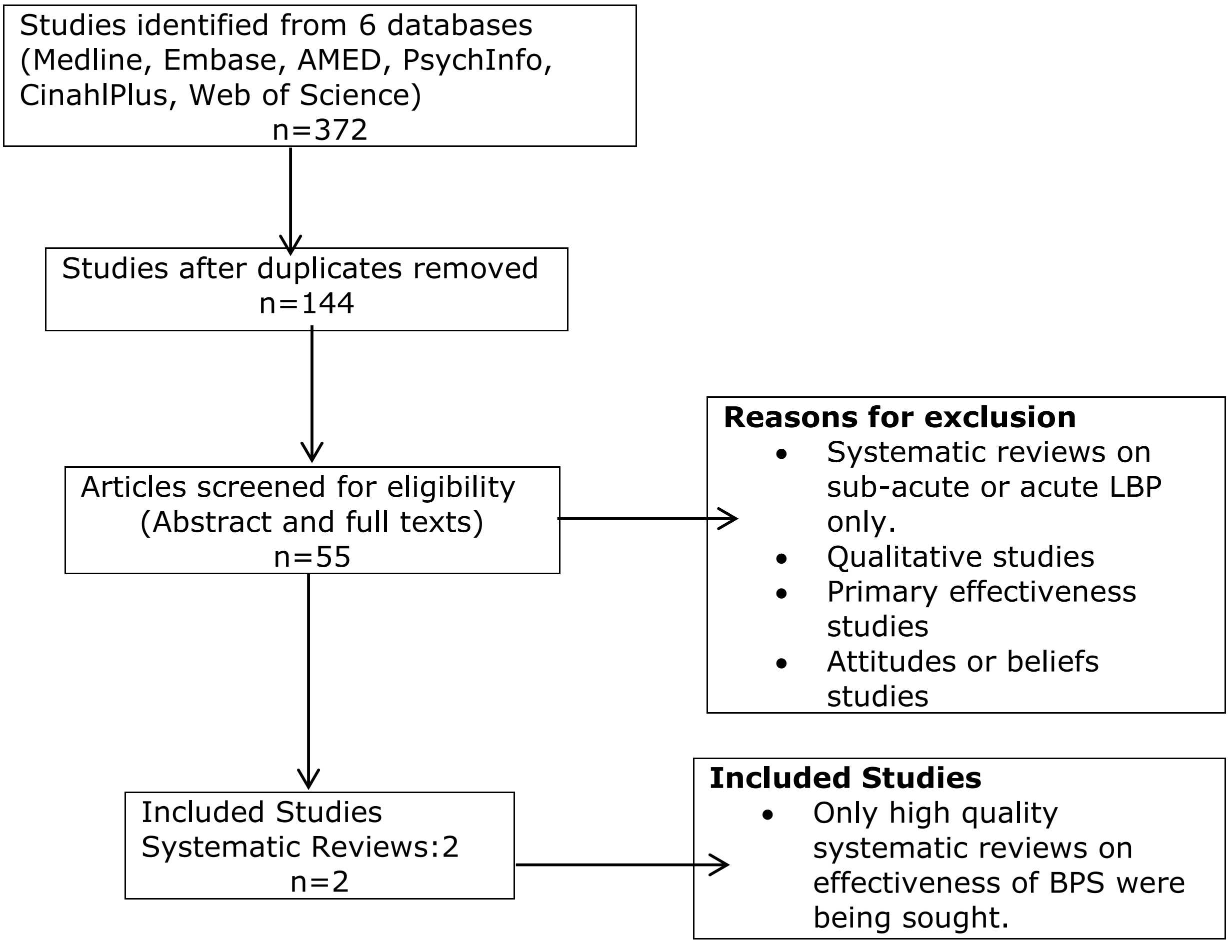
**Filters Used: Human studies published in English from 2007 to 2021.*

Figure 20: Search Strategy for Causes or Risk factors of LBP/CLBP



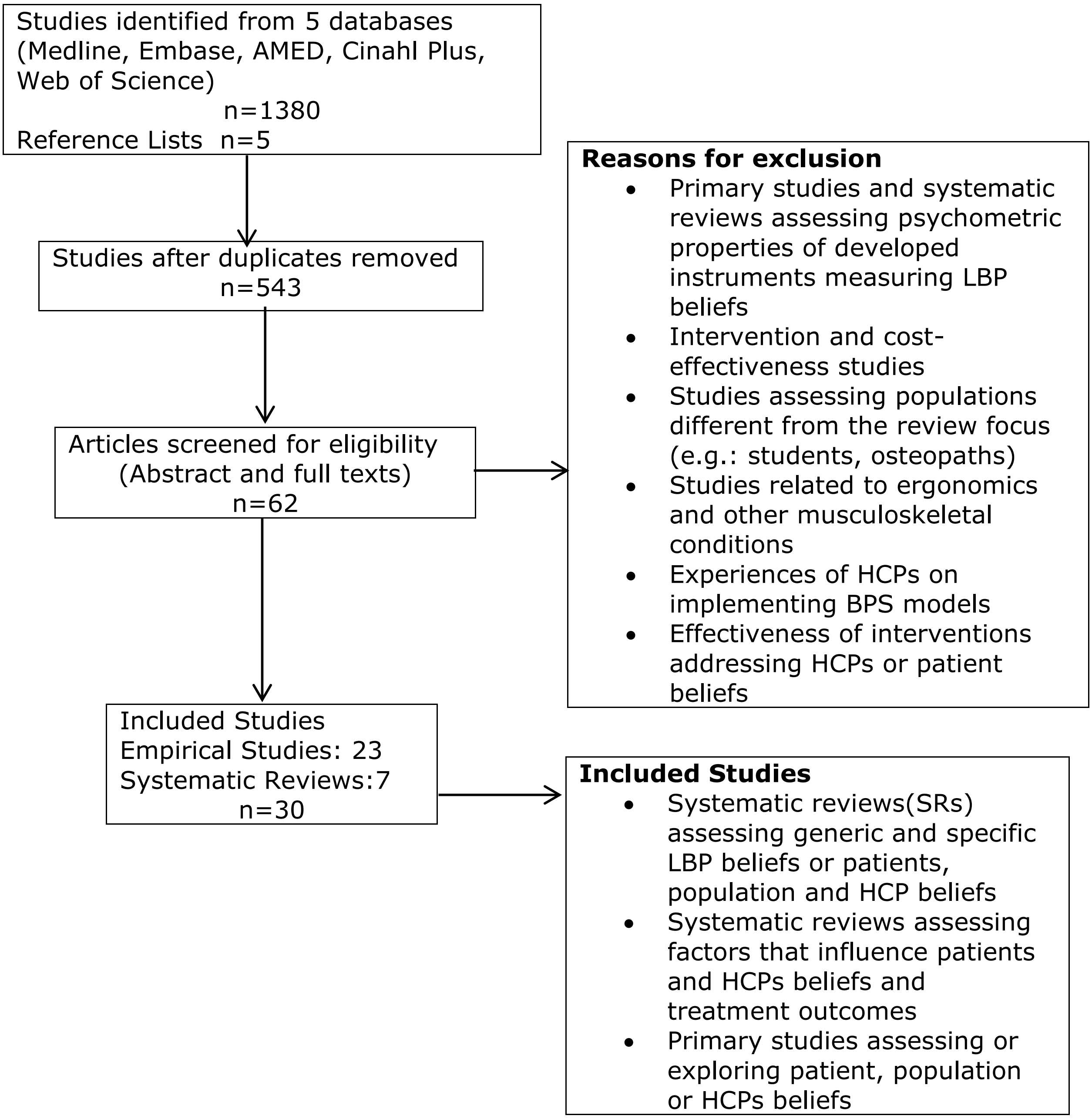
**Filters Used: Human studies published in English from 2007 to June 2021.*

Figure 21: Search Strategy for Psychosocial Impact of CLBP



**Filters Used: Human studies published in English from 2007 to 2021.*

Figure 22: Search Strategy for Effectiveness of BPS



**Filters Used: Human studies published in English from 2007 to June 2021.*

Figure 23: Search Strategy for Patients and HCPs Beliefs around LBP/CLBP

Appendix 2: Summary of Included

No	Author(s)	Aim of Research	Research Design	Country	Population/Setting
1	Hoy et al., 2014	To assess the global burden of diseases and the global burden of LBP	Systematic Review (117 studies including 1 Ghanaian study)	Global (85 countries)	Population-based
2	Wang et al., 2016	To assess the global burden of 315 diseases and injuries	Systematic Analysis	Global (194 countries)	Population-based
3	Rodrigo et al., 2015	To assess the global prevalence of CLBP	Systematic Review (28 quantitative studies)	Global (1 African study conducted in Nigeria)	Population-based
4	Dagenais et al., 2008	To assess direct and indirect costs associated with LBP globally	Systematic Review (27 quantitative studies)	USA, Australia, Europe	Population-based
5	Morris et al., 2018	An updated review to assess the prevalence and risk factors of LBP in Africa	Systematic Review (65 quantitative studies)	Mostly Nigerian (31.5%) and South-African studies (16.3%); 2 Ghanaian studies	HCPs (26.2%) Other Workers (32.3%) Scholars (16.9%) Community/Hospital based
6	Williams et al., 2015	To assess the prevalence and risk-factors of LBP in LMICs	Prevalence study (quantitative design)	Ghana, South-Africa, Mexico, China, Russia, India	Elderly population (>50) in rural & urban areas (n= 29,807)
7	Fejer and Ruhe, 2012	To determine the prevalence of musculoskeletal disorders among elderly population	Systematic Review (85 studies; 27studies on back pain)	Western countries	Elderly population (>60years)
8	Abledu, Offei & Abledu	To evaluate the prevalence and determinants of musculoskeletal disorders in taxi drivers in Ghana.	Cross-sectional study	Accra, Ghana	Urban male taxi drivers (n=210)
9	Bio et al., 2007	To assess the prevalence and predisposing factors to LBP among underground miners in Ghana	Cross-sectional study	Obuasi, Ghana	Male underground gold miners (n=280)
10	Miller et al., 2016	To assess the prevalence of LBP in clinics in Volta region, Ghana	Cross-sectional study	Volta Region, Ghana	Five mobile clinics (n=682)

Figure 24: Summary of Prevalence Studies

Risk-Factors of Low Back Pain/Chronic Low Back Pain					
No	**Author(s)**	**Aim of Research**	**Research Design**	**Country**	**Population/Setting**
1.	Ramond et al., 2011	To assess the predictive ability of psychosocial factors in precipitating LBP to CLBP	Systematic Review (23 quantitative articles from 18 studies)	Europe (72%) The rest: Asia, New Zealand Australia, USA, Canada	Hospital-based
2.	Igwesi-Chidobe, 2017	To assess the biopsychosocial factors associated with CLBP in rural Nigeria	Cross-sectional study	Nigeria	Rural Nigeria. Population-based (n=200)
3.	Driscoll et al., 2014	To assess the global prevalence of occupationally related LBP	Meta-analysis (9 studies)	Global (187 countries)	Workers
4.	Stubbs et al., 2016	To assess the relationship between LBP and mental health	Cross-sectional study	43 LMICs	Population-based (n= 190,593)

Psychosocial Impact of CLBP					
No	**Author(s)**	**Aim of Research**	**Research Design**	**Country**	**Population/Setting**
1.	Esson, Cote and Mirror (2020)	To explore the experiences of persons with CLBP and using the ICF	Qualitative study Three focus groups (n=9; n=9; n=3)	Canada	Persons with CLBP (high disability and low disability) (n=21)
2.	Froud et al., 2014	To synthesize the literature on the impact of CLBP.	Meta-synthesis (49 qualitative articles from 42 studies)	Europe, USA, Canada, Israel, New Zealand, Australia, Iran, South-Africa	Persons with CLBP accessing healthcare
3.	Bunzli et al., 2013	To provide a qualitative synthesis of lived experiences with CLBP	Meta-synthesis (25 articles from 18 studies)	Europe, New Zealand, Australia, Iran	Persons experiencing CLBP (n=713)
4.	Snelgrove and Liossi, 2013	To highlight the knowledge gained around the experiences of living with CLBP	Meta-ethnography (33 articles from 28 studies)	Europe, USA, Canada, Israel, New Zealand, Australia, Iran, South-Africa	Persons experiencing CLBP
5.	McNeela et al., 2015	To synthesize findings of studies on experiences of living with CLBP	Meta-ethnography (38 articles)	Europe, USA, Canada, Israel, New Zealand, Australia, Iran, South-Africa	Persons experiencing CLBP

Figure 25: Studies on Risk-Factors and Psychosocial Impact of CLBP

Management Guidelines for LBP and Pathway for LBP in Ghana					
No	**Author(s)**	**Aim of Research**	**Research Design**	**Country**	**Population/Setting**
1.	NICE, 2016	Clinical Practice Guidelines (CPGs)	Compiled by expert consideration of research	UK	General treatment guidelines for LBP/CLBP
2.	Oliviera et al., 2018	To provide an overview of the recommendations in CPGs for non-specific LBP in primary care	Systematic Review (15 CPGs; 9 out of 15 CLBP)	Mostly High-income countries; two from Asia;1 from Africa)	General treatment guidelines for LBP/CLBP
3	Lin et al., 2019	To provide recommendations for high-quality management of musculoskeletal conditions in emergency/primary care	Systematic Review (44 CPGs (15 LBP- 4 high-quality)	Mostly High-income countries; two from Asia	General treatment guidelines for musculoskeletal conditions (n=6232)
4.	SGT, 2010	Clinical Practice guidelines	Compiled by experts	Ghana	General treatment guidelines including LBP.
5.	Oppong-Yeboah and May (2014)	To assess the low back pain management practices among physiotherapists in Ghana	Cross-Sectional Survey	Ghana	Physiotherapists (n=44)

Figure 26: Summary of CPGs and Pathway for LBP in Ghana

Effectiveness of Biopsychosocial Model					
No	**Author(s)**	**Aim of Research**	**Research Design**	**Country**	**Population/Setting**
1.	Van Erp et al., 2019	To assess the effectiveness of BPS models delivered by physiotherapists in primary care to CLBP patients	Systematic Review (7 RCTs)	Western countries	CLBP patients (n=1,426)
2.	Kamper et al., 2015	To assess the effectiveness of BPS models delivered by a multi-disciplinary team	Systematic Review (46 RCTs)	Western countries	CLBP patients (n= 6858)

Figure 27: Summary of Systematic Reviews on Effectiveness of BPS Models

CLBP Beliefs					
No	**Author(s)**	**Aim of Research**	**Research Design**	**Country**	**Population/Setting**
1.	Wertli et al., 2014b	To assess the prognostic ability of FABs	Systematic Review (21 quantitative studies)	Western Countries	Workers, patients, population-based
2.	Wertli et al., 2014a	To assess the prognostic ability of catastrophizing	Systematic Review (16 quantitative studies)	Western countries	Workers, patients, population-based
3.	Jackson et al., 2014	To assess the prognostic ability of self-efficacy beliefs	Meta-analysis (88 studies; 27CLBP)	Western Countries	Workers, patients, population-based (n=15,616)

Figure 28: Systematic Review on Generic Pain Beliefs

Population/Patients' LBP Beliefs					
No.	**Author(s)**	**Aim of Research**	**Research Design**	**Country**	**Population/Setting**
1.	Darlow et al., 2014	To assess LBP beliefs among New Zealanders	Cross-sectional survey	New-Zealand	Population-based (Individuals with/without LBP) (n=612)
2.	Pierobon et al., 2021	To assess the LBP beliefs of Argentinians	Cross-sectional survey	Argentina	Population-based (Individuals with/without LBP) (n=1092)
3.	Christie et al., 2021	To assess the LBP beliefs of Swiss adults	Cross-sectional survey	Switzerland	Population-based (Individuals with/without LBP) (n=1129)
4.	Hall et al., 2021	To assess the LBP beliefs of Canadians	Cross-sectional survey	Canada	Population-based (Individuals with/without LBP) (n=428)
5.	Bunzli et al., 2015	To explore the factors underlying high kinesophobia in CLBP patients	Qualitative Interviews	Australia	Patients who scored high on the Tampa Scale (n=36)
6.	Darlow et al., 2015	To explore beliefs, attitude and perceptions related to LBP	Qualitative Interviews	New Zealand	12 patients with acute LBP, 11 patients with CLBP
7.	Singh et al., 2016	To explore the CLBP beliefs and	Qualitative study	UK	5 Punjabis; 5 white British, UK
8.	Setchell et al., 2017	To understand discourses related to beliefs on CLBP	Mixed Methods with content analysis	Australia	Participants with persistent CLBP (n=130)
9.	Briggs et al., 2015	To assess the health literacy, behaviours and beliefs on LBP in a community in Australia	Mixed-methods study	Australia	Community-based (Persons with/ without LBP (n=117;36 interviews)
10.	Nesto and Ina, 2017	To evaluate the LBP knowledge, attitude and beliefs of patients attending physiotherapy	Cross-sectional Survey	Malawi	Hospital-based LBP/CLBP patients (n= 205)
11.	Igwesi-Chidobe et al., 2017	To explore the experiences of Nigerians living with CLBP	Qualitative study	Nigeria	Rural dwellers with CLBP (n=30)
12.	Lin et al., 2013	To explore the CLBP beliefs of Aboriginal Australians with LBP	Qualitative study	Aboriginal Australians	CLBP patients (n=34)
13.	Honeyman and Jacobs, 1996	To evaluate the LBP beliefs of Aboriginal Australians	Cross-sectional survey	Aboriginal Australians	Community-based Individuals with/without LBP (n=55)
14.	Gron et al., 2017	To describe back pain beliefs among a clinical population	Longitudinal Study	Denmark	Patients visiting Chiropractic clinics (n=2295)
15.	Ng et al., 2017	To establish the role of back beliefs in persistent LBP	Longitudinal Study	Australia	Patients with persistent LBP (n=192)
16.	Morton et al., 2019	To review studies that have measured LBP beliefs and factors associated LBP beliefs	Systematic review (19 quantitative studies)	Europe, Australia, Argentina	Patients with CLBP

Figure 29: Summary of Population/Patients' LBP Beliefs

HCPs Beliefs on Low Back Pain					
No	**Author(s)**	**Aim of Research**	**Research Design**	**Country**	**Population/Setting**
1.	Darlow et al., 2012	To assess the association between HCPs beliefs and patient beliefs and treatment outcomes	Systematic Review (17 studies; 10 quantitative and 7 qualitative studies	8 Western countries	Chiropractors, physicians, physiotherapists, rheumatologists, orthopaedic surgeons, paramedics, LBP/CLBP patients
2.	Bishop, 2008	To assess the LBP beliefs of physiotherapists and GPs	Cross-sectional survey	UK	Physiotherapists (n=1022)
3.	Magalhaes et al.,	To assess the LBP beliefs of primary care physicians	Cross-sectional survey	Hong-Kong	Primary care physicians (n=156)
4.	Mauricio et al., 2012	To assess the LBP beliefs of physiotherapists	Cross-sectional survey	Brazil	Physiotherapists (n=100)
5.	Fullen et al., 2011	To assess the LBP beliefs of doctors	Cross-sectional survey	Ireland	General Practitioners (n=750)
6.	Alshehri et al., 2020	To assess the LBP beliefs of physiotherapists	Cross-sectional survey	Saudi-Arabia	Physiotherapists (n=304)
7.	Simonds et al., 2012	To assess the LBP beliefs of physiotherapists	Cross-sectional survey	Canada	Physiotherapists (n=108)
8.	Zangoni and Thomson, 2017	To assess the knowledge and beliefs of physiotherapists on the biopsychosocial model	Qualitative study	Italy	Physiotherapists (n=8)
9.	Tan et al., 2014	To assess the association between Chinese HCP characteristics and their LBP beliefs.	Cross-sectional survey	China	Chinese medicine practitioners, nurses, physicians, rehabilitation professionals (n=423)
10.	Werner et al., 2012	To evaluate physicians' determinants of sick-listing patients	Systematic Review of quantitative studies (11 studies)	Western Countries	Physicians
11.	Gardener et al., 2017	To evaluate the effects of physiotherapists beliefs on treatment outcomes	Systematic Review (10 studies)	Western countries	Physiotherapists

Figure 30: Summary of Studies on HCPs' Beliefs

Appendix 3

PARTICIPANT INFORMATION SHEET

Project title: Understanding how Pain Beliefs of Patients and Healthcare Professionals Influence Chronic Low Back Pain Management in Ghana.

Name and Affiliation of Principal Researcher: Josephine Ahenkorah, School of Health Sciences, University of Nottingham.

Background: Chronic Low back pain (CLBP) is a disabling condition that causes productivity losses and incurs huge healthcare costs. Psychosocial risk factors particularly pain beliefs are important risk factors that affect the occurrence and progression of CLBP. In order to successfully to implement a biopsychosocial approach to CLBP management (the recommended model for CLBP management) in Ghana, an understanding of the particular pain beliefs of healthcare professionals (HCPs) and CLBP patients in Ghana is required.

Aim: To explore the pain beliefs of CLBP patients and HCPs (doctors and physiotherapists) involved with CLBP management in Ghana and understand the factors affecting the beliefs of CLBP patients and healthcare professionals involved in CLBP management in Ghana.

Why have I been invited?

You are being invited to partake in this research because you are a patient with CLBP attending physiotherapy at KATH or KBTH or you are a doctor or physiotherapist involved in the management of CLBP at KATH or KBTH.

Do I have to Participate in the Study?

Your participation is entirely voluntary, and you may decline from participating in the research at any time. Decline or withdrawal will not affect you or your treatment in anyway. Please note however that, information provided that might have been used in collective data analysis and report findings, before your withdrawal, cannot be removed. As much as practicable however, your wishes will be duly considered throughout the research process.

What will happen to me if I take part?

You will be required to read the participant information sheet/the information sheet will be explained to you; and consent to participate in the research by appending your signature/thumb-printing. You will then be required to partake in an interview which will last for about 45minutes-1hour in a suitable room in the University building at KATH or KBTH at a time that is convenient for you. The interview will be audio-recorded using a portable recorder. Patients will be required to share information concerning their back pain and how they have managed their pain so far. HCPs will be required to share information concerning their experiences with managing CLBP and management choices for CLBP patients.

What are the benefits of participating in the study?

There are no personal benefits attached with this study. However it will serve to contribute to knowledge on Ghanaian CLBP beliefs, which are important psychosocial factors that affect outcomes and the course of CLBP; hence provide information that has potential to impact practice and shape the management of CLBP in line with evidence-based practice.

Are there any foreseeable risks to the individual if they participate in the research?

There are no foreseeable risks to the participant; except a very unlikely possibility of emotional distress that might be associated with recounting an unpleasant experience: pain.

Are there any costs or inducements to taking part in the research?

There are no costs or financial incentives associated with partaking in this interview. However, refreshments will be made available to participants.

What happens to the collected information?

The UK Data Protection laws will apply to the information collected. The University is the data controller (legally responsible for data security) and the Chief Investigator/Principal Supervisor (named below) is the data custodian (manages access to the data). This means we are responsible for looking after your information and using it properly. Your rights to access, change or move your information are limited, because we need to manage your information in specific ways to comply with the UK Data Protection Laws, and for the research to be reliable. To safeguard your rights, soft-copies of the data will be stored on the researcher’s encrypted laptop. Identifiable data will only be accessed by three other lecturers from the University of Nottingham who are supervising this project.

The recording will be transcribed by the researcher and after transcription the recording deleted from the recording device. The transcripts will be analyzed as the researcher draws central and sub-themes from the data. Quotes from the data will be included in the research report, however no name or identifier would be used in any publication or report. [If applicable] We would like your permission to use anonymized data in future studies, and to share our research data (e.g. in online databases) with other researchers in other Universities and organizations both inside and outside the European Union. This would be used for research in health and social care. Sharing research data is important to allow peer scrutiny, re-use (avoiding duplication of research) and to understand the bigger picture in particular areas of research. All personal information that could identify you will be removed or changed before information is shared with other researchers.

What will happen to the data?

The data will be analyzed and findings from the data presented as part of a research report and publication.

Who is organising and funding the research?

This research is being organised by the University of Nottingham and self-funded

Who has reviewed the study?

All research in the University of Nottingham is looked at by independent group of people, called a Research Ethics Committee, to protect your interests. This study has been reviewed and given favourable opinion by the Faculty of Medicine & Health Sciences (FMHS) Research Ethics Committee.

Contact details

Josephine Ahenkorah (Researcher)
Phone no: +233248039515
Email: msxja18@nottingham.ac.uk

Dr. Fiona Moffatt (Principal Supervisor)
Phone no: +44 (0) 1158231788
Email: fiona.moffatt@nottingham.ac.uk

Complaint procedure

If you wish to complain about the way in which the research is being conducted or have any concerns about the research then in the first instance please contact the *[Researcher or supervisor or heads of physiotherapy or polyclinic at site 1 and site 2]*. If you remain unhappy and wish to complain formally, you should then contact the FMHS Research Ethics Committee Administrator, c/o The University of Nottingham, Faculty PVC Office, B Floor, Medical School, Queen’s Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH or via E-mail: FMHS-ResearchEthics@nottingham.ac.uk

Appendix 4

CONSENT FORM
Final version 1.0: 08/08/2018

Title of Study: Understanding how Pain Beliefs of Chronic Low Back Pain Patients Influence Chronic Low Back Pain Management in Ghana

REC ref: ***(to be added after approval given)***

Name of Researcher: Josephine Ahenkorah
Name of Participant:

Please initial box

1. I confirm that I have read and understand the information sheet version number …………dated...................................... for the above study and have had the opportunity to ask questions. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. ☐
3. I understand that relevant sections of data collected in the study may be looked at by responsible individuals from the University of Nottingham, the research group where it is relevant to my taking part in this study. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☐
4. I understand that information about me recorded during the study will be kept in a secure database. If data is transferred to others it will be made anonymous. Data will be kept for 7 years after the results of this study have been published and then destroyed. ☐
5. I voluntarily agree to take part in the above study. ☐

______________________	______________	____________________
Name of Participant	Date	Signature
________________________	______________	____________________
Name of Person taking consent (if different from Principal Investigator)	Date	Signature
_______________________	______________	____________________
Name of Principal Investigator	Date	Signature

2 copies: 1 for participant, 1 for the project notes.

Appendix 5: Data Capturing Form

Patients' Data Capturing Form:

Code……………………………………………………………………………………………….

Age…………………………………………………………………………………………………

Gender……………………………………………………………………………………………

Occupation……………………………………………………………………………………..

Duration of Pain……………………………………………………………………………..

Period since started Medical Treatment/Physiotherapy……………………………

HCPs' Data Capturing Form

Code………………………………………………………………………………………………..

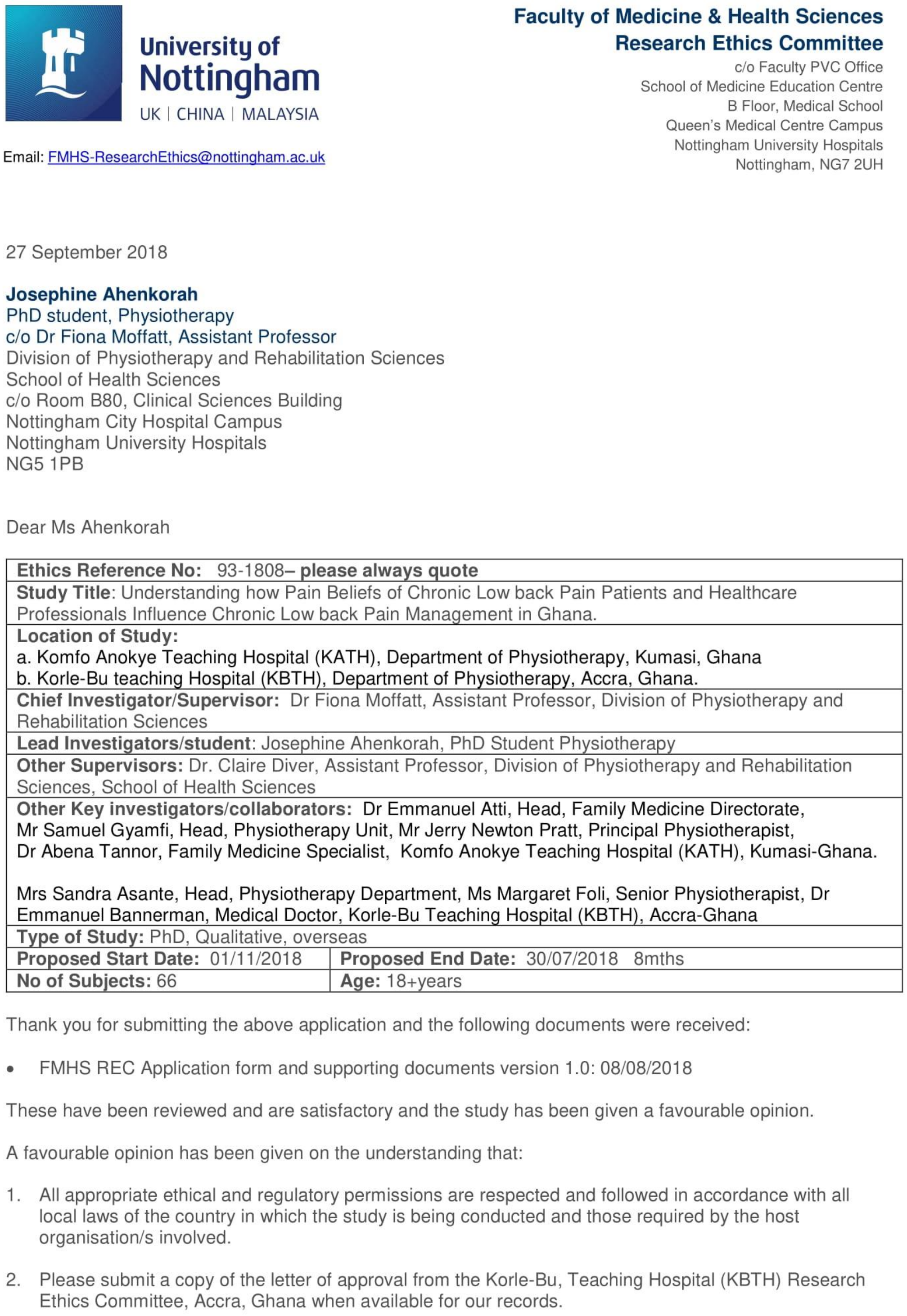
Age…………………………………………………………………………………………………..

Gender……………………………………………………………………………………………..

Occupation/Rank…………………………………………………………………………….

Years of Working Experience………………………………………………………………

Appendix 6: Ethics Approval



University of Nottingham
UK | CHINA | MALAYSIA

Email: FMHS-ResearchEthics@nottingham.ac.uk

Faculty of Medicine & Health Sciences
Research Ethics Committee
c/o Faculty PVC Office
School of Medicine Education Centre
B Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH

27 September 2018

Josephine Ahenkorah
PhD student, Physiotherapy
c/o Dr Fiona Moffatt, Assistant Professor
Division of Physiotherapy and Rehabilitation Sciences
School of Health Sciences
c/o Room B80, Clinical Sciences Building
Nottingham City Hospital Campus
Nottingham University Hospitals
NG5 1PB

Dear Ms Ahenkorah

Ethics Reference No: 93-1808**– please always quote**	
Study Title: Understanding how Pain Beliefs of Chronic Low back Pain Patients and Healthcare Professionals Influence Chronic Low back Pain Management in Ghana.	
Location of Study: a. Komfo Anokye Teaching Hospital (KATH), Department of Physiotherapy, Kumasi, Ghana b. Korle-Bu teaching Hospital (KBTH), Department of Physiotherapy, Accra, Ghana.	
Chief Investigator/Supervisor: Dr Fiona Moffatt, Assistant Professor, Division of Physiotherapy and Rehabilitation Sciences	
Lead Investigators/student: Josephine Ahenkorah, PhD Student Physiotherapy	
Other Supervisors: Dr. Claire Diver, Assistant Professor, Division of Physiotherapy and Rehabilitation Sciences, School of Health Sciences	
Other Key investigators/collaborators: Dr Emmanuel Atti, Head, Family Medicine Directorate, Mr Samuel Gyamfi, Head, Physiotherapy Unit, Mr Jerry Newton Pratt, Principal Physiotherapist, Dr Abena Tannor, Family Medicine Specialist, Komfo Anokye Teaching Hospital (KATH), Kumasi-Ghana. Mrs Sandra Asante, Head, Physiotherapy Department, Ms Margaret Foli, Senior Physiotherapist, Dr Emmanuel Bannerman, Medical Doctor, Korle-Bu Teaching Hospital (KBTH), Accra-Ghana	
Type of Study: PhD, Qualitative, overseas	
Proposed Start Date: 01/11/2018	**Proposed End Date:** 30/07/2018 8mths
No of Subjects: 66	**Age:** 18+years

Thank you for submitting the above application and the following documents were received:

- FMHS REC Application form and supporting documents version 1.0: 08/08/2018

These have been reviewed and are satisfactory and the study has been given a favourable opinion.

A favourable opinion has been given on the understanding that:

1. All appropriate ethical and regulatory permissions are respected and followed in accordance with all local laws of the country in which the study is being conducted and those required by the host organisation/s involved.
2. Please submit a copy of the letter of approval from the Korle-Bu, Teaching Hospital (KBTH) Research Ethics Committee, Accra, Ghana when available for our records.

3. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).

4. The Chair is informed of any serious or unexpected event.

5. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Professor Ravi Mahajan
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee