

**THE FORENSIC IMPLICATIONS OF CAMOUFLAGING: VICTIMISATION  
AND OFFENDING IN AUTISM AND PATHOLOGICAL DEMAND AVOIDANCE**

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## **Abstract**

Social camouflaging refers to behaviours or strategies which conceal an individuals' Autism from others. Camouflaging has also been described by individuals with Pathological Demand Avoidance (PDA). Camouflaging is reportedly used in response to threat, potentially reducing the risk of victimisation. Camouflaging can also prevent timely diagnosis and access to support, which may increase the risk of victimisation and offending behaviour. This thesis aims to examine the forensic implications of social camouflaging in association with autism and PDA traits.

First, a systematic review and meta-analysis was conducted to determine the prevalence of victimisation in autistic individuals considering various forms of victimisation such as bullying and conventional crime, finding a prevalence rate of 44%. There was heterogeneity in the prevalence rate. Subgroup analysis explored potential moderating factors such as participants' age, reporter used, and the setting from which participants were recruited. Higher prevalence rates were found in community samples compared to clinical samples and were greater in parent-report compared to self-report. However, heterogeneity remained, restricting the generalisation of the results. Nevertheless, the results highlighted several implications such as increasing collaboration between health and social care services.

Following this, a methodological critique of the Juvenile Victimization Questionnaire (JVQ), a widely used measure of victimisation, is presented. The JVQ has demonstrated acceptable internal consistency and good predictive validity. However, more evidence is required regarding criterion and concurrent validity and test-retest reliability. The critique provides recommendations for the

study of victimisation in research, including validation of the JVQ in autistic people.

A cross-sectional study with 220 adults then used multiple regression analysis to explore the association between victimisation, PDA and autistic traits, symptoms of depression and anxiety, and social camouflaging. Victimisation was predicted by PDA traits and symptoms of depression. Camouflaging was positively correlated with victimisation, suggesting it could increase the risk of victimisation for autistic and PDA individuals.

A second study with the same sample used multiple regression analysis to examine the relationship between offending behaviour, autism and PDA traits, symptoms of depression and anxiety, and social camouflaging. The analysis found camouflaging predicted greater offending behaviour. PDA and autism traits also predicted offending behaviour. Thus, camouflaging may also increase the risk of offending behaviour. The results of the empirical studies are considered with reference to implications within the Criminal Justice System.

The results presented throughout the thesis are considered and a theoretical model is produced through structural equation modelling. This found direct and indirect pathways to offending and victimisation through mental health difficulties, autism and PDA traits, and camouflaging behaviour. Theoretical and practical implications, limitations, and recommendations for future research are then discussed.

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## **Authorship Declaration**

The contents of this thesis have been reviewed by my academic supervisors: Associate Professors Vincent Egan, Danielle Ropar, and Katy Jones. There are no other authors in the contents of this thesis.

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## **Chapter One**

### **Introduction**



## **Introduction**

Victimisation generally refers to acts in which an individual is subject to cruel or unjust treatment. This can include bullying (intentional and repeated physical, verbal, and/or relational acts in situations wherein there is a difference in power, (Olweus, 1993)), maltreatment (including neglect and physical and emotional abuse), sexual victimisation (e.g., rape and sexual assault), and crime (e.g., robbery, theft, assault). The study of victimisation has demonstrated the damaging effect of being victimised. For instance, childhood victimisation can lead to attachment disorders, depression, anxiety, post-traumatic stress symptoms, and suicidal behaviour (Arseneault, 2018; Leeb et al., 2011) which can persist into adulthood (see for example Wise et al., 2001). Experiencing violence in adulthood is also associated with depression, post-traumatic stress disorder, and anxiety (Lagdon et al., 2014). For professionals working with individuals who are at risk of victimisation, understanding factors which may increase a persons' risk can assist in developing and implementing preventative methods. This can also enable professionals to provide support to ameliorate the potential consequences of victimisation.

Certain individuals may be predisposed to being at an increased risk of victimisation. A meta-analysis of data from 21,557 individuals across six countries concluded that people with disabilities are at a higher risk of experiencing violence than individuals without disabilities (Hughes et al., 2012). Individuals with intellectual and developmental disabilities are suggested to be the most at risk of experiencing victimisation due to the interaction between the condition and the environment (Pfeffer, 2016). Exclusion from education, dependence on others, reduced physical and emotional defences, communication

difficulties, stigma, and discrimination can increase the risk of victimisation in these populations (Nosek et al., 2001; Saxton et al., 2001).

One such population at an increased risk of victimisation are individuals with Autism Spectrum Disorder, hereafter referred to as autism<sup>i</sup>. Autism is a developmental condition characterised by difficulties in social communication and interactions and restrictive, repetitive patterns of behaviour (American Psychiatric Association, 2013; World Health Organisation, 2018) which is present in over 1% of the UK population (HM Government, 2014). Difficulties in social communication and interaction includes difficulties interpreting verbal and non-verbal language and recognising others' feelings and intentions (National Autistic Society, 2016). Restrictive, repetitive patterns of behaviour can manifest in repetitive behaviour and routines, highly focussed interests, and sensory sensitivity (National Autistic Society, 2016). Previously, autism was characterised by a 'triad of impairments': difficulties in socialisation, poor communication, and lack of imaginative thinking (Wing, 1981). There were also previously subtypes within the autism diagnosis, including Asperger's Syndrome and Pervasive Developmental Disorder Not Otherwise Specified. However, the 5<sup>th</sup> Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) removed these categories and refined autism as a single condition characterising a broad spectrum of functioning to improve reliability and consistency in the diagnosis of autism. The 11<sup>th</sup> Edition of the International Classification of Diseases (ICD-11) also reclassified autism as a

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<sup>i</sup> This thesis is conceptualised using the Social Model of Disability (see Oliver, 2009). This model suggests that people's impairment only becomes a disability when society does not make reasonable adjustments for those impairments. The use of the Medical Model of disability and associated terminology such as autism spectrum disorder can perpetuate stigma and negative stereotypes towards autistic people, including the idea that autism is something that needs to be treated, rather than an intrinsic part of a person. I believe it is society, not autism, which requires treatment. Therefore, the term 'autism' is throughout this thesis.

single diagnosis in 2018 (World Health Organisation, 2018). Thus, the current diagnostic criterion for autism requires persistent difficulties in social communication and social interaction, and restrictive, repetitive patterns of behaviours, interests, or activities (World Health Organisation, 2018).

The characteristics of autism are suggested to increase the risk of victimisation. For example, difficulties with social communication and interactions may lead to misunderstanding non-verbal cues or inappropriately responding in reciprocal conversations, increased social vulnerability, and difficulties discriminating between good- and ill-intended peers (Hellström, 2019; Sofronoff et al., 2011). Increased dependence on others, being perceived as vulnerable, social isolation, and stigma also increase the risk of victimisation (Furey et al., 1994; Liptak et al., 2011; Neely & Hunter, 2014; Orsmond et al., 2013). Additionally, restricted, and repetitive behaviours have been associated with victimisation in autistic children<sup>ii</sup> (Adams et al., 2014); engaging in these behaviours may make children stand out from their peers, increasing their vulnerability (Sreckovic et al., 2014).

Pathological Demand Avoidance (PDA) is a developmental condition associated with autism (National Autistic Society, 2020). PDA was first identified by Elizabeth Newson and her team from within a cohort of children referred for assessment of atypical autism (Newson et al., 2003). Although these children did not fit the diagnosis of atypical autism, they presented with a similar profile to one another: obsessional avoidance to every day demands and social manipulation within avoidance behaviours. Thus, PDA was proposed as a distinct clinical syndrome, though there is ongoing debate as to whether PDA is part of

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<sup>ii</sup> Autism-first language is throughout this thesis. This is in line with the preference of autistic adults and parents in the UK (Kenny et al., 2016). Similarly, PDA-first language is used throughout this thesis.

the autism spectrum (Green et al., 2018). It has been noted by O’Nions and Eaton (2020) that the children assessed by Newson and her team were likely the most severe cases, meaning this data “may overestimate the degree to which PDA separates as a subgroup within the autism spectrum” (O’Nions & Eaton, 2020, p. 411). While there are similarities in the characteristics of PDA and autism, such as difficulties with social communication, obsessional behaviour, and language delay (Gillberg et al., 2015; Reilly et al., 2014; Newson et al., 2003), there are differences between the two. For example, PDA children do not present with the lack of imaginative play or need for predictability like autistic children (Newson, 2002; O’Nions, Viding, et al., 2014). Furthermore, autistic children do not present with social manipulation due to difficulties with Theory of Mind (ToM; the ability to infer the mental states of others; Baron-Cohen et al., 1985; Frith et al., 1991; Newson, 2002). The relationship between PDA and victimisation has not yet been empirically examined. However, the experiences of autistic individuals may extend to PDA individuals given the similarities of the conditions. For example, difficulties in social interaction and communication may increase the risk of victimisation in PDA individuals.

Autistic people may also be at risk of offending behaviour. For example, due to frustrations that may arise from social situations or environments that fail to accommodate autistic differences, autistic individuals may engage in aggressive, destructive, and defiant behaviour (Hartley et al., 2008; Murphy et al., 2005). Difficulties with empathy, emotional regulation, ToM, and moral reasoning may also contribute to offending behaviour in this population (Baron-Cohen, 1988; Im, 2016; Kohn et al., 1998; Lerner et al., 2012). Additionally, emotion regulation difficulties can manifest in impulsivity, aggression, and violence (Eisenberg et al., 1995; Gardner & Moore, 2008). Autistic individuals

often have co-occurring difficulties such as Attention Deficit Hyperactivity Disorder (ADHD) which may exacerbate problems and contribute to the risk of offending behaviour (Allely et al., 2017).

PDA individuals can display similar difficulties as autistic people which may increase the risk of offending behaviour, including emotion regulation difficulties, difficulties in social interactions, and comorbid ADHD (National Autistic Society, 2020; Newson et al., 2003). The extreme avoidance to everyday demands in PDA can manifest as 'crisis situations' involving physical and verbal aggression (Christie et al., 2012), potentially leading to formal adjudication. Moreover, PDA individuals have shown similar anti-social traits as those associated with Conduct Disorder and Oppositional Defiant Disorder (Gillberg et al., 2015); conditions which are associated with anti-social and oppositional behaviour. Egan et al. (2019) found PDA traits, referring to characteristics associated with PDA, significantly predicted delinquency, though this was not replicated in a subsequent study (Egan et al., 2020). Thus, although there is not a causal relationship between autism or PDA and offending behaviour, these populations may be at an increased risk of offending due to associated difficulties and the interaction between the condition and the environment.

Although victimisation and offending can occur separately, research has identified a relationship between the two experiences (see Zaykowski, 2015). For example, in both autistic and non-autistic samples, childhood abuse has been associated with criminal behaviour in adulthood (Kawakami et al., 2021; Ogloff et al., 2012; Qualkenbush, 2021). Peer victimisation has also been suggested to contribute to offending behaviour in autistic individuals (Del Pozzo et al., 2018). While a causal relationship has not been identified, several hypotheses regarding this relationship have been proposed. For instance, violent

behaviour may be learned and subsequently replicated through exposure to violence (see Akers & Jennings, 2019). Alternatively, revenge or retribution for victimisation could also precipitate offending behaviour (Allen et al., 2008; Attwood, 2007). The impact of psychological trauma on emotional regulation and problem-solving abilities (see Im, 2016) could also contribute to offending behaviour (Gardner & Moore, 2008). Thus, it is useful to examine victimisation and offending both separately and simultaneously in autistic and PDA individuals.

There are new things we have learnt about autism which could contribute to our understanding of victimisation and offending in this population. For instance, autistic individuals have reported engaging in social camouflaging (Hull et al., 2017). Camouflaging refers to behaviours or strategies to hide or mask an individual's autism from others (Hull et al., 2017). This can involve developing personas or characters to use in social situations or developing strategies to meet the gaps in social and communication abilities. Camouflaging is thought to be different to ordinary reputation management seen in non-autistic individuals as it can be extremely effortful and challenging to the individual's identity (Bargiela et al., 2016). PDA individuals have also anecdotally reported engaging in camouflaging to avoid unwanted attention and to fit in with others (Cat, 2018; PDA Society, n.d.). Additionally, 'superficial sociability', a characteristic present in PDA, which is described as appearing social but lacking depth of understanding (National Autistic Society, 2020; Newson et al., 2003) could be interpreted as a form of camouflaging.

Autistic individuals report using camouflaging to blend in with others, increase social connections, and reduce threat: participants in one study reported being ostracised, verbally or emotionally attacked, and physically

assaulted when they had not camouflaged their autism (Hull et al., 2017). They used camouflaging to minimize differences between themselves and others and reduce perceived threat. Thus, as camouflaging may reduce threat to autistic individuals and could improve other social circumstances associated with lower victimisation such as increased peer relationships (Turner et al., 2011), camouflaging may serve as a protective factor against victimisation. On the other hand, camouflaging could increase the risk of offending behaviour and victimisation as camouflaging can impact on accurate diagnosis and access to specialist support (Calzada et al., 2012; Gould & Ashton-Smith, 2011). Later diagnosis of autism has been associated an increased prevalence of criminal behaviour (Heeramun et al., 2017; Kawakami et al., 2012). Furthermore, a lack of understanding of an individual's difficulties due to social camouflaging could result in inappropriate provisions being applied, subsequently increasing the risk of offending behaviour and victimisation. Hence, considering camouflaging in the occurrence of victimisation and offending could offer explanations for why some autistic and PDA individuals have these experiences and some do not.

The relationship between camouflaging, offending, and victimisation has not yet been investigated. Exploring the forensic implications of camouflaging in autistic and PDA individuals may highlight areas of development within the Criminal Justice System and associated services. This thesis therefore aims to investigate the association of camouflaging to victimisation and offending alongside characteristics associated with autism and PDA, hereafter referred to as traits. Specifically, this thesis aims to deliver the following:

1. To provide an estimate of the prevalence rates of victimisation globally in autistic individuals through a systematic review and meta-analysis.

2. To critique the Juvenile Victimization Questionnaire (JVQ); a widely used measure of victimisation.
3. To add to the literature about protective factors for victimisation in autistic and PDA individuals by exploring the relationship between camouflaging and victimisation in a sample of adults.
4. To consider the relationship between camouflaging and offending behaviour and the association to autism and PDA in a sample of adults.
5. To consider the overall forensic implications of camouflaging behaviour within autistic and PDA individuals.

### **Structure of the Thesis**

This thesis consists of five linked components. In Chapter Two, the literature surrounding the prevalence of victimisation in autistic individuals is systematically reviewed. While systematic reviews have previously explored specific types of victimisation, such as bullying and cyberbullying, this review aimed to bridge a gap in the literature base examining various types of victimisation individuals. Meta-analyses of prevalence rates of victimisation are presented, and moderating factors are considered.

To inform methods used when researching victimisation, Chapter Three provides a critique of the JVQ (Hamby et al., 2005), a measure used in Chapter Four and referenced in Chapter Two. The JVQ is a widely used measure of victimisation, though its psychometric properties have not previously been critically examined to justify its use. Strengths and potential weaknesses are noted, and recommendations for improving the JVQ are made. The implications for Chapter Four are also considered.



Following this, Chapter Four presents an empirical study examining the relationship between camouflaging and victimisation to identify whether camouflaging is protective against victimisation. This includes exploring the association with autism and PDA traits. The study consists of measures of autism and PDA traits, camouflaging behaviours, symptoms of depression and anxiety, and victimisation experiences administered to a general population sample through an online survey. The interpretation of the results focuses on the influence of mental health difficulties in the relationship between camouflaging and victimisation.

Chapter Five examines the relationship between camouflaging and offending behaviour. As camouflaging can impact on available support and interventions for autistic individuals, camouflaging may influence the risk of offending behaviour. This study uses measures of camouflaging, offending behaviour, symptoms of depression and anxiety, autism and PDA traits to explore the relationship between camouflaging and offending behaviour in a general population sample. Implications of the results for within the Criminal Justice System are considered.

Based on the findings of Chapters Four and Five, additional analysis was conducted which is presented in Chapter Six. A structural equation model was developed which examined the relationship between victimisation and offending, considering potential direct and indirect associations with camouflaging, autism and PDA traits, and mental health difficulties.

Finally, Chapter Seven, the concluding chapter, synthesises the results presented in the thesis and draws overall conclusions about the importance of understanding camouflaging in autistic and PDA individuals.

## **Chapter Two**

### **Systematic Review**

#### **Prevalence of Victimisation in Autistic Individuals: A Systematic Review and Meta-Analysis**

## **Abstract**

Autistic individuals are at an increased risk of experiencing victimisation. To identify prevention strategies for this population, a clear picture of victimisation experiences is required. This systematic review aims to identify the prevalence of victimisation in autistic individuals considering a variety of victimisation types including bullying, sexual victimisation, and crime. The review considered experiences in both adults and children from clinical and community settings. Meta-analysis found a pooled prevalence rate of victimisation of 44% in autistic individuals. Subgroup analysis was conducted to examine moderating factors as high heterogeneity was present. Subgroup analysis found pooled prevalence rates for bullying to be 47%, 16% for child abuse, 40% for sexual victimisation, 13% for cyberbullying, and 84% for multiple forms of victimisation in autistic individuals, though heterogeneity remained. Correction for participants' age, reporter used, and the population which the sample was recruited from did not reduce heterogeneity. Although heterogeneity impedes the definitive interpretation of the findings, this review illustrates the need for strategies and interventions to reduce the incidence of victimisation and associated negative outcomes. Limitations of the included studies and of the review are discussed, as are the implications of the findings and directions for future research.

## **Introduction**

Victimisation, as defined in Chapter One (p. 8), generally refers to acts in which an individual is subject to cruel or unjust treatment. Research has found a high prevalence of victimisation in autistic people (Brown-Lavoie et al., 2014; Paul et al., 2018; Sreckovic et al., 2014). Autistic individuals report higher rates of bullying, child maltreatment, sexual victimisation, and crime victimisation than non-autistic individuals (Brown-Lavoie et al., 2014; Humphrey & Symes, 2010; Paul et al., 2018; Weiss & Fardella, 2018). The risk of victimisation may be increased due to factors associated with autism. For example, communication difficulties, such as misunderstanding non-verbal interactions or inappropriately responding in reciprocal conversations may influence the risk of victimisation (Hellström, 2019). Additionally, restricted, and repetitive behaviours may make individuals stand out from their peers, increasing their vulnerability (Sreckovic et al., 2014). Autistic people may be perceived as weaker or unable to defend themselves (Furey et al., 1994; Nettelback & Wilson, 2002) and may be more likely to be dependent on others (Furey et al., 1994), increasing their vulnerability. High levels of social isolation (Liptak et al., 2011; Orsmond et al., 2013) and stigma (Neely & Hunter, 2014) are also suggested to increase the risk of victimisation for autistic individuals.

The detrimental impact of victimisation has been well documented. For autistic individuals, bullying is associated with anxiety and depression (Mayes et al., 2013; Parker & Asher, 1987; Storch et al., 2012), low self-esteem (Reid & Batten, 2006), and suicidal ideation or attempts (Carter, 2009; Richa et al., 2014). Physical and sexual abuse have also been found to increase the risk of suicidal ideation or attempts in autistic people (Richa et al., 2014). Victimisation has also been associated with high levels of stress and symptoms of Post-

Traumatic Stress Disorder (Paul et al., 2018). Moreover, victimisation is associated with an increased risk of further victimisation (Pfeffer, 2016), potentially perpetuating a cycle of negative experiences for autistic individuals.

Given the increased risk of victimisation in this population and the evidenced detrimental outcomes, prevention is paramount. In England, several acts and policies have been implemented which may positively impact on the risk of victimisation for autistic individuals. For example, The Autism Act (2009) and the Fulfilling and Rewarding Lives strategy (HM Government, 2010) seek to increase the awareness and understanding of autism across public services and to improve access to services and support in the community. The 2014 update of the Fulfilling and Rewarding Lives strategy highlighted that autistic people require access to support in the Criminal Justice System if they are a victim, which includes providing training and guidance to Criminal Justice agencies on autism awareness (HM Government, 2014). Within this, it is stated that autistic individuals are entitled to an enhanced level of service if they are a victim of crime under the Code of Practice for Victims of Crime (Ministry of Justice, 2015). These measures largely target the support provided by the Criminal Justice System and social services, but more needs to be done to prevent victimisation through increased understanding of the factors which may contribute to an individual's involvement with these systems in the first place.

In 1998, the Code of Good Practice on Prevention of Violence Against Persons with Autism by Autism-Europe, an international association working to advance the rights of autistic people and improve their quality of life, recommended the need for prevention of violence and mistreatment perpetrated against autistic people. These guidelines suggested that educational programmes for autistic individuals and training for families and care

professionals would assist in the prevention of victimisation. Since then, several projects have been initiated to prevent victimisation in autistic individuals including the System for the Protection and Empowerment of Autistic Children as Victims of Abuse or as Unintentional Perpetrators (SPEAK UP; see the National Autistic Society, n.d.). The SPEAK UP project developed various activities including a pilot programme for the prevention of maltreatment of autistic children. However, an evaluation of this programme could not be identified. Research suggests that the victimisation of autistic individuals is an ongoing problem. In 2014, Hebron and Humphrey found that 77% of over 800 autistic children in the UK were currently experiencing bullying. Furthermore, the Crime Survey for England and Wales found that 9% of respondents with a 'social or behaviour impairment' (which included autism) had experienced sexual assault in the three years prior to 2018, which was higher than prevalence rates for individuals with other conditions (Office for National Statistics, 2019).

This suggests that, despite efforts, autistic individuals continue to experience victimisation. To inform interventions and prevention programmes, a clear understanding of the victimisation experiences of autistic individuals is required. Previous reviews of victimisation in autistic individuals have focussed on specific types of victimisation, such as bullying and cyberbullying (see for example, Beckman et al., 2020; Maïano et al., 2015). However, focusing on specific victimisation types prevents an understanding of the risk faced by this population in different areas. Providing an estimate of the overall victimisation rates for autistic individuals could illustrate an important social problem, identify gaps in the existing research, and direct efforts for preventing victimisation. This review considers a wide array of victimisation types to provide a quantitative synthesis of the prevalence of victimisation in autistic individuals.

## The Current Review

The current review comprises of a systematic review and meta-analysis synthesising empirical evidence concerning the prevalence of victimisation in individuals who have a diagnosis of autism, without a specific focus on the type of victimisation. This review aims to provide overall prevalence rates for victimisation in autistic individuals. Early versions of the systematic review protocol included three questions exploring the prevalence of victimisation, associated risk factors, and outcomes. However, a peer review process reflected that the inclusion of multiple questions prevented an in-depth exploration of each question. This review was revised to focus solely on the prevalence of victimisation to provide specific information allowing for comprehensive exploration of the findings. As a result, qualitative research was excluded from the systematic review as this would not likely include quantitative prevalence rates. The review examines the experiences of both adults and children worldwide across a variety of settings.

## **Method**

The review protocol was designed in line with Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidance (Shamseer et al., 2015; see Appendix F for completed PRISMA checklist). Details of the protocol were registered on PROSPERO and can be accessed at

[https://www.crd.york.ac.uk/PROSPERO/display\\_record.php?RecordID=151726](https://www.crd.york.ac.uk/PROSPERO/display_record.php?RecordID=151726)

## Eligibility Criteria

Studies were selected according to the following criteria:

1. *Participants:* Studies involving both adult and child participants were included.
2. *Condition:* The review included individuals diagnosed with autism, including Asperger's Disorder and Pervasive Developmental Disorder Not Otherwise Specified, diagnosed using all versions of the Diagnostic and Statistical Manual of Mental Disorders and the International Statistical Classification of Diseases and Related Health Problems, or those whereby the severity of symptoms reached the clinical threshold for autism assessed using validated instruments. For example, the Social Responsiveness Scale (Constantino & Gruber, 2005) measures autistic traits and has been shown to have predictive validity against the diagnostic criteria of autism (Chan et al., 2017).
3. *Outcome:* Studies reporting a prevalence rate of victimisation in various forms were included. This includes abuse, maltreatment, crime, and bullying.
4. *Study Designs:* Case studies and reports, book reviews, and systematic reviews were excluded. As stated above, only quantitative studies were sought.
5. *Other restrictions:* There were no restrictions by setting type, the timeframe of the publications, or language to widen the scope of the review. Published and unpublished materials were included to reduce publication bias.

### Information Sources and Search Strategy

Search strategies were developed using key words identified through scoping searches and controlled vocabulary. The search terms aimed to capture the array of possible victimisation experiences and encompass various terminologies used to describe autism. These are presented in Table 1. Searches were



conducted in September 2019. The databases searched were PsychINFO (via Ovid), MEDLINE (1946-present; via Ovid), EMBASE (via Ovid), CINAHL (via EBSCOhost), and the International Bibliography of the Social Science (via ProQuest). Unpublished theses were identified through DART Europe E-Thesis Portal, ProQuest Dissertations and Thesis A&I, and Open Grey. Reference lists of included studies or relevant reviews were also explored. An example search syntax is presented in Appendix A.

**Table 1**  
*Search Terms Included in the Systematic Search*

<b>Condition</b>	<b>Outcome</b>
Autism	Victim
Autism Spectrum Disorder	Abuse
Autism Spectrum Condition	Bully
Autistic	Maltreatment
Asperger	Discrimination
Asperger's Disorder	Neglect
Asperger Disorder	Trauma
Asperger's Syndrome	Crime victim
Asperger Syndrome	Adverse
ASD	Aggression
ASC	Crime
Autistic Disorder	

### Selection Process

A total of 17,079 records were identified through literature searching. 6567 duplicate records were removed, and the title and abstract of the remaining

10,512 were screened against the eligibility criteria, resulting in a further 10,221 exclusions.

In total, 291 titles met the inclusion criteria; thus, full reports were sought. Nine papers could not be accessed, and one paper could not be translated (see Appendix B). Authors of these papers were contacted but no response was obtained. Translation of one paper through an online translation service was unsuccessful, so online groups for students from the countries wherein the non-English paper was published were contacted to assist with translation, but no response was obtained. This may have an impact on the overall pooled prevalence of victimisation. One additional paper was identified through reference searching. The available full texts were reviewed to determine whether these met the inclusion criteria. Two hundred and forty-five records were subsequently excluded.

### Data Extraction

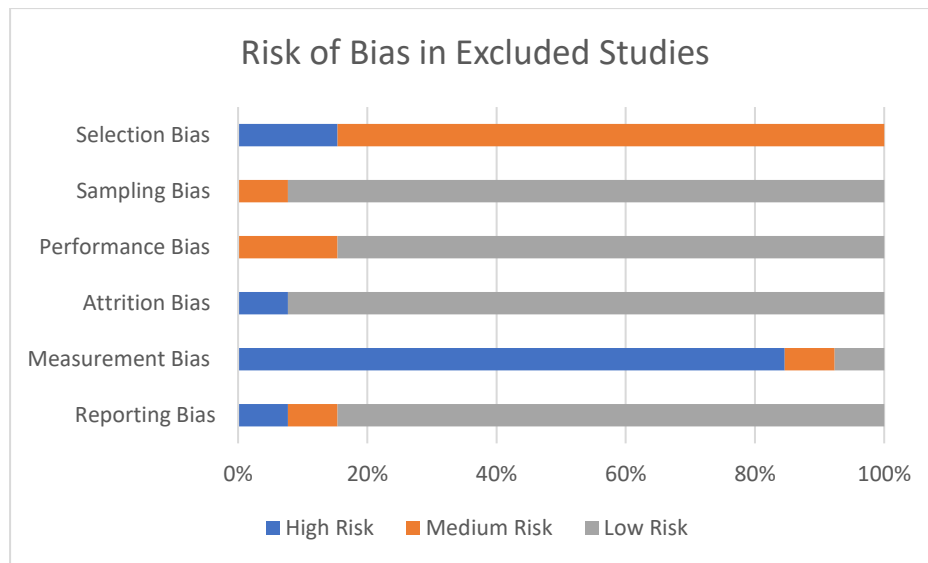
A data extraction form was used to extract data from the included studies (Appendix C). General information such as the type of publication, country of origin, and sources of funding were extracted. The characteristics and number of participants, study design, recruitment procedures, assessment tools, and statistical techniques used were also extracted, as were the results of the study analysis. Information relevant to risk of bias was documented during the data extraction process, including allocation procedures, concealment or blinding, and attrition rates.

### Quality Assessment

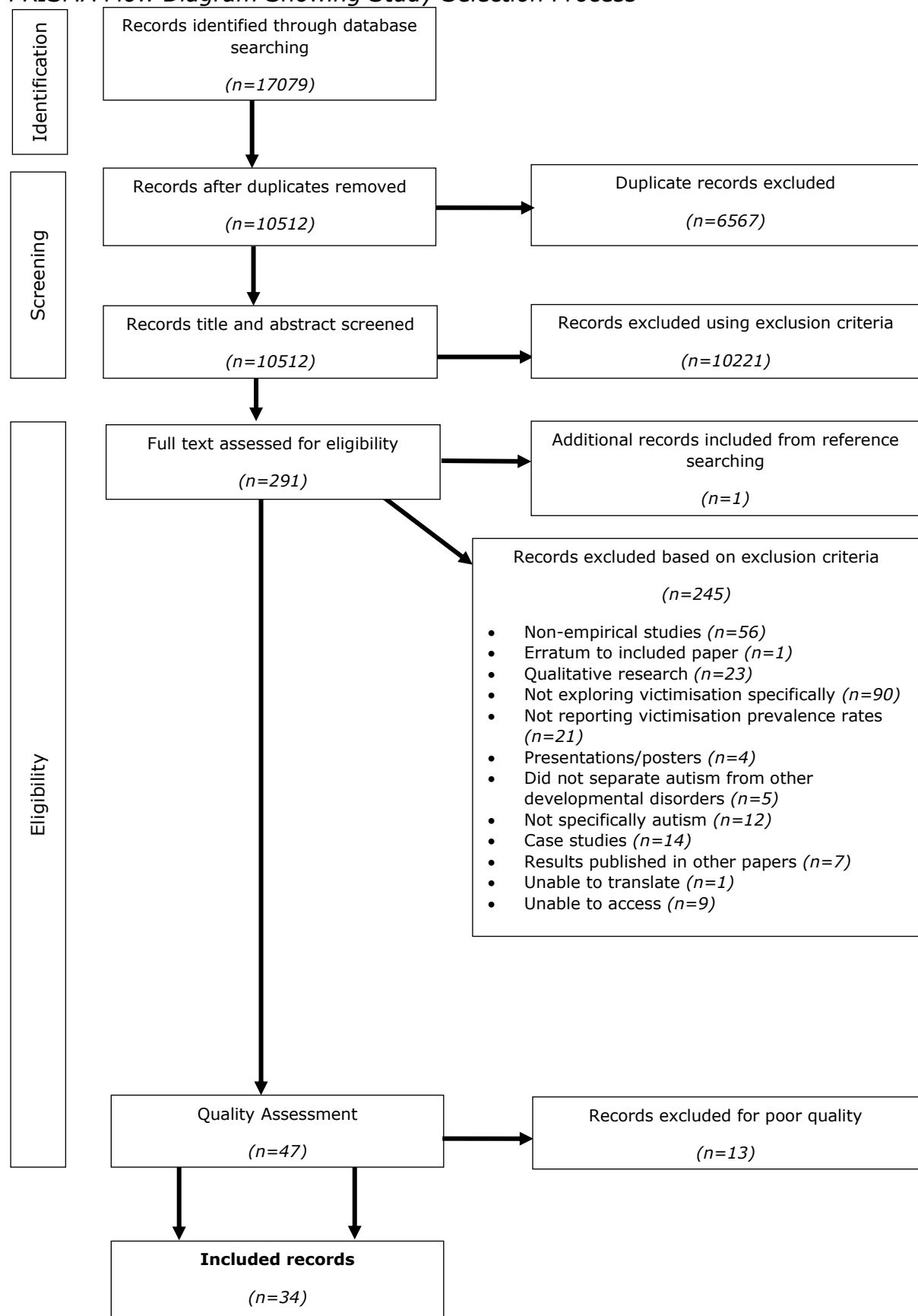
A quality assessment checklist was designed using Critical Appraisal Skills Programme (2018) Appraisal Checklists (Appendix D). The quality assessment considered the appropriateness of the study design to the research question, choice of outcome measure, statistical issues, and generalisability. This included consideration of the reliability of measures used, recruitment processes, and precision of the results. Risk of bias was separated into six types of bias: selection, sampling, performance, attrition, measurement, and reporting bias. Judgement on the possible risk of bias was rated as 'high risk', 'medium risk', and 'low risk' as per the Centre for Reviews and Dissemination (2008) guidance. If a study obtained a high-risk rating for any of the categories, it was excluded from the review. Although this was a stringent criterion, it ensured the included studies were of high quality. Quality assessments were completed by the reviewer (GT) and an independent party (LT) for improved reliability: no discrepancy between reviewers was found.

Forty-seven studies underwent quality assessment. Thirteen received at least one high-risk rating for bias and were excluded from the review (see Appendix E). The most common reason for a high-risk rating was potential measurement bias as the reliability and validity of measures used was not assessed and confounding variables were not considered or controlled for in the analysis. Figure 1 depicts the risk of bias present in the thirteen excluded studies. Thirty-four studies did not present a high risk of bias and were included in this review. The selection process is detailed in Figure 2.

**Figure 1**  
*Risk of Bias Graph for the 13 Excluded Studies*



**Figure 2**  
PRISMA Flow Diagram Showing Study Selection Process



## Results

### Study Characteristics

In total, 633,051 participants were involved in the 34 included studies, which included individuals with diagnoses of autism, Asperger's Syndrome, and Pervasive Developmental Disorder Not Otherwise Specified, and comparison groups of individuals with ADHD, intellectual disability, physical disabilities, and those without disabilities. Participant age ranged from one to 57 years.

Seventeen studies originated in the United States (US), three in the United Kingdom (UK<sup>iii,14, 26, 27</sup>), three in Taiwan<sup>9, 15, 17</sup>, three in Canada<sup>6, 7, 32</sup>, and two in Australia<sup>2, 18</sup>. One study was conducted in each of the following: Sweden<sup>3</sup>, China<sup>1</sup>, South Korea<sup>16</sup>, South America<sup>19</sup>, the Netherlands<sup>30</sup>, and France<sup>23</sup>.

Most studies were cross-sectional ( $n=27$ ). Three studies utilised a case-control design<sup>3, 23, 25</sup>, three utilised a cohort design<sup>12, 13, 17</sup>, and one was a prospective longitudinal study<sup>27</sup>. Seven studies recruited participants from the general population<sup>12, 13, 17, 18, 25, 26, 27</sup>. Eight studies utilised clinical samples from psychiatric units or inpatient/outpatient services<sup>1, 3, 4, 9, 15, 20, 21, 29</sup>. Eighteen studies recruited participants from the community through local schools, support groups, and autism services. One study used both a community and clinical sample<sup>23</sup>. Six studies utilised adult participants<sup>3, 5, 6, 11, 25, 33</sup>, whilst the remaining twenty-eight studies involved children and adolescents.

Victimisation was measured using questionnaires ( $n=28$ ), official reports<sup>12, 13, 18, 22</sup>, and clinical interviews<sup>3, 20</sup>. Questionnaires included the School Bullying Experience Questionnaire (Weiss et al., 2015), the Reynolds Bully Victimization Scale (Reynolds, 2003), the Social Vulnerability Questionnaire (Fisher et al., 2012), the Juvenile Victimization Questionnaire, including the Adult

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iii Superscript refers to Study Reference Number in Table 2.

Retrospective Version (Hamby et al., 2005), and author-designed questionnaires<sup>1, 2, 3, 5, 6, 10, 19, 23, 29, 30, 34</sup>. Ten studies utilised self-report only<sup>1, 3, 5, 6, 17, 25, 26, 27, 28, 33</sup>, eleven used parent-reports only<sup>4, 7, 11, 16, 19, 20, 21, 23, 24, 32, 34</sup>, seven used self- and parent-reports<sup>2, 8, 9, 10, 15, 29, 31</sup>, one used parent-and teacher-reports<sup>14</sup>, and one utilised teacher-, self-, and peer-reports of victimisation<sup>30</sup>. Time scales for previous victimisation ranged from 'current' experiences to experiences throughout the lifetime. The included studies are described in Table 2.

**Table 2**  
*Descriptive Information for Included Studies*

<b>Authors and Study Reference Number</b>	<b>Sample and Study Design</b>	<b>Sample Size</b>	<b>Diagnoses</b>	<b>Age Range</b>	<b>Time Frame</b>	<b>Type of Victimisation Examined and Prevalence Rates in Autism Group</b>	<b>Potential Bias Present</b>
Adams et al. (2016)  (Study 1)	Cross-sectional  Clinical sample from previous research, clinical registries, clinics, and hospitals	<i>N</i> =54 (100% male)	Asperger's Disorder ( <i>n</i> =21), Autism ( <i>n</i> =22), PDD-NOS ( <i>n</i> =9), and multiple autism diagnoses ( <i>n</i> =2)	10-17 years	Past month	Bullying ( <i>self-reported</i> 61%)	Possible selection bias as no power calculation reported.  Possible measurement bias as reliability and validated for objective measures.
Ashburner et al. (2019)  (Study 2)	Cross-sectional  Community sample from an Autism service	<i>N</i> =89 (86.5% male)	Asperger's Disorder ( <i>n</i> =44), autism ( <i>n</i> =26), PDD-NOS ( <i>n</i> =13), high-functioning Autistic Disorder ( <i>n</i> =4), and not specified ( <i>n</i> =2)	11-16 years	Past six months	Bullying ( <i>self-reported</i> 64%; <i>parent-reported</i> 70%) Cyberbullying ( <i>self-reported</i> 14%; <i>parent-reported</i> 13%)	Possible selection bias as no power calculation reported.  Possible measurement bias as low reliability found in bullying vignettes.
Bejerot & Humble (2013)  (Study 3)	Case-control study  Clinical sample from a specialised	<i>N</i> =277 (48% male)	autism ( <i>n</i> =93), ADHD ( <i>n</i> =128), and other severe psychiatric problems ( <i>n</i> =56)	18-57 years	In childhood	Bullying ( <i>self-reported</i> 43.5%)	Possible selection bias as no power calculation reported.



	autism and ADHD outpatient psychiatric clinic						Possible measurement bias as reliability of measures not assessed
Brenner et al. (2018) (Study 4)	Cross-sectional  Clinical sample from speciality psychiatric hospitals	<i>N</i> =350 (79% male)	Autism ( <i>n</i> =350)	4-21 years	Lifetime	Child abuse ( <i>parent-reported</i> 28.3%)	Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not assessed.
Brown et al. (2017) (Study 5)	Cross-sectional  Community sample of university students	<i>N</i> =34,879 (of those with autism 59% male)	Autism ( <i>n</i> =158), other disability ( <i>n</i> =7018), and no disability ( <i>n</i> =27,703).	Not reported – undergraduate students	Last five years	Sexual victimisation: Unwanted sexual contact ( <i>self-reported</i> 8.2%)	Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not assessed.
Brown-Lavoie et al. (2014) (Study 6)	Cross-sectional  Community sample from agencies that support autistic individuals and an online system	<i>N</i> =212 (Autism group 62% male; control group 56.4% male)	Autism ( <i>n</i> =52), Asperger's Syndrome ( <i>n</i> =39), PDD-NOS ( <i>n</i> =4), and typically developing individuals ( <i>n</i> =117)	19-43 years	Lifetime	Total Sexual Victimization ( <i>self-reported</i> 78%) Unwanted sexual contact (70%) Sexual coercion (39%) Attempted rape (27%) Rape (31.5%)	Possible selection bias as no power calculation reported.

Cappadocia et al. (2012) (Study 7)	Cross-sectional  Community sample via convenience and snowball sampling	N=192 (85% male)	Asperger Syndrome (54%), high functioning Autism (14%), PDD-NOS (13%), and Autism (19%)	5-21 years	Past month	Bullying ( <i>parent-reported</i> 77%) Physical victimisation (42%) Verbal victimisation (68%) Social victimisation (69%) Cyber victimisation (10%)	Possible selection bias as no power calculation reported.
Chan et al. (2018) (Study 8)	Cross-sectional  Community sample from local primary schools	N=4114 (57.3% male)	Physical disability ( <i>n</i> =309), learning and developmental disabilities ( <i>n</i> =834), intellectual developmental disability ( <i>n</i> =389), internalising disorder/mental illness/mood disorder ( <i>n</i> =43), and autism ( <i>n</i> =330)	10-18 years	Past year	Any victimisation ( <i>parent and child report combined</i> 47%) Bullying (21%) Cyberbullying (22%) Child maltreatment (23.5%) Conventional crime (29.4%) Peer or sibling victimisation (21.5%) Indirect/witnessed victimisation (5.9%)	Possible selection bias as no power calculation reported.
Chou et al. (2019) (Study 9)	Cross-sectional  Clinical sample from child psychiatry outpatient clinics	N=219 (87.7% male)	Autism ( <i>n</i> =219)	11-18 years	Past year	Bullying ( <i>self-report</i> 17.8%; <i>parent-report</i> 23.7%).	Low risk of bias.
Doyle (2016) (Study 10)	Cross-sectional  Community sample from local schools	N=101 (86% male)	Autism or Autistic disorder (43%), Asperger's Syndrome (33%), PDD-NOS (21%), and 'on the Autism	10-18 years	Past six months	Bullying ( <i>self-reported</i> 28%-72%; <i>parent-reported</i> 35%-85%).	Possible selection bias as no power calculation reported.

			spectrum but unclear diagnosis' (3%).				
Fisher et al. (2013) (Study 11)	Cross-sectional  Community sample of autism groups and services	N=103 (Autistic group: 82% male; Williams syndrome group: 52.6% male; Down syndrome group 41.7% male)	Autism (n=29), Williams syndrome (n=38), and Down syndrome (n=36)	Mean age (SD): Autism 25.38 years (10.39), Williams Syndrome 25.39 years (6.72), Down Syndrome 23.67 years (7.71)	Lifetime	Total victimisation ( <i>parent report</i> 72%) Monetary crime/theft (38%) Physical or sexual abuse (17%) Teasing or persuasion (35%)	Possible selection bias as no power calculation reported.
Fisher et al. (2019) (Study 12)	Cohort study  General population sample	N=24,306 (Autistic group 82.7% male; control group 78.2% male)	Autism (n=387) and control children without a disability (n=23,919)	10 years	Lifetime	Child maltreatment ( <i>substantiated maltreatment in official reports</i> 3.9%)	Possible selection bias as no power calculation reported.
Hall-Lande et al. (2015) (Study 13)	Cohort study  General population sample	N=9536 (gender not reported)	Autism (n=162), other disability (n=3025), and no disability (n=6349)	1-20 years	Lifetime	Neglect (54%) Physical abuse (35%) Sexual abuse (8.3%) Mental injury and emotional harm (1.3%) Medical neglect (0.6%)	Possible selection bias as no power calculation reported.
Hebron & Humphrey (2014) (Study 14)	Cross-sectional  Community sample from local schools	N=841 (722 teachers, 86% male; 119 parents, 82% male)	Autism (n=841)	5-15 years	Current	Bullying ( <i>parent-report</i> 77.7%; <i>teacher-report</i> 65.4%).	Low risk of bias.
Hu et al., (2019) (Study 15)	Cross-sectional  Clinical sample from child psychiatry outpatient clinics	N=219 (88% male)	Autism (n=219)	11-18 years	Past year	Cyberbullying ( <i>total</i> 14.6%; <i>self-report only</i> 13.7%; <i>parent-report only</i> 2.3%).	Possible measurement bias as reliability and validity not assessed for all measures.

Hwang et al. (2018) (Study 16)	Cross-sectional  Community sample from local schools	<i>N</i> =12,414 (Autism without ID 80.2% male; Autism with ID 73.3% male; social and communication disorders 75% male; and control group 48% male)	Autism without ID ( <i>n</i> =71), Autism with ID ( <i>n</i> =15), social communication disorders ( <i>n</i> =8), and control group ( <i>n</i> =12,320)	7-12 years	Current	Bullying ( <i>parent-report, autism with ID 20%; autism without ID 24.6%</i> ).	Possible selection bias as no power calculation reported.
Lung et al. (2019) (Study 17)	Cohort study  General population sample	<i>N</i> =1561 (54.7% male)	Learning disability ( <i>n</i> =25), ID ( <i>n</i> =11), ADHD ( <i>n</i> =33), Autism ( <i>n</i> =8), and no reported disability ( <i>n</i> =1484)	12 years	Lifetime	Bullying ( <i>self-report 62.5%</i> )	Possible selection bias as no power calculation reported.
Maclean et al. (2017) (Study 18)	Cross-sectional  General population sample	<i>N</i> =524,534 (51% male)	ID ( <i>n</i> =8551), Down syndrome ( <i>n</i> =552), birth defect/cerebral palsy ( <i>n</i> =30090), Autism ( <i>n</i> =2253), conduct disorder ( <i>n</i> =3924), and mental or behavioural disorder ( <i>n</i> =19,813)	Not reported – children born between 1990 and 2010	Lifetime	Child maltreatment ( <i>substantiated allegation 0.8%</i> )	Low risk of bias.
Mallory (2014) (Study 19)	Cross-sectional  Community sample from support groups	<i>N</i> =111 (59.5% male)	Autism ( <i>n</i> =47), without disability ( <i>n</i> =32), and other disability ( <i>n</i> =32)	9-15 years	Past month	Peer victimisation ( <i>parent-report 61.7%</i> )	Possible selection bias as no power calculation reported.
Mandell et al. (2005) (Study 20)	Cross-sectional  Clinical sample from the national evaluation of the comprehensive community	<i>N</i> =156 (69% male)	Autism or Asperger's Disorder ( <i>n</i> =156)	Mean age 11.9 years (SD=3.8)	Lifetime	Child abuse total ( <i>parent-report 30.7%</i> ) Physical abuse ( <i>14.1%</i> ) Sexual abuse ( <i>12.2%</i> )	Possible measurement bias as reliability and validity of measures not explored.

	mental health services					Physical and sexual abuse (4.4%)	
Mayes et al. (2015) (Study 21)	Cross-sectional  Clinical sample from outpatient diagnostic clinics and from an epidemiological study on sleep	N=1698 (66% male)	Autism (n=329), ADHD Combined (n=566), ADHD Inattentive (n=235), depression/anxiety (n=71), eating disorder (n=90), ID (n=230), and control group (n=186)	Mean age autism 8.6 years, ADHD Combined 8.9 years, ADHD Inattentive 9.3 years, depression/anxiety 11.1 years, eating disorder 13.8 years, intellectual disability 8.6 years, and control group 8.7 years.	Past two months	Bullying ( <i>parent-report</i> 75.7%)	Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not assessed.
McDonnell et al., (2019) (Study 22)	Cross-sectional  Community sample from an Autism network across 23 countries	N=4988 (Autism group 84.5% male; Autism and ID group 77.7% male; ID group 63.6% male; and control group 81% male)	Autism (n=316), autism and ID (n=291), ID (n=1280), and control group (n=3101)	Data collected from between age 2 and 8 years to age 18 years	Lifetime	Substantiated child maltreatment ( <i>official records; autism only 20.89%; autism and ID 30.93%</i> )	Possible selection bias as no power calculation reported.
Paul et al. (2018) (Study 23)	Case-control study  Community sample from local schools and clinical sample from autism clinics	N=92 (85% male)	Autism (n=39) and control (n=53)	7-18 years	Past year and lifetime	Any victimisation ( <i>parent-report; past year 71.8%; lifetime 94.9%</i> )  Bullying: Peer or sibling victimisation ( <i>lifetime 46.2%</i> ).  Sexual victimisation (lifetime): Sexual assault by known adult (2.6%)	Possible selection bias as no power calculation reported.  Possible sampling bias as groups taken from different populations (community vs clinical).  Possible measurement

						Non-specific sexual assault (0%) Rape (attempted or completed; 0%) Flashing/sexual exposure (2.6%) Verbal sexual harassment (7.7%)  Conventional crime (lifetime): Robbery (10.3%) Personal theft (23.1%) Vandalism (25.6%) Assault with weapon (23.1%) Assault without weapon (56.4%) Attempted assault (38.5%) Kidnapping (0%) Bias attack (30.8%) Gang or group assault (10.3%) Peer or sibling assault (66.7%) Nonsexual genital assault (5.1%) Dating violence (2.6%) Witness to domestic violence (2.6%) Witness to parent assault of sibling (5.1%)	bias as reliability of measures not explored.
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						Witness to assault with weapon (12.8%) Witness to assault without weapon (28.2%) Burglary of family household (15.4%) Murder of family member or friend (5.1%) Witness to murder (0%) Exposure to random shootings, terrorism, or riots (0%) Exposure to war or ethnic conflict (0%)	
Pfeffer (2016)  (Study 24)	Cross-sectional  Community sample from online participant recruitment network	<i>N</i> =262 (78% male)	Autism or Autistic Disorder ( <i>n</i> =111), Asperger's Syndrome ( <i>n</i> =74), PDD-NOS ( <i>n</i> =4), Autism Spectrum Disorder ( <i>n</i> =13), and "my child no longer has autism" ( <i>n</i> =1)	5-18 years	Lifetime and past year	Any victimisation ( <i>parent-report</i> ; 82.1% <i>past year</i> ; 88.3% <i>lifetime</i>  Any Property Crime ( <i>past year</i> 49.0%; <i>lifetime</i> 64.2%): Robbery (34.4%; 49.2%) Theft (24.4%; 38.7%) Vandalism (26.9%; 40.7%)  Any assault/bullying ( <i>past year</i> 74.%; <i>lifetime</i> 83.3%)	Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not examined and confounding variables not controlled for.

						<p>           Assault with            weapon (12.9%;            23.5%)            Assault without            weapon (38.4%;            52.5%)            Attempted assault            (24.4%; 33.5%)            Gang or group            assault (4.4%;            9.6%)            Kidnapping (0.7%;            5.5%)            Bias attack            (13.4%; 22%)            Bullying (32.8%;            40.4%)            Teasing or            emotional bullying            (52.8%; 61.6%)            Dating violence            (0.8%; 2.4%)              Any            indirect/witnessed            crime (<i>past year</i>            20.4%; <i>lifetime</i>            30%)            Theft from            household (8.4%;            16.1%)            Witness to            domestic violence            (2%; 8.4%)            Witness physical            abuse (2%; 4.4%)            Witness to assault            with weapon            (4.4%; 7.2%)         </p>	
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						<p>Witness to assault without weapon (12.4%; 15.6%)  Someone close murdered (0.4%; 2.4%)  Witness to murder (0%; 0.8%)  Exposure to shootings, terrorism, or riots (0.4%; 2.4%)  Exposure to war or ethnic conflict (0%; 0.8%)</p> <p>Any sexual assault (past year 7.6%; lifetime 14%)  Sexual assault by a known adult (0.8%; 2.4%)  Sexual assault by an adult stranger (0%; 1.6%)  Sexual assault by a peer (2%; 6.4%)  Rape, completed or attempted (1.2%; 3.6%)  Flashing or sexual exposure (1.2%; 5.2%)  Sexual harassment (4.8%; 8.4%)  Statutory sexual offence (0.4%; 2%)</p> <p>Any child maltreatment</p>	
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						<p>(past year 36%; lifetime 50.4%) Physical abuse (11.6%; 20.6%) Sexual abuse by known adult (0.8%; 2.4%) Psychological or emotional abuse (31.6%; 43.7%) Neglect (2.8%; 9.2%) Custodial interference or abduction (1.2%; 4.8%)</p>	
Roberts et al. (2015)  (Study 25)	Case-control study  General population sample of nurses	N=1077 (100% female)	In the highest quintile for autistic traits (n=213)	Birth year 1957-1958, data collected 2008 (Approx. 50 years)	In childhood	<p>Physical and emotional abuse (self-reported 23.9%)  Sexual abuse (self-reported 40.1%)</p>	<p>Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not explored.</p>
Rowley et al. (2012)  (Study 26)	Cross-sectional  General population sample from larger study	N=180 (88% male in autism group – not reported for other groups)	Autism (n=100; only 89 provided victimisation scores), ID (n=43), language disorder (n=10), hyperkinetic disorder (n=13), and neuro-developmental conditions (n=14)	10-12 years	Past six months/past school year	Bullying (self-reported 6.7%)	<p>Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not reported and confounding</p>

							variables not controlled for in analysis.
Toseeb et al. (2019) (Study 27)	Prospective longitudinal study  General population sample	<i>N</i> =8411 (autism group 78% male; control group 50% male)	Autism ( <i>n</i> =231) and controls ( <i>n</i> =8180)	14 years (measures taken at 11 and 14 years)	Current	Sibling bullying ( <i>self-reported age 11 20%; age 14 8%</i> ).	Possible selection bias as no power calculation reported.
Twyman et al. (2010) (Study 28)	Cross-sectional  Community sample from local schools and speciality clinics	<i>N</i> =296 (No diagnosis 42.5% male; cystic fibrosis 40.9% male; autism 78.1% male; learning disorders 70.6% male; ADHD 62% male; behavioural or mental health disorders 54.5% male)	No diagnosis ( <i>n</i> =73), cystic fibrosis ( <i>n</i> =22), autism ( <i>n</i> = 32), learning disorders ( <i>n</i> =32), ADHD ( <i>n</i> =100), and behavioural or mental health disorders ( <i>n</i> =33)	8-17 years	Current	Bullying ( <i>self-report 29%</i> )	Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not explored.
Ung et al. (2016) (Study 29)	Cross-sectional  Clinical sample from local support groups and outpatient clinics	<i>N</i> =81 (76.5% male)	Autism ( <i>n</i> =79 children, 81 parents)	9-17 years	Past year	Cyber bullying ( <i>parent- and self-report 11.4%</i> )	Low risk of bias.
van Roekel et al. (2010) (Study 30)	Cross-sectional  Community sample from special education schools	<i>N</i> =254 (91% male)	Autism ( <i>n</i> =230) and controls ( <i>n</i> =24)	12-19 years	Current	Bullying ( <i>teacher-report 30%; peer-report 7%; self-report 17%</i> ).	Possible selection bias as no power calculation reported.

							Possible measurement bias as confounding variables not controlled for.
van Schalkwyk et al. (2018) (Study 31)	Cross-sectional  Community sample from conference attendees	N=35 (63% male)	Autism Spectrum Disorder ( <i>n</i> =12), Asperger's Syndrome ( <i>n</i> =9), PDD-NOS ( <i>n</i> =7), and Autism ( <i>n</i> =5)	Mean age 16.4 years (SD=1.58)	Past month	Bullying ( <i>parent-report</i> 31%; <i>self-report</i> 51%).	Possible selection bias as no power calculation reported.  Possible measurement bias as reliability of measures not assessed.
Weiss et al. (2015) (Study 32)	Cross-sectional  Community sample via convenience and snowball sampling	N=101 (75% male)	Asperger's Syndrome (55%), High Functioning Autism (14%), PDD-NOS (11%), and Autism (19%).	12-21 years	Past month	Bullying ( <i>parent-reported</i> 71%)	Possible selection bias as no power calculation reported.
Weiss & Fardella (2018) (Study 33)	Cross-sectional  Community sample from programs and organisations that support autistic people, online autism communities, and academic support groups at colleges and universities	N=87 (Autism group 42.5% male, control group 50% male)	Autism ( <i>n</i> =45) and control group ( <i>n</i> =42)	18-54 years	Lifetime	Any victimisation ( <i>self-reported; in childhood</i> 100%; <i>in adulthood</i> 91.1%)  Any Maltreatment ( <i>in childhood</i> 80%; <i>in adulthood</i> 64.4%) Physical abuse (57.8%; 40%) Psychological or emotional abuse (62.2%; 38.1%)	Possible selection bias as no power calculation reported.

						<p>Neglect (<i>in childhood only</i>; 20%)</p> <p>Custodial interference or family abduction (<i>in childhood only</i>; 11.1%)</p> <p>Any sexual victimisation (<i>in childhood 55.6%; in adulthood 46.7%</i>)</p> <p>Sexual assault by a known adult (15.6%; 24.4%)</p> <p>Sexual assault, unknown adult (6.7%; 13.3%)</p> <p>Sexual assault, with peer (<i>in childhood only</i>; 26.7%)</p> <p>Rape, attempted or completed (13.3%; 28.9%)</p> <p>Flashing or sexual exposure (20%; 17.8%)</p> <p>Sexual harassment (35.6%; 26.7%)</p> <p>Sexual interactions with someone over 18 (<i>in childhood only</i>; 6.7%)</p> <p>Any property crime (<i>in childhood 95.8%; in adulthood 55.8%</i>)</p>	
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						Robbery (90.9%; 20%) Theft (68.9%; 51.1%) Vandalism (68.2%; 17.8%)  Any physical assault ( <i>in childhood</i> 95.6%; <i>in adulthood</i> 60%) Assault with a weapon (53.5%; 6.7%) Assault without a weapon (82.2%; 44.4%) Attempted assault (48.9%; 17.8%) Kidnap, attempted or completed (11.1%; 0%) Bias attack (15.6%; 4.4%) Physical abuse (57.8%; 40%) Assault by group or gang of peers (51.1%; 6.7%) Genital assault (46.7%; 4.4%) Dating violence (6.7%; 26.7%)  Any peer or sibling victimisation ( <i>in childhood</i> 97.8%) Any peer or co-worker victimisation ( <i>in adulthood</i> 60%)	
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						<p>Assault by group or gang (51.1%; 6.7%)</p> <p>Peer/sibling assault (<i>childhood only</i> 77.8)</p> <p>Genital assault (46.7%; 4.4%)</p> <p>Bullying (75.6%; 26.7%)</p> <p>Teasing, emotional bullying (97.8%; 60%)</p> <p>Dating violence (6.7%; 26.7%)</p> <p>Any witnessed/indirect victimisation (<i>in childhood</i> 77.8%; <i>in adulthood</i> 57.8%)</p> <p>Witness domestic violence (17.8%; 8.9%)</p> <p>Witness physical abuse (22.2%; 6.7%)</p> <p>Witness assault with a weapon (37.8%; 13.3%)</p> <p>Witness assault without a weapon (59.1%; 35.6%)</p> <p>Household theft (50%; 22.2%)</p> <p>Someone close murdered (0%; 11.1%)</p> <p>Witness murder (2.3%; 6.7%)</p>	
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						Exposure to shooting, bombs, riots (9.1%; 13.3%)	
Zablotsky et al. (2014) (Study 34)	Cross-sectional  Community sample from online network	N=1221 (77.8%-88.1% male – grouped by bullying involvement)	Autistic disorder (n=487), Asperger's Syndrome (n=294), and PDD-NOS and other autism grouped (other autism; n=434).	6-15 years	Past month and Lifetime	Bullying ( <i>parent-reported; past month 38%; lifetime 63%</i> ).	Possible selection bias as no power calculation reported.

*ADHD=Attention Deficit Hyperactivity Disorder; ID=Intellectual Disability; PDD-NOS=Pervasive Developmental Disorder Not Otherwise Specified.*

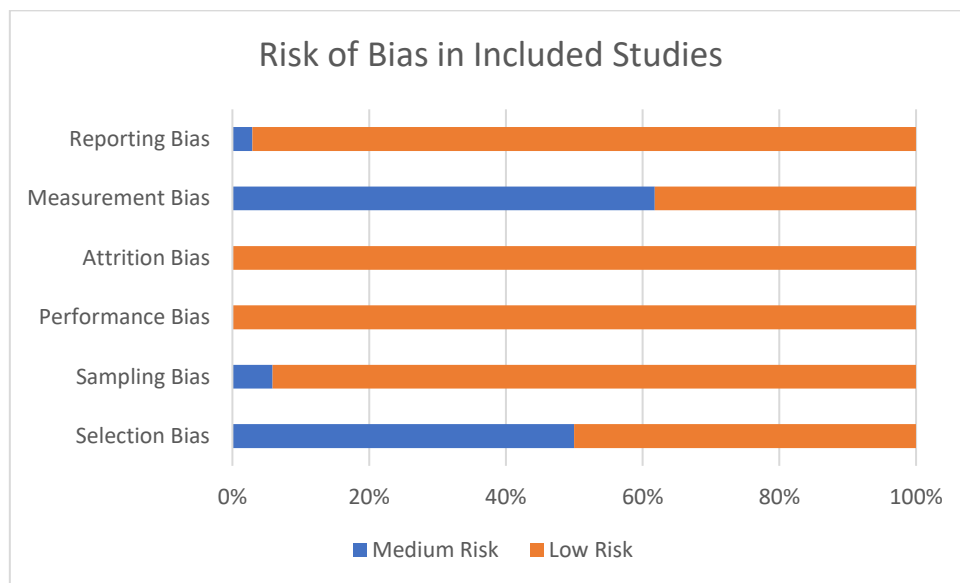


### Risk of Bias

Although studies considered to be at high risk for any type of bias were excluded, there was some evidence of bias in the included studies which is presented in Figure 3. The most common types of bias present were measurement and selection bias.

**Figure 3**

*Risk of Bias Graph for the 34 Included Studies*



### Meta-Analysis

The primary measure of interest in this review was prevalence rate of victimisation. These were integrated across studies using a meta-analytic technique. This required the double arcsine square root transformation method to stabilise the variance (Barendregt et al., 2013). Prevalence of victimisation rates across the studies were pooled using the inverse-variance heterogeneity model. To simplify interpretation, the results were back transformed to natural proportions. A random effects model was used to run the meta-analyses as it was anticipated that there will be study-level variability. Homogeneity was

assessed using the  $I^2$  statistic. All analyses were performed using MetaXL version 5.3 (EpiGear International, 2016).

There were several considerations required when determining the data to be included in the meta-analysis due to study-level methodological factors. Firstly, in cases wherein the study measured victimisation in the past year and in the participants lifetime (Paul et al., 2018; Pfeffer, 2016), prevalence rates for lifetime victimisation were included in the meta-analysis as this incorporated past-year victimisation. Secondly, for studies wherein multiple prevalence rates are provided due to utilising multiple reporters, decisions were made on a case-by-case basis with consideration of literature examining the validity and reliability of different reporters. For instance, although in some studies self-report from autistic individuals has been considered to lack reliability (Mazefsky et al., 2011), researchers have found validity in the self-report of autistic individuals and suggest that self-report in this population can provide more comprehensive assessments of internal experiences than parent-report (Keith et al., 2019; van Roekel et al., 2010). Moreover, parents may underreport bullying (Holt, Kaufman Kantor, et al., 2008) as many children do not disclose these experiences to adults (Unnever & Cornell, 2004; Waasdorp & Bradshaw, 2011). Peers may not witness victimisation that occurs (van Roekel et al., 2010) and classmates and teachers may interpret autistic behaviours as bullying (Chou et al., 2019), affecting their reporting of victimisation. The reliability of informant reports could also be influenced by the age of the participants. Younger children may be more likely to seek support from parents or teachers (Waasdorp & Bradshaw, 2011) and older children may be less likely to report their victimisation experiences to parents (van Schalkwyk et al., 2018).

In their sample of adolescents, Ashburner et al. (2019) found no significant difference between self- and parent-reports of bullying and cyberbullying victimisation. Self-reported bullying and cyberbullying from this study was therefore included in the meta-analysis as the self-report is likely a reliable report of experiences and will include additional experiences not reported to parents. These were included as two separate prevalence rates (A=bullying, B=cyberbullying) as this is how the data is presented by the authors. Similarly, Hebron and Humphrey (2014) found a positive correlation between parent- and teacher-reports of bullying victimisation. Both prevalence rates were explored in the meta-analysis and sensitivity analysis identified that neither had a substantial effect on the heterogeneity of prevalence rates. As parents may witness bullying that occurs outside of the classroom, parent-reported data was included in the final meta-analysis. Hu et al. (2019) found low agreement between parent- and self-reported cyberbullying victimisation, as did van Schalkwyk et al. (2018) and Chou et al. (2019) with bullying victimisation. Similarly, van Roekel et al. (2010) found low agreement between teacher-reported bullying victimisation and peer- and self-reported victimisation. Given the participants' age in these studies (adolescents), it is possible that parents and teachers are not aware of bullying experiences as older children may be less likely to disclose these experiences (van Schalkwyk et al., 2018), especially in the case of cyberbullying (Hu et al., 2019). Thus, self-reported victimisation was favoured for inclusion in the meta-analysis for these studies.

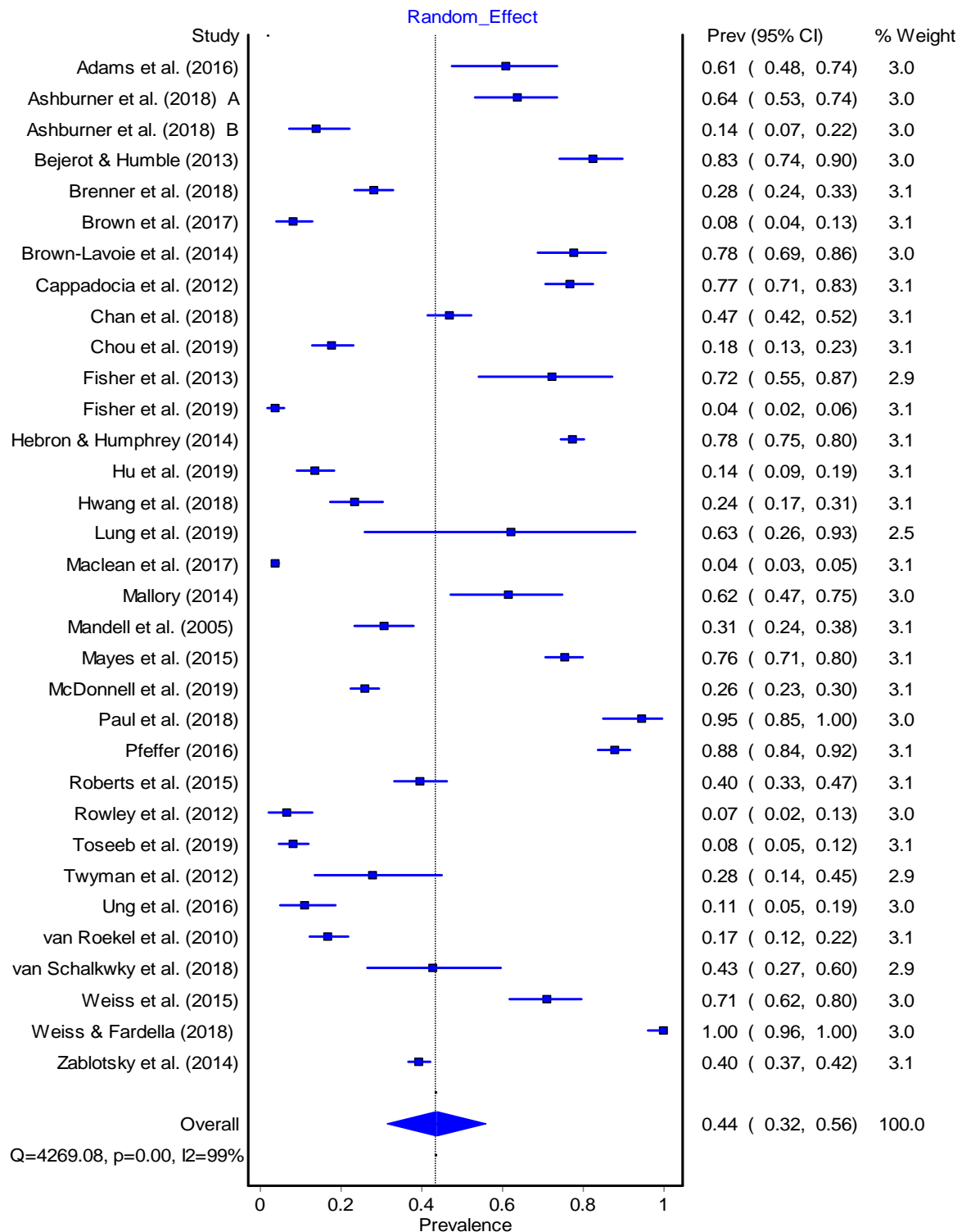
Thirdly, Toseeb et al. (2019) provided prevalence rates for current experiences of bullying at two time points for the same sample. In this case, the most recently captured prevalence rate was used in the meta-analysis. Finally, two studies were not included in the meta-analysis due to the nature of the

prevalence rates presented. Doyle (2016) provided prevalence rates for specific types of bullying behaviours rather than an overall prevalence rate for bullying. For example, “a teen left them out of an activity they really wanted to be included in” (Doyle, 2016, Table 1, p. 48). Thus, it is not possible to synthesise this data into an overall prevalence rate. Hall-Lande et al. (2016) provided prevalence rates for types of maltreatment experienced by a sample of children who had *all* been maltreated. These results would influence the meta-analysis as the sample would be biased to only victimised children, so these results are not included in the meta-analysis. However, these two studies provide useful information regarding prevalence of victimisation in autistic individuals and will be qualitatively synthesised.

### *Prevalence of Victimisation*

The pooled prevalence of victimisation in autistic individuals was 44% (95% CI, 32% to 55%; Figure 4). There was substantial heterogeneity between the studies ( $I^2=99\%$ ). Sensitivity analysis indicated that no single study had a substantial impact on heterogeneity. One way of investigating heterogeneous results is subgroup analysis which involves splitting the data into different subgroups to make comparisons between them (Deeks et al., 2021). Thus, subgroup analysis was conducted on potential moderating variables: participants’ age, type of victimisation, population the sample was recruited from, and the reporter used. Subgroup analysis was chosen over meta-regression as all moderator variables were categorical.

**Figure 4**  
*Pooled Prevalence Rates for Reported Victimisation*



*Ashburner et al. (2019) A=Bullying; Ashburner et al. (2019) B=Cyberbullying.*

Results of the subgroup analysis are presented in Table 3. Subgroup analysis of victimisation type using 33 samples identified a pooled prevalence rate of 47% for bullying victimisation. Doyle (2016) found the most frequent types of bullying behaviours experienced by autistic children were being left out of activities (72%), being teased (50%), and being threatened or beaten up (43%). The pooled prevalence rate for child abuse was 16%. Hall-Lande et al. (2015) found that in autistic children who had experienced abuse, 5.8% had experienced neglect, 35% physical abuse, 8.3% sexual abuse, 1.3% mental injury and emotional harm, and 0.6% medical neglect. Pooled prevalence rates were 40% for sexual victimisation, 13% for cyberbullying, and 84% for multiple forms of victimisation measured altogether (any victimisation category). There was substantial heterogeneity in all these subgroups, except for cyberbullying ( $I^2=0\%$ ).

Age of participants was grouped into two categories: children/adolescents and adults. Subgroup analysis of age using 33 samples identified a pooled prevalence rate of 39% for studies utilising child or adolescent participants and 66% in studies using adult participants. Subgroup analysis of the reporter of victimisation used was conducted using 33 samples. Pooled prevalence of victimisation was 34% for self-reporters, 63% for parent-reporters, and 12% for official records. Substantial heterogeneity was present across all subgroups.

For the eight studies utilising a clinical sample, the pooled prevalence rate for victimisation was 39%. In 17 studies using a local community sample, pooled prevalence rate for victimisation was 54%. In six studies using a general population sample, the pooled prevalence rate of victimisation was 14%. Substantial heterogeneity was present across all subgroups.

Another possible moderating factor in the prevalence of victimisation of autistic individuals is whether an individual also has a learning disability. Of the studies included in the meta-analysis, 13 studies did not report on the cognitive abilities of the participants and several studies also used a sample with a wide range of intellectual abilities (for instance, Brenner et al. (2018) report verbal IQ scores to range from 30 to 125). Thus, it is difficult to examine the potential effect of learning disability status. Nevertheless, ten studies reported their samples to be “high functioning” or that the sample scored greater than 70 on a validated measure of intellectual ability<sup>3, 6, 9, 15, 21, 23, 29, 30, 31, 33</sup> and two studies provided separate prevalence rates for those with and without learning disability (Hwang et al., 2018; McDonnell et al., 2019). Thus, using 14 sets of data from the included studies, pooled prevalence rates of victimisation for autistic individuals without a learning disability was 49% and 28% for autistic individuals with a learning disability.

**Table 3**  
*Pooled Prevalence Rates and  $I^2$  for Subgroup Analysis of Moderating Variables*

<b>Subgroup Analysis (Number of studies)</b>	<b>Pooled Prevalence</b>	<b>95% Confidence Intervals</b>	<b><math>I^2</math></b>
<b>Victimisation Type (<math>n=33</math>)</b>			
Bullying ( $n=17$ )	47%	33% - 61%	99%
Child Abuse ( $n=5$ )	16%	4% - 31%	99%
Sexual Victimisation ( $n=3$ )	40%	2% - 83%	99%
Cyberbullying ( $n=3$ )	13%	10% - 17%	0%
Any Victimisation ( $n=5$ )	84%	59% - 100%	98%
<b>Participant Age (<math>n=33</math>)</b>			
Children/Adolescents ( $n=27$ )	39%	26% - 52%	99%
Adults ( $n=6$ )	66%	31% - 96%	99%
<b>Reporter (<math>n=32</math>)</b>			
Self ( $n=18$ )	34%	21% - 49%	99%
Parent ( $n=12$ )	63%	48% - 77%	99%
Official records ( $n=2$ )	12%	0% - 40%	99%
<b>Sample (<math>n=31</math>)</b>			
Clinical ( $n=8$ )	39%	19% - 60%	98%
Local Community ( $n=17$ )	54%	38% - 69%	99%
General Population ( $n=6$ )	14%	4% - 26%	98%
<b>Learning Disability Status (<math>n=14</math>)</b>			
Without Learning Disability ( $n=12$ )	49%	29% - 70%	99%
With Learning Disability ( $n=2$ )	28%	20% - 38%	36%



As seen in Table 3, there is substantial heterogeneity in the prevalence rates across the subgroup analyses. Thus, further subgroup analysis was conducted within subgroups (e.g., adults only, bullying only). Only two of these analyses indicated a reduction in heterogeneity. In studies using adult participants only, prevalence rates of victimisation in childhood were 79% with  $I^2=0\%$ . Similarly, when examining child abuse only, 28% of individuals within a clinical sample reported experiencing child abuse with  $I^2=0\%$ . Thus, heterogeneity across prevalence rates may be explained by a combination of moderating factors rather than individual moderators alone.

### **Discussion**

Autistic individuals are vulnerable to various forms of victimisation including child abuse, bullying, and crime. To provide an estimate of prevalence of victimisation, consideration of the wide array of victimisation experiences in autistic individuals was required. This review assessed the prevalence of victimisation in autistic individuals using a systematic review and meta-analysis. To the author's knowledge, this is the first attempt to synthesise prevalence rates of various types of victimisation to provide an overall prevalence estimate.

The meta-analysis found a pooled prevalence rate for victimisation in autistic individuals of 44%. This demonstrates that a large proportion of autistic individuals experience victimisation, though these results are tentative pending further investigation due to the high heterogeneity. Within this, 47% reported experiencing bullying which is higher than the prevalence of bullying found in the general population (see, for example, Craig et al. 2009). Pooled prevalence of sexual victimisation in childhood was 40% which is again higher than prevalence rates found in the general population (Radford et al., 2013). The pooled

prevalence of child maltreatment was 16%. This is similar to prevalence rates of child maltreatment identified in the general population (May-Chahal & Cawson, 2005).

Of note, the highest prevalence rate in the subgroup analysis of victimisation type was those measuring 'any' victimisation. The five studies in this subgroup analysis (Chan et al., 2018; Fisher et al., 2013; Paul et al., 2018; Pfeffer, 2016; Weiss & Fardella, 2018) used questionnaires which captured sexual victimisation, crime, bullying, witnessing victimisation, and child maltreatment altogether. Thus, the prevalence rates in these studies capture various forms of victimisation. This illustrates the importance of examining the experiences of various forms of victimisation. Pfeffer (2016) found that autistic individuals who experienced victimisation were likely to be re-victimised in the same year, sometimes in different ways to their first victimisation. The prevalence of victimisation may therefore be higher than what is recorded as studies examining discrete forms of victimisation, such as bullying or sexual victimisation, do not capture the other forms of victimisation participants may have also experienced. Future research examining the prevalence or impact of victimisation should account for the possibility of multiple victimisation experiences of different natures.

As there was a large amount of heterogeneity in the prevalence rates of victimisation, subgroup analysis was conducted to explore the effect of moderating variables. This illustrated that the prevalence of victimisation was higher in community samples than clinical samples (54% and 39% respectively). Those in the clinical samples may have more severe difficulties (due to their autism or comorbid conditions), so receive a greater level of support and intervention, reducing the risk of victimisation. Additionally, samples were taken

from different settings in the community including mainstream schools and special education schools. School settings have been identified as an important factor in victimisation as inclusive/mainstream settings may offer less social protection to autistic students (Zablotsky et al., 2014), leading to a higher prevalence of victimisation in these settings. These factors may influence the prevalence rates and heterogeneity identified within these subgroups.

Another study-level factor which may influence heterogeneity in the results is differences in the informants used. In autistic people, self-report has been considered to lack reliability (Mazefsky et al., 2011). Difficulties understanding social situations has been suggested to affect autistic children's ability to answer questions on peer victimisation (Loveland et al., 2001). Nonetheless, self-reports of autistic individuals have demonstrated validity and researchers suggest that self-report in autistic adolescents can provide more comprehensive assessment of internal experiences than parent-report (Keith et al., 2019; van Roekel et al., 2010). Further, van Roekel et al. (2010) found that autistic adolescents had similar perceptions of bullying to adolescents from the general population. However, the more an adolescent reported being victimised, the more they misinterpreted non-bullying situations as bullying. Thus, those who have been victimised may be biased in their perceptions of their experiences, impacting on the self-report data.

There are also challenges in the use of informant-reports of victimisation. Research suggests that parents may underreport bullying (Holt, Kaufman Kantor, et al., 2009) as children may not disclose these experiences to adults (Unnever & Cornell, 2004; Waasdorp & Bradshaw, 2011). Peers may not witness victimisation (van Roekel et al., 2010) and classmates and teachers may interpret autistic behaviours as bullying (Chou et al., 2019). Younger children

may be more likely to seek support from parents or teachers when being victimised (Waasdorp & Bradshaw, 2011) and older children may be less likely to report their victimisation experiences to parents (van Schalkwyk et al., 2018). Subgroup analysis demonstrated higher prevalence rates when parents reported victimisation than self-reporters. However, both prevalence rates have substantial heterogeneity, indicating that choice of reporter alone may not be influencing the prevalence rates. Future research should utilise multiple reporters as this adds to the understanding of victimisation experiences. For example, peer reports are suggested to be important for understanding the social world as these may be based on extended and varied experiences with the individual being examined (see Rubin et al., 2006). Achenbach et al. (1987) suggest it may be useful to view each reporter as having their own separate predictive validity since each reporter observes the behaviour in different contexts.

Overall, the review illustrates that around 44% of autistic individuals experience victimisation in one form or another. Victimisation is associated with several negative outcomes in autistic individuals such as anxiety, conduct problems, aggression, and suicidal behaviour (Paul et al., 2018; Sedgewick, 2018). Therefore, prevention of victimisation in autistic individuals is paramount. The result of this systematic review provides preliminary insights into potential considerations for the development of prevention programmes. For instance, subgroup analysis found higher rates of bullying and sexual victimisation than cyberbullying and child abuse for autistic individuals. This may be due to differences in the risk factors for each type of victimisation. Prevention methods should therefore be tailored to the type of victimisation in question and can be informed by more targeted reviews. Nonetheless, as stated previously, the

highest prevalence rate for victimisation was found for studies measuring 'any' victimisation. This indicates that collaboration across services such as schools, social services, and community support groups, is essential for victimisation prevention.

Interventions may also need to consider the setting type as prevalence of victimisation was higher in community than clinical samples. Hall-Lande et al. (2015) found that alleged perpetrator of abuse was more likely to be group home or residential facility staff for autistic children than children with other disabilities, illustrating a setting-specific risk factor. This review also illustrates a sparsity in research examining crime victimisation and victimisation of autistic adults. Thus, future research in these areas is required to determine appropriate interventions and prevention methods.

There are limitations in the studies included in this review. Firstly, several studies did not validate autism diagnoses, relying on informant reports, thus limiting the validity of the results. Parental reports have been consistently used to estimate autism prevalence (Boyle et al., 2011) with good sensitivity and specificity (Russell et al., 2015). Nevertheless, validated diagnoses would improve the validity and reliability of the results. Further, comorbid conditions were not always controlled for in the analysis which may have affected the results. For example, comorbid learning disabilities have been found to increase the risk of maltreatment allegations in autistic children (Maclean et al., 2017). Prevalence rates of victimisation were higher for autistic individuals without learning disabilities, however, there was a limited number of studies used in this subgroup analysis, preventing a reliable comparison and heterogeneity remained. There may differences between individuals with and without learning disabilities which cannot be determined in this review. For example, those

without learning difficulties may be more aware of subtle forms of victimisation (Rowley et al., 2012) and individuals with greater learning difficulties may avoid social contact, reducing the opportunity for interpersonal conflict (Wainscot et al., 2008). Children with limited or no verbal ability may be less able to report victimisation to their parents (Pfeffer, 2016). Furthermore, individuals with poorer reading or literacy abilities may have had difficulty with the measures used and may have dropped out of studies (Toseeb et al., 2019). Additionally, physical symptoms of autism such as poor motor skills and visual perception have also been associated with victimisation (Bejerot & Humble, 2018) and may therefore be important to consider in future studies. Greater consideration of comorbid difficulties could reduce heterogeneity in prevalence rates of victimisation.

Additionally, definitions of victimisation were provided to participants in some studies, but this was not documented in others. Constructs may have been interpreted differently between participants (Sreckovic et al., 2014), affecting the reliability of the results. For example, the term 'peer victimisation' has been used interchangeably with bullying within the victimisation literature but may be interpreted differently by participants. Furthermore, many studies had male only or mostly male samples. This limits a comparison of gender differences in the prevalence of victimisation. Previous research has highlighted the importance of considering gender: sexual victimisation has been found to be more likely in women (Barth et al., 2013; Halperin et al., 1996) and may be underreported in predominantly male samples.

The included studies originated in eleven countries. The cultural context may be an important factor to consider in the incidence of victimisation as autistic traits may be expressed and interpreted differently in different cultures

(Freeth et al., 2013). Furthermore, Chan et al. (2018) report that victimisation in the Chinese context may be different from the context in the US, where most studies were conducted. The emphasis on examination and academic performance in Chinese contexts may result in students' special education needs associated with their disability being overlooked (Forlin, 2010). Thus, the results of individual studies may be limited to the cultural contexts in which the studies were conducted. Cultural context is therefore an important consideration for the interpretation of the results and subsequent development of interventions.

It should also be acknowledged that victimisation is a sensitive topic and could therefore influence what an individual is willing to disclose (Pellegrini, 1998), subsequently impacting on the results of studies utilising self and informant reports as opposed to official data. Survivors of sexual abuse may be unwilling to disclose their experiences (Sable et al., 2006) and the stigma associated with revealing abuse may influence caregiver reports (Mandell et al., 2005). Fear of reporting victimisation may influence the results of victimisation studies (Pfeffer, 2016) and should therefore be considered when interpreting the results. There is also the possibility of recruitment bias in the included studies. Most do not report how their study aims were presented to potential participants. Only one study provided clear information about this aspect of recruitment: Weiss & Fardella (2018) advertised their study as a project on interpersonal violence. If the study aims were clear to participants, those who had experienced victimisation or parents of such individuals may be more likely to participate, possibly biasing the results.

This review highlights the need for consistency and standardisation in studies investigating victimisation in autistic individuals to reduce heterogeneity and provide a reliable estimate of victimisation prevalence. This includes

consistency in terminology used and the assessment of comorbid conditions. Transparency in reporting study procedures would also assist in the assessment of potential recruitment and sampling bias.

### Strengths and Limitations

This review has several strengths. For instance, a large number of participants (over 600 thousand) were included in the studies reviewed. This review also used a stringent quality assessment procedure, in which studies presenting with 'high risk' of any type of bias were excluded. This aimed to improve the quality of the reviewed research. Thus, the included studies do not present with a high risk of bias. However, there was a still low to moderate risk of bias present in the included studies. For example, many did not provide a power calculation for their sampling, which could elicit a selection bias. In clinical research, the sample size is often dictated by the sample group. Thus, the data analysis may suffer a loss of power. In larger studies which employ community or general population sample, a power calculation is more feasible and should be conducted to reduce selection bias and increase statistical power. Nine studies did not assess the reliability of the scales used, which can introduce a measurement bias and impact on the results of the study. Nonetheless, well-researched and validated scales were used in most of the included literature.

A major limitation in this review is the substantial amount of heterogeneity in the pooled prevalence rates. The moderator variables considered within the subgroup analysis do not justify the heterogeneity. The heterogeneity could be due to differences in the measures used to capture victimisation, psychiatric comorbidities, or a range of participant-level differences such as socioeconomic status, age of diagnosis, and ethnicity. The



results of this study should therefore be interpreted with caution and replicated considering new evidence.

It should also be noted that 'Pervasive Developmental Disorder Not Otherwise Specified' and 'prevalence' were not included as search terms in the review. This was an error made by the author which may have impacted on the studies identified and the pooled prevalence rates. Nevertheless, as upwards of 17,000 records were identified through the initial search procedures, it is possible that a large percentage of literature pertaining to victimisation in autism was identified. Additionally, several papers could not be accessed or translated, again potentially impacting the results. Given the substantial heterogeneity present, it is unclear whether the inclusion of these studies would have produced more homogenous results.

## Conclusions

This review found a pooled prevalence rate of victimisation of 44% in autistic individuals. The available literature exploring child maltreatment, sexual victimisation, and conventional crime was smaller than that studies about bullying. More research is required in these areas to clarify the experiences of autistic individuals and identify suitable interventions to reduce the risk of victimisation. Future research should also aim to explore gender differences, the impact of comorbidity, and protective factors in victimisation. The evidence described in this review indicates a high prevalence of victimisation in autistic individuals, therefore it is pertinent to continue developing the knowledge base and striving to improve the experiences of this population.

## **Chapter Three**

### **Methodological Critique**

#### **Measuring Victimisation using the Juvenile Victimization Questionnaire: A Methodological Review with Recommendations**

### **Abstract**

This chapter aims to evaluate the Juvenile Victimization Questionnaire (JVQ), a measure of childhood victimisation, by considering the JVQ in respect of empirical research, the tool's adherence to the psychometric characteristics of a robust measure, and the applicability and accessibility of the tool. A systematic search was conducted to identify relevant literature, finding 131 empirical papers employing the JVQ. Examination of this literature found that the JVQ met many of the criteria for a robust psychometric measure, including internal consistency, construct validity, and appropriate norms. There was also evidence of predictive validity for future victimisation and symptoms of trauma, and test-retest reliability. Areas of future development and evaluation were identified, including further exploration of the relevance of the JVQ to current societal norms and cultural expectations. Validation in autistic individuals is also required. Nevertheless, the JVQ has clear benefits for assessing victimisation in that it encompasses a wide spectrum of victimisation experiences and can provide useful information for professionals working within the Criminal Justice System and Child Welfare Systems.

## **Introduction**

Victimisation is an important topic within forensic psychology. Exploring victimisation enables an understanding of crime trends, at-risk populations, and the consequences of victimisation which have implications for policies and interventions for offenders and victims. To study victimisation, a variety of tools and methodologies are available including the use of secondary data from official statistics and collecting primary data using victim surveys. Victim surveys have directly influenced theories regarding the causes of crime. For instance, Routine Activity Theory (Cohen & Felson, 1979) and opportunity theories developed largely due to victim survey data (see Cantor & Lynch, 2000). Victim surveys can capture crime not reported to the police and provide more detailed information than official statistics (Biderman, 1967; Cantor & Lynch, 2000). As found in Chapter Two, structured victimisation surveys have been developed including the Reynolds Bully Victimization Scale (Reynolds, 2003), the Social Vulnerability Questionnaire (Fisher et al., 2012), and the Juvenile Victimization Questionnaire (JVQ Hamby et al., 2005).

### Description of the Tool

This critique will examine the JVQ (Hamby et al., 2005) which is designed to gather information on a range of victimisation experiences in children and adolescents. The JVQ was developed to bridge a gap in existing victimisation measures (Finkelhor, Hamby, et al., 2005); it aimed to capture a spectrum of victimisation across the span of childhood as clinicians may make inaccurate conclusions about a child's experiences if they are not aware of the child's full victimisation profile (Finkelhor, Ormrod, et al., 2005b).

The JVQ can be administered as an interview with a child or caregiver, or as a self- or caregiver-report questionnaire. Choice of application is dependent on the child's age and cognitive abilities. It can also be used with adults retrospectively reporting childhood victimisation. The original JVQ consists of 34 offences against youth, covering five modules: Conventional Crime, Child Maltreatment, Peer and Sibling Victimization, and Witnessing and Indirect Victimization. Each module is scored to produce a one-year or lifetime incident rate for that module. A score of 1, a "yes", indicates at least one form of victimisation with a module was recorded, while a score of zero or "no" indicates that no forms of victimisation within that module were reported. Follow-up questions collect information about perpetrator characteristics, location of the incidents, and impact and reactions to the incident.

A revised version of the JVQ has been developed containing the original 34-items and additional supplemental items to obtain further information about exposure to family violence, neglect, and relational victimisation (JVQ-R2; Finkelhor, Hamby, et al., 2011). This has several forms which are detailed in Table 4. Each can be completed by a child, caregiver, or an adult retrospectively and considers past year and/or lifetime experiences. The JVQ has been used in national surveys including the National Survey of Children's Exposure to Violence in the US (see Turner et al., 2017) and Environmental Risk Longitudinal Twin Study in the UK (see Baldwin et al., 2019). The JVQ has been translated into several languages, including Spanish, Chinese, and Portuguese (see Almeida et al., 2020; Chan et al., 2011; Forns et al., 2013). The JVQ was also used in the development of a conceptual model of poly-victimisation, which refers to the occurrence of multiple forms of victimisation (Finkelhor et al., 2007a,b).

**Table 4***Description of the Different Forms of the JVQ*

<b>Version</b>	<b>Items</b>	<b>Applications</b>	<b>Age (years)</b>
<b>JVQ</b>	34 items with follow-up questions	Child interview Care-giver interview Child self-administered questionnaire Caregiver self-administered questionnaire Narrative interview Adult retrospective form	6 to 17 0 to 17 12 to 17 0 to 17 6 to 17 18+
<b>JVQ-R2</b>			
Full interview	34 items with follow-up questions	Child interview with supplementary items Caregiver interview with supplementary items Adult retrospective interview Adult retrospective interview with supplementary items	8 to 17 0 to 17 18+ 18+
Abbreviated Interview	34 items with reduced follow-up questions	Youth lifetime interview Youth past year interview Adult retrospective interview Caregiver lifetime interview Caregiver past year interview	8 to 17 8 to 17 18+ 0 to 17 0 to 17
Screeners Sum Version	34 items with no follow-up questions	Youth lifetime questionnaire Youth past year questionnaire Caregiver lifetime questionnaire Caregiver past year questionnaire Adult retrospective questionnaire	8 to 17 8 to 17 0 to 17 0 to 17 18+
Reduced Item Version	12 items with no follow-up questions	Youth lifetime questionnaire Youth past year questionnaire Caregiver lifetime questionnaire Caregiver past year questionnaire Adult retrospective questionnaire	8 to 17 8 to 17 0 to 17 0 to 17 18+

## Aims

This chapter aims to evaluate whether the JVQ is suitable for meeting the overall aims of the tool, which is to measure childhood victimisation experiences. The review will consider the JVQ in respect of empirical research, the tool's adherence to the psychometric characteristics of a robust measure (e.g., being theoretically driven, having high levels of reliability and validity, and appropriate norms; Kline, 2000) and the applicability and accessibility of the tool. To the author's knowledge, a review of this extensive nature has not been previously conducted for the JVQ.

## **Method**

### Systematic Search

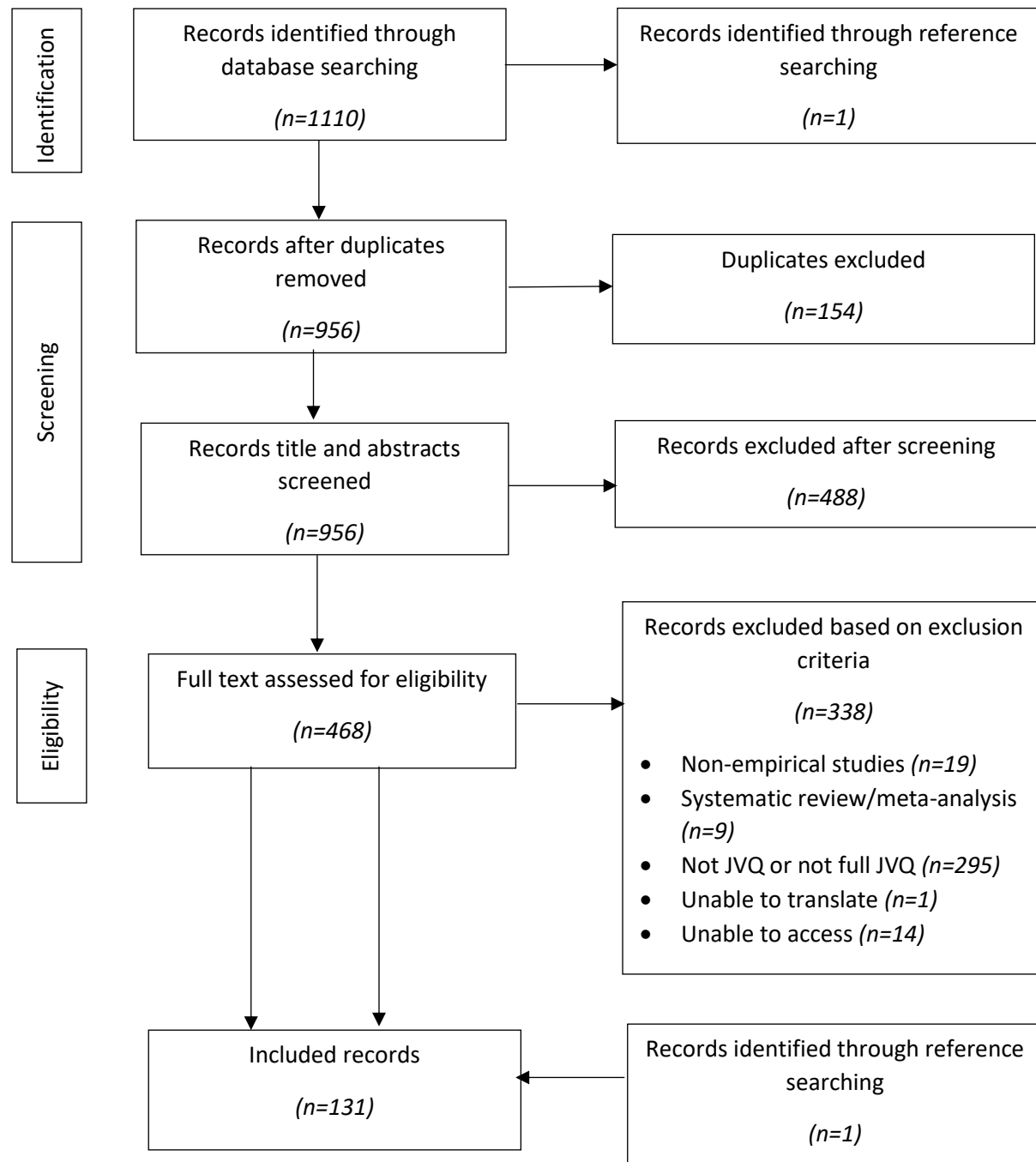
A systematic search was conducted to identify research utilising the JVQ to inform the critique. Searches were conducted in May of 2020 using PsychINFO (via Ovid), MEDLINE (1946-present; via Ovid), EMBASE (via Ovid), CINAHL (via EBSCOhost), and the International Bibliography of the Social Sciences (IBSS; via ProQuest). There were no restrictions regarding the type of participants, setting, time frame, or language to widen the scope of the search. Exclusion criteria included systematic reviews of previous research, non-empirical papers, and studies only using a selection of items from the JVQ. The following search syntax was used:

- a) 'Juvenile Victimization Questionnaire' OR
- b) 'Juvenile Victimisation Questionnaire' OR
- c) 'JVQ'

This search resulted in a total of 1110 records. From this, 154 duplicates were removed. Reviewing the abstracts of the remaining studies resulted in a further 488 irrelevant articles being removed. Full texts of the remaining papers were then accessed. Fourteen non-empirical studies, nine reviews, and 295 papers either not using the JVQ or only using a selection of JVQ items were excluded. One paper could not be translated, and nineteen papers were not accessible. One additional paper was identified through searching the references of included studies. The final number of records to be used within this review was 131. Figure 5 describes the study identification process.



**Figure 5**  
*Systematic Search Process*



## **Results**

The systematic search demonstrated an abundance of empirical research utilising the JVQ. A description of identified studies is provided in Appendix G. As seen in Table 4, there are several versions of the JVQ which can each have different modes of application. As a review of this nature has not been previously conducted for the JVQ, this review will consider the evidence available for each version altogether. Future reviews can expand on this by focussing on specific versions of the JVQ in more detail.

### Measure Construction

The JVQ aims to capture a full spectrum of childhood victimisation across the span of childhood (Finkelhor, Hamby, et al., 2005). The constructs used were designed to map onto official categories. For example, items in Module A, encapsulating Conventional Crime, were identified to parallel the offences defined and measured by the US Federal Government in the National Crime Victimization Survey (Rennison & Rand, 2003). Module B, encapsulating Child Maltreatment, includes items paralleling offences of concern to Child Protective Services (Hamby et al., 2005). Module C measures Peer and Sibling Victimization, items within which may not be considered crimes but are of interest to professionals in schools and similar settings. Module D examines sexual victimisation capturing intimate, statutory, and other types of sexual offences. Finally, Module E captures the incidence of Witnessing and Indirect Victimization, which the authors state can have a psychological impact on children. This is supported by empirical research (e.g., Holt, Buckley, et al., 2008). Table 5 provides a description of module items.

The JVQ underwent extensive review to ensure it was relevant and appropriate for the target population (Hamby et al., 2005). This included being reviewed by academics with experience in studying youth victimisation and the measurement of victimisation. Focus groups with parents and adolescents were conducted which provided feedback on the language used to make the items more relevant and understandable to youths. Semi-structured interviews with young children were also conducted to assess their comprehension of the survey items.

Although the JVQ was not theoretically driven (as recommended for psychometric measures; Kline, 2000), construction of the JVQ was comprehensive and grounded in the experiences of the target population. Ensuring the items reflect official categories is likely useful for professionals working within the criminal justice and care systems.

**Table 5**

*Description of the JVQ Modules*

<b>Module</b>	<b>Module Items</b>
Module A – Conventional Crime	Robbery Personal theft Vandalism Assault with a weapon Assault without a weapon Attempted assault Kidnapping Bias attack
Module B – Child Maltreatment	Physical abuse by a caregiver Psychological/emotional abuse Neglect Custodial interference/family abduction

Module C – Peer and Sibling Victimisation	Gang or group assault Peer or sibling assault Non-sexual genital assault Bullying Emotional bullying Dating violence.
Module D – Sexual Victimisation	Sexual assault by a known adult Non-specific sexual assault Sexual assault by a peer Rape (attempted or completed) Flashing/sexual exposure Verbal sexual harassment Statutory rape and sexual misconduct
Module E – Witness/Indirect Victimisation	Witness to domestic violence Witness to parent assault of sibling Witness to assault with a weapon Witness to assault without a weapon Burglary of a household Murder of a family member or friend Witness to murder Exposure to random shooting, terrorism, or riots Exposure to war or ethnic conflict.

### Type of Data

The JVQ utilises nominal data, which is appropriate for the aims of the test.

Another characteristic of a robust test is that it has appropriate norms (Kline, 2000). Using a nationally representative sample of 4549 children aged between zero and 17 years, Finkelhor et al. (2009) provided norms for childhood victimisation measured using the JVQ in the US. However, the norms have limited clinical utility on an individual basis because, although prevalence rates

within a sample could be compared to these norms to assess how the prevalence rates differ, an individual's score could not be compared to these rates.

Although the JVQ does not have cut-off scores, cut-off scores have been specified for identifying poly-victims. When examining poly-victimisation, the JVQ was adapted into a Screener Sum Version. This version counts the number of victimisation incidents in each module occurring at a different type and place, ascertained by follow-up questions (Finkelhor, Ormrod, et al., 2005a). The authors identified cut-off values to identify poly-victims based on mean scores from a nationally representative sample of 2030 children. However, there is no established criteria for identifying cut-off scores using mean values (Kline, 2016), thus reducing the reliability of these cut-off scores.

In summary, there is normative data for the JVQ. However, it is worth noting that the normative data identified for the JVQ are generated within a specific place in a certain era. Therefore, the data may have limited generalisability outside of this context. As it has been over ten years since the norms for the JVQ were identified, it may be useful to review these.

### Validity

Validity refers to whether a test measures what it intends to (Langdridge, 2004), and encompasses several facets which will be addressed in turn.

#### *Face Validity*

Firstly, face validity concerns whether a test appears to measure what it claims to measure (Kline, 2000). Studies examining the face validity of the JVQ could not be identified. The test construction suggests the JVQ items are appropriate

and relevant for measuring victimisation as understood by experienced professionals and the target population.

### *Content Validity*

Content validity refers to the degree to which a test measures all factors of the underlying construct (Terwee et al., 2007). Studies examining the content validity of the JVQ could not be identified. As the JVQ was reviewed by experienced academics, it is expected that it measures all relevant aspects of victimisation, suggesting some content validity. However, since the JVQ's development, technological advances have led to the emergence of new forms of cyber-victimisation. An enhanced version of the JVQ-R2 (Turner et al., 2010) includes one item regarding internet victimisation, which states:

*"Has anyone ever used the Internet to bother or harass (your child/you) or to spread mean words or pictures about (your child/you)?"* (p. A-4).

This does not encapsulate the range of cyber-crimes children may be exposed to. For example, virtual mobbing, cyber-bullying and trolling, and disclosing private images without consent could be considered cyber-crimes in the UK (see Crown Prosecution Service, 2019). Additionally, in the US, revenge porn (the intentional distribution of non-consensual porn) has been a criminal act since 2019. Therefore, the JVQ may require further revisions to reflect this and improve content validity. At present, there is insufficient evidence to show whether the scale has content validity.

### *Predictive Validity*

Predictive validity refers to the correlation between the measure administered on one occasion and related criteria captured later (Kline, 2000). Research has demonstrated that prior victimisation is predictive of further victimisation (Desai et al., 2002). Using the JVQ, Cuevas et al. (2010) found scores for victimisation predicted victimisation one year later, including conventional crime ( $\beta=0.43$ ,  $p<0.01$ ), maltreatment ( $\beta=0.17$ ,  $p<0.01$ ), and sexual victimisation ( $\beta=0.28$ ,  $p<0.01$ ).

Additionally, as victimisation is associated with trauma-related symptoms (Boney-McCoy & Finkelhor, 1995), a good measure of victimisation should be able to predict consequent experiences of this nature. Lewis et al. (2019) developed a risk calculator for Post-Traumatic Stress Disorder (PTSD) in children. Victimisation captured using the JVQ-R2 was included as a risk factor for PTSD alongside factors such as IQ, minority ethnicity status, and socioeconomic disadvantage. Receiver operating characteristics (ROC) area under the curve (AUC) statistic was 0.74 indicating that the formula could discriminate between trauma-exposed participants with and without PTSD. The Brier score of 0.15 indicated adequate overall risk prediction performance for PTSD. Thus, the JVQ demonstrates predictive validity for PTSD when used in conjunction with other established risk factors. Although this indicates the JVQ has predictive validity, this requires further exploration as evidence for predictive validity in the identified literature was limited.

### *Construct Validity*

The construct validity of an instrument can be assessed by whether it produces results concordant with theory or previous research (Kline, 2000). As stated,

victimisation is associated with trauma-related symptoms (Boney-McCoy & Finkelhor, 1995). Finkelhor, Hamby, et al. (2005) assessed the construct validity of the JVQ by examining the correlations between JVQ scores and scores on The Trauma Symptoms Checklist for Children (Briere, 1996) and the Trauma Symptom Checklist for Young Children (Briere et al., 2001). There were weak to moderate significant correlations ( $r=0.11$  to  $r=0.35$ ,  $p<0.01$ ) between JVQ items and trauma symptoms, including anger, anxiety, and depression reported by young people and parents. Items with non-significant correlations to trauma were those with very low rates of endorsement (e.g., kidnapping, witness to murder, exposure to war or ethnic conflict).

These findings have been replicated. For example, Mitchell et al. (2011) found that higher mean scores for trauma symptomology was associated with online victimisation in the past year ( $F(1, 2048)=134.18$ ,  $p<0.001$ ) and in participants' lifetime ( $F(1, 2048)=136.45$ ,  $p<0.001$ ). Romano et al. (2016) also found JVQ scores positively correlated with trauma symptoms ( $r=0.48$ ,  $p<0.001$ ). Babchishin and Romano (2014) found a positive association between caregiver-reported lifetime victimisation experiences and psychological difficulties, including post-traumatic symptoms ( $B=0.36$ ,  $p<0.05$ ). Furthermore, moderate positive correlations between poly-victimisation measured using the JVQ and the JVQ-R2 Screener Sum Version and trauma symptoms have been found (Finkelhor, Shattuck, et al., 2011; Hasselle et al. 2017; Miller-Graff et al., 2016). Thus, the JVQ demonstrates construct validity.

#### *Criterion and Concurrent Validity*

Criterion validity considers the association of a measure to another 'gold standard' measure in the same field (McDowell, 2006). Evidence supporting the



criterion validity of the JVQ could not be identified. Similarly, evidence regarding concurrent validity, that is the correlation of one test to another test of the same construct, could not be identified. It is possible that the JVQ is considered the 'gold standard' measure of victimisation given its extensive application in psychological research. Nevertheless, evidence of this nature would further support the validity of the JVQ.

### Reliability

Reliability, which concerns the stability of a measure (Langdridge, 2004), is considered a prerequisite for validity (Nunnally, 1970). Reliability encompasses internal consistency, test-retest reliability, and inter-rater reliability.

### *Internal Consistency*

Internal consistency assesses whether items within a measure are measuring the same construct (Kline, 2000). However, victimisation experiences can occur independently, and are not necessarily associated with other victimisation experiences. Internal consistency may be more applicable to tests measuring abstract constructs rather than measures in which the absence or presence of factual events is recorded. Thus, internal consistency may not be useful for evaluating the reliability of the JVQ. Nevertheless, scales with weakly correlated items may affect the association with other scales or items (Finkelhor, Hamby, et al. 2005). Thus, internal consistency will be considered.

All identified studies which assessed reliability used Cronbach's alpha. An alpha value of 0.7 and above is considered good, indicating the items within the measure are correlated with one another and may be measuring the same concept (Tavakol & Dennick, 2011). Finkelhor, Hamby, et al. (2005) report a

Cronbach's alpha of 0.8 for the JVQ full scale capturing past year victimisation. Alpha values of 0.85 to 0.86 for lifetime victimisation have been reported (Babchishin & Romano, 2014; Romano et al., 2016). Additionally, the reliability for the various forms of the JVQ assessed. Clum et al. (2012) reported an alpha value of 0.91 for lifetime victimisation measured using the JVQ Screener version. Frewen et al. (2017) found the JVQ Adult Retrospective Version had good internal consistency, with alpha values ranging from 0.75 to 0.84. Thus, the JVQ has demonstrated acceptable internal consistency.

### *Test-Retest Reliability*

Test-retest reliability assesses the ability of a measure to yield the same score for a subject given no intervention and is essential for a robust psychometric test (Kline, 2000). Finkelhor, Hamby, et al. (2005) re-administered the JVQ to 200 participants three to four weeks after the initial administration. For the main subscales of the JVQ, all demonstrated moderate to substantial test-retest reliability ( $k=0.49-0.72$ ). However, some individual items demonstrated low test-retest reliability such as 'witness to assault with a weapon' ( $k=0.22$ ). Nevertheless, there was agreement between the two administrations for 95% of the items. The authors report the short time between the administrations may have impacted on participants' responses. For instance, participants may have lacked motivation to complete the interview again or known how to shorten the interview by not endorsing items, thus reducing the number of follow-up questions. This was the only identified study reporting test-retest reliability for the JVQ. Thus, this requires further investigation. However, test-retest reliability should be interpreted with acknowledgement that further victimisation experiences may have occurred between administrations, impacting the results.

### *Inter-Rater Reliability*

Inter-rater reliability refers to the correlation or consistency in an individual's scores rated by two or more independent raters. Only one study reported inter-rater reliability. Baldwin et al. (2019) conducted a longitudinal review of victimisation and self-injurious thoughts and behaviours amongst a large sample of twins. At 18-years-old, participants were interviewed using the JVQ-R2 concerning experiences between the ages of twelve and 18 years. Correlations were calculated between self and parental reports ( $r=0.34$ ), self and their co-twin's informant reports ( $r=0.38$ ), and the twin's informant report and the parental reports ( $r=0.38$ ), which indicated moderate correlations between reporters. However, there are limitations to using informants in victimisation studies. Caregiver knowledge of victimisation relies on the child's disclosure and the quality of the relationship between the child and the caregiver (Goodman et al., 2010). Therefore, caregiver reports may not always be accurate reflections of the child's experience.

### Applicability

The various forms of the JVQ are freely available from the Crimes Against Children's Research Center website ([http://unh.edu/ccrc/jvq/index\\_new.html](http://unh.edu/ccrc/jvq/index_new.html)). All include administration instructions and are available in Microsoft Word or PDF. Administration guidance is provided including advice for the context, rapport, setting, and examiner characteristics. Detailed scoring guidelines are provided. Information regarding clinical interpretation is limited to advising against using the JVQ as the primary basis for clinical diagnosis and directing the reader to the nationally representative data from Finkelhor et al. (2009). Therefore, although the JVQ is easily accessible with detailed guidance for

administration, clinical interpretation is limited to identifying whether further investigation is warranted. This may be considered appropriate given the aims of the tool.

The JVQ has been widely used in the victimisation literature. Most studies identified in the systematic search were conducted in the US ( $n=49$ ) and Spain ( $n=27$ ). There were also studies conducted in Canada ( $n=12$ ), China ( $n=11$ ), Sweden ( $n=6$ ), UK ( $n=5$ ), Brazil ( $n=4$ ), Vietnam ( $n=3$ ), Chile ( $n=2$ ), Russia ( $n=2$ ), and Pakistan ( $n=2$ ). One study was also conducted in each of the following countries: France, Germany, Malaysia, Mexico, Portugal, Serbia, Switzerland, and the US and Canada combined. A variety of populations were used including participants from the general population ( $n=67$ ), clinical settings ( $n=11$ ), welfare systems ( $n=7$ ), students ( $n=38$ ), offenders ( $n=6$ ), and 'street children' ( $n=2$ ). This included autistic individuals ( $n=3$ ) and people with ADHD ( $n=1$ ). A range of topic areas were explored, including the association between victimisation and psychopathology, addiction, delinquency, and genetics. Several studies explored the prevalence of victimisation in specific populations.

The JVQ has been translated into several languages. Chan et al. (2011) translated the JVQ into Chinese, reporting acceptable internal consistency for the full scale ( $\alpha=0.89$ ) and individual subscales ( $\alpha=0.64-0.83$ ) for past year victimisation. Subsequent studies utilising the Chinese version of the JVQ reported high internal consistency in general population samples measuring lifetime victimisation (see Chan, 2014; Chan et al., 2018; Chen & Chan, 2016; Li et al., 2013). The Chinese version of the JVQ also demonstrated test-retest reliability (Li et al., 2013). As with the original JVQ, Chan (2015) found low agreement between parent and child reports on the Chinese version of the JVQ,

with parents reporting lower rates of victimisation than the adolescent self-reporters.

Recently, the JVQ was translated in Portuguese (Almeida et al., 2020). This measure had high internal consistency ( $\alpha=0.94$ ). However, the Portuguese version of the JVQ demonstrated problems with construct validity. The authors suggest that the normativity of the sample may have influenced the results as only 4% of participants had previously been identified as victims.

The Spanish/Catalan version of the JVQ appears to be the most frequently used translated version of the JVQ within the identified studies. Forns et al. (2013) found excellent internal consistency for the overall scale for past year ( $\alpha=0.82$ ) and lifetime victimisation ( $\alpha=0.84$ ). This has been replicated in subsequent studies using this version (Kirchner et al., 2014; Kirchner et al., 2020; Soler et al., 2015). However, Forns et al. (2013) found weak correlations between the JVQ and a measure of psychological distress, and very low, though significant, correlations between the JVQ and a measure of interpersonal violence experiences, suggesting low criterion and concurrent validity in the translated measure.

Although the JVQ captures a range of victimisation experiences relevant to professionals within the US, it may be less appropriate for use in other countries, despite translation. For example, in the Spanish/Catalan Version of the JVQ, the item concerning statutory rape was removed as this does not correspond with Spanish law and is not relevant to social standards regarding consensual sexual relationships in Spain (García & Ochotoren, 2017; Pereda et al., 2014). Similarly, an item within the sexual victimisation module was felt to be non-applicable within the Swedish legal system (Aho et al., 2016). For the version of the JVQ used in Mexico by Méndez-López and Pereda (2019), two items were

added to the Spanish translation due to the high frequency of kidnapping in Mexico. In contrast, kidnapping and murder are not considered to be common crimes in Portugal, thus items pertaining to this may not be relevant in the Portuguese context (Almeida et al., 2020). The appropriateness of the JVQ to counties outside of the US requires investigation.

### **Limitations of Victimisation Measures**

Although the study of victimisation is ostensibly important within both forensic and social care contexts, there are limitations to utilising questionnaires of victimisation. Firstly, the reliability of the results is reliant on the disclosure of the participant. The sensitivity of the topic may impact on disclosure (Pellegrini, 1998). Victims may be fearful of reporting their experiences (Pfeffer, 2016; Sable et al., 2006) and caregivers may be reluctant to disclose abuse of their children due to the associated stigma (Mandell et al., 2005). Memory may also influence the reliability of reports and less serious or salient incidents may be forgotten. Additionally, informant reports are dependent on the disclosure of the victimised individual (Goodman et al., 2010). Thus, official crime statistics may be more reliable measures of victimisation, although this would not capture unreported crimes and may only be useful for illegal behaviours. For instance, bullying is not likely to be reported to the police unless it involved a violent or aggressive action. A combination of official reports and victimisation questionnaires would elicit a more reliable overall picture of victimisation. In a few cases, it may be possible to use observational methods to capture victimisation, for example when measuring bullying in schools (see Pelligrini, 1998), though ethical issues would likely prevent this.

Furthermore, there are ethical considerations when using victimisation questionnaires. For example, revisiting victimisation experiences may elicit negative emotions and potentially be retraumatising. This is particularly relevant for the follow-up questions in the JVQ which seek to ascertain detailed information regarding each incident. Researchers must make every effort to provide support to participants and avoid unnecessary distress. Secondary data, such as official reports or informant-reports of victimisation, may reduce the potential for psychological harm to participants, though informants may also be vulnerable to vicarious trauma.

Additionally, measures of victimisation may be limited to the context in which they were developed. Societal norms and expectations of behaviour differs between country, culture, and religion, which impacts on expectations and appraisals of victimisation. Nevertheless, psychometric measures of victimisation have several strengths. This includes capturing information which may not be available in official reports. On an individual basis, exploring victimisation experiences is useful for professionals supporting victims and providing interventions.

#### **Implications for Chapter Four**

The strengths of the tool justify the use of the JVQ in the empirical study presented in Chapter Four. Additionally, as the JVQ encapsulates a range of victimisation experiences, it reduces the need for multiple questionnaires assessing individual types of victimisation such as bullying or sexual victimisation which has practical benefits within empirical research.

Although three studies identified in the systematic search explored victimisation in autistic individuals using the JVQ (Paul et al., 2018; Pfeffer,

2016; Weiss & Fardella, 2018), the reliability and validity of the JVQ with autistic individuals has not been examined. For autistic individuals, cognitive rigidity, difficulties in emotion recognition, and difficulties with social cognition might cause differences in the interpretation of self-report questionnaires validated in non-autistic populations (Santosh et al., 2016). For instance, in the JVQ-R2 Full Interview Youth Self-Report Form, Module A, item C3 states:

*"At any time in your life, did anybody break or ruin any of your things on purpose?" (p. 8).*

As autistic individuals have difficulty understanding the mental states of others (Baron-Cohen et al., 1985; Frith et al., 1991), impacting on their ability to identify the intentions of others, autistic individuals may have difficulty identifying when their belongings have been broken on purpose.

Nevertheless, a strength of the JVQ in relation to its use with autistic individuals is the use of behaviourally specific language. JVQ items describe experiences using objective, descriptive language. Autistic individuals have difficulty recognising and expressing emotions and internal states which can influence their reporting of their experiences (Kinnard et al., 2019). Thus, autistic individuals self-report on the JVQ may have reliability due to the omission of emotional experience in the items.

The JVQ requires further investigation and validation for autistic individuals. For instance, the language used may require modification for autistic people. Discussions with autistic individuals about the language used on questionnaires regarding victimisation would be informative. Comparison of self-report, informant-report, and official records could be used to assess validity. In



the wider context, there is a need for psychometric measures to be explicitly validated for use with autistic people.

### **Conclusions**

This critique sought to explore whether the JVQ is suitable for meeting the aims of the tool. The systematic search demonstrated the large research base utilising of the JVQ. The many versions of the JVQ allow for the application of the tool with children and adults. Overall, the JVQ appears to be an adequate measure of victimisation. Many of the criteria for a robust psychometric measure have been met, such as internal consistency, construct validity, and appropriate norms (Kline, 2000). The JVQ has also demonstrated predictive validity and test-retest reliability, though this requires further investigation. Further exploration of the JVQ's relevance to current societal rules, norms, and cultural expectations is required. Additionally, the validity and reliability of the JVQ with autistic individuals requires attention. The tool has clear benefits for assessing victimisation in that it encompasses a wide spectrum of victimisation experiences, though would benefit from expansion regarding cyber-victimisation. The JVQ can provide useful information for professionals working within the Criminal Justice System and Child Welfare Systems. Thus, the JVQ is an appropriate measure for meeting the aims of the tool: measuring victimisation experiences in children.

## **Chapter Four**

### **Empirical Study One**

#### **The Relationship Between Camouflaging, Victimisation, and Traits of Autism and Pathological Demand Avoidance in the General Population**

### **Abstract**

Social camouflaging refers to behaviours or strategies that overcome or conceal difficulties in social and communication skills. Autistic individuals have reported using camouflaging in response to threat, and describe being ostracised, verbally abused, and physically assaulted when they have not used camouflaging in social situations. Thus, camouflaging could be associated with victimisation. This cross-sectional study aimed to investigate this hypothesis using a sample of 220 participants from the general population who completed online questionnaires about victimisation experiences, autism and PDA traits, camouflaging behaviours, and symptoms of depression and anxiety. Correlational analysis found a positive association between camouflaging and victimisation. This suggests camouflaging may be a risk factor for victimisation. However, multiple regression analysis found that camouflaging was not significantly predictive of victimisation. Victimisation was predicted by symptoms of depression and PDA traits. Autism and PDA traits were also positively associated with victimisation and camouflaging scores, as were symptoms of depression and anxiety. The results illustrated the need for greater awareness and acceptance of autism and PDA in the wider community to reduce the need for camouflaging and the risk of victimisation.

## **Introduction**

Chapter Two found approximately 44% of autistic individuals experience victimisation. The core characteristics of autism are suggested to increase the risk of victimisation (Cappadocia et al., 2012; Sreckovic et al., 2014; Sterzing et al., 2012). For example, difficulties with social communication could lead to misunderstanding non-verbal cues or inappropriately responding in reciprocal conversations and increased social vulnerability which may increase the risk of victimisation (Hellström, 2019; Sofronoff et al., 2011). Further, being perceived as vulnerable, and experiencing social isolation and stigma increase the risk of victimisation (Furey et al., 1994; Liptak et al., 2011; Neely & Hunter, 2014; Orsmond et al., 2013). If social difficulties and how others perceive them influences victimisation for autistic individuals, camouflaging (see Chapter One, p. 12 for a definition) may be a mediating factor in the relationship between autism and victimisation.

Camouflaging strategies can include developing personas or techniques to use in social situations to meet the gaps in social and communication abilities. This may include suppressing self-soothing behaviours, portraying a character, imitating others, and following 'rules' in social situations such as making eye contact (Hull et al., 2017). Camouflaging is thought to be different to ordinary reputation management observed in non-autistic individuals as camouflaging in autism can be extremely effortful and challenging to the individual's identity (Bargiela et al., 2016). Hull et al. (2017) qualitatively explored camouflaging in ninety-two autistic adults. Thematic analysis identified seven themes which clustered into motivations for camouflaging, what camouflaging is, and the consequences of camouflaging. Motivations for camouflaging included wanting to blend in with others (termed Assimilation by Hull et al., 2017), increase social

connections, and reduce threat. Participants reported being ostracised, verbally or emotionally attacked, and physically assaulted when they had not camouflaged their autism. They used camouflaging to minimize differences between themselves and others and reduce the perceived threat. Several other studies have highlighted a desire to avoid negative experiences such as bullying and stigmatization as motivations for camouflaging (Bernardin et al., 2021; Cage & Troxell-Whitman, 2019).

Participants' descriptions of what camouflaging is encompassed two themes, termed masking and compensation (Hull et al., 2017). Masking was described as hiding autism characteristics and developing personas or characters to use during social situations (e.g., not engaging in self-soothing behaviours). Compensation involved developing strategies to meet the gaps in social and communication abilities resulting from the individuals' autism (e.g., looking in people's eyes and having scripts to follow).

A consequence of camouflaging identified by participants was exhaustion: camouflaging was described as mentally, physically, and emotionally draining as it required intensive concentration, self-control, and management of discomfort (Hull et al., 2017). This may contribute to the high levels of depression, anxiety, and stress found in autistic individuals who report using camouflaging (Cage et al., 2018; Cage & Troxell-Whitman, 2019; Hull et al., 2019). Another consequence was participants not meeting the stereotypical expectation of an autistic person which was perceived by participants as positive as this allowed them to succeed in employment and relationships and achieve their desired goals. However, participants also reported that camouflaging affected their perception of themselves, particularly their sense of authenticity. Participants felt they were lying about who they are, with some feeling that they were losing

sense of who they really are.

By concealing difficulties, camouflaging could lead to the perception that an individual is functioning well and does not experience difficulties, even though the interaction between their autism and the environment is problematic for them (Hull et al., 2017). Timely identification of autism assists in identifying an individual's needs and appropriate interventions, and increases access to services (Calzada et al., 2012). However, camouflaging may lead to late, missed, or questionable diagnoses (Kopp & Gillberg, 1992). Camouflaging has been associated with missed or late diagnosis in autistic women and has been suggested to be a component of the female autism phenotype (Gould & Ashton-Smith, 2011; Lai et al., 2015). Autistic women are less likely to receive a diagnosis of autism than men with similar levels of autistic traits (Dworzynski et al., 2012) and are more likely to have been previously misdiagnosed with other conditions such as personality disorders (Lai & Baron-Cohen, 2015). Lai et al. (2017) found that autistic women had lower scores for the external presentation of autism than men, but similar scores for the internal presentation of autism. The authors argued that camouflaging occurs more in women due to the greater discrepancy between internal and external manifestations of autism. An alternative hypothesis is both men and women engage in camouflaging, but for different reasons (Cage & Troxell-Whitman, 2019).

Camouflaging has also been described in individuals with Pathological Demand Avoidance (PDA). PDA is considered to be a developmental condition associated with autism (National Autistic Society, 2020). Autistic traits such as obsessive behaviour, social impairments, and language delay are often seen in PDA children (Gillberg, et al., 2015; Reilly et al., 2014). Other traits present in PDA include social manipulation, superficial social understanding, and lability of

mood (Newson et al., 2003). More detail regarding PDA can be found in Chapter One, p. 10. PDA individuals have anecdotally reported using camouflaging (also referred to as social mimicry) to fit in with others and avoid unwanted attention (Cat, 2018; PDA Society, n.d.). Further, the PDA trait of superficial sociability, described as appearing social but lacking depth or understanding (National Autistic Society, 2020; Newson et al., 2003), could be indicative of camouflaging behaviour. Empirical evidence exploring camouflaging in PDA could not be identified.

In empirical research, camouflaging has been measured by exploring the discrepancy between the internal autistic status (how autistic a person is) and the external autistic status, referring to overt behaviours. For example, Lai et al. (2017) compared self-reported autistic traits on the Autism Spectrum Quotient (Baron-Cohen, Wheelwright, Skinner, et al., 2001) and the Reading the Mind in the Eyes test (Baron-Cohen, Wheelwright, Hill, et al., 2001), both capturing internal autistic status, and the Autism Diagnostic Observation Schedule (Lord et al., 2000), capturing external autistic status. The authors concluded that the discrepancy between internal and external autistic status quantitatively measured camouflaging behaviour. However, this method can only capture successful camouflaging attempts: some individuals may use camouflaging to appear less autistic but may not be successful in doing so (Hull et al., 2019). Thus, the discrepancy method may only capture individuals who successfully alter their external autistic status.

Alternatively, Dean et al. (2017) used the Playground Observation of Peer Engagement (Kasari et al., 2005) to identify camouflaging behaviours used by autistic children. Engagement with peers was observed on the playground and descriptions of behaviour were recorded. Autistic girls behaved similarly to

typically developing girls, attempting joint engagement with peers. However, typically developing girls were able to maintain joint engagement while autistic girls moved between joint engagement and solitary play. Being unable to maintain joint engagement highlighted the social difficulties of the autistic girls, suggesting unsuccessful camouflaging attempts. While this approach can capture camouflaging behaviours and their success in a naturalistic environment, it relies on the observer's expectations of what camouflaging looks like, their understanding of how the autistic individual typically behaves, and the context being observed often at a single point in time. Alternatively, self-report of camouflaging behaviours, as facilitated by Hull et al. (2017), allows camouflaging to be conceptualized by those using camouflaging. This reduces the potential for observer bias and allows camouflaging to be described in different contexts by persons who employ the strategy.

Hull et al. (2019) developed a psychometric measure of camouflaging behaviour. Preliminary items were identified from qualitative responses obtained by Hull et al. (2017) and through consultation with autism experts. In a cohort of autistic and non-autistic individuals (based on self-report), the initial 48-item measure, referred to as the Camouflaging Autistic Traits Questionnaire (CAT-Q), was assessed. Exploratory analysis of the initial measure identified three factors: Compensation (strategies to compensate for social and communication difficulties), Masking (strategies to present as non-autistic or less-autistic to others), and Assimilation (strategies used to fit in to uncomfortable social situations). Examination of factor loadings led to a reduction in items, resulting in a final 25-item measure. High internal consistency and test-retest reliability were found for the final scale and the three factors. The total CAT-Q, compensation, and assimilation scores were significantly positively correlated



with autistic traits in both autistic and non-autistic samples, measured using the Broad Autism Phenotype Questionnaire (Hurley et al., 2007). Masking was suggested to reflect more general impression management strategies that may be utilized in response to being identified as having autism rather than to hide specific autism characteristics. Overall, the CAT-Q is a valid and reliable self-report measure of camouflaging behaviours in adults, suitable for autistic and non-autistic, male and female populations (Hull et al., 2019).

As the evidence suggests camouflaging may reduce threat to autistic individuals and may improve other social circumstances associated with lower victimisation such as increased peer relationships (Turner et al., 2011), camouflaging may serve as a protective factor against victimisation. Alternatively, camouflaging may decrease access to support, potentially increasing the risk of victimisation. Exploring the relationship between self-reported camouflaging and victimisation in autistic and PDA adults may further the understanding of victimisation experiences in autism and PDA individuals and identify protective factors within these populations.

### Aims

The aim of this study is to explore the relationship between autism traits, PDA traits, camouflaging behaviours, and victimisation in a general population sample. To the author's knowledge, this is the first investigation of the association between camouflaging and victimisation. It is hypothesised that there will be a relationship between camouflaging behaviours, measured using the Camouflaging Autistic Traits Questionnaire (Hull et al., 2019) and victimisation, measured using an adult retrospective version of the Juvenile Victimization Questionnaire (Hamby et al., 2005). Additionally, an association

between Autism traits, measured using the Ritvo Autism Asperger Diagnostic Scale Revised (Eriksson et al., 2013), and camouflaging behaviours is expected, as is an association between PDA traits, measured using the Extreme Demand Avoidance Questionnaire – Adult (Egan et al., 2019), and camouflaging behaviours. It is also anticipated that there will be an association between autism traits and victimisation. Although the relationship between PDA and victimisation has not been explored, the victimisation experiences of autistic individuals may extend to PDA individuals given the areas of overlap of certain traits. For example, difficulties in social interaction and communication may increase the risk of victimisation in PDA individuals. Therefore, it is also hypothesised that PDA traits will be associated with victimisation.

## **Method**

### Design

This was a cross-sectional quantitative predictor-outcome study with the outcome variable of self-reported victimisation and the predictor variables being scores for self-reported camouflaging behaviour, autism traits, and PDA traits.

### Ethical Considerations

Ethical approval for this study was granted by the University of Nottingham's Faculty of Medicine and Health Sciences Research Committee (Ethics Reference Number 382-1909; see Appendix H). General Data Protection Regulations applied to all information gathered and all information collected was stored on a password-locked computer file. There were no monetary or other incentives for taking part in the study. Participants were provided with information regarding the study aims and procedure. This explained that due to the anonymous nature

of the study, once responses were submitted, they could not be withdrawn. Participants were informed that they could withdraw from the study at any time without consequence by closing the browser window.

All participants were required to provide informed consent to partake in the study. The true aims of the study were concealed to prevent sampling bias. It is possible that individuals who use camouflaging may be less likely to partake in a study exploring camouflaging as autistic individuals have reported being concerned that a greater awareness of camouflaging in the general population could lead to poorer outcomes for some individuals (Hull et al., 2017). Therefore, the aim of the study was described as investigating social processes and risky behaviour. If participants did not want to disclose camouflaging during the study, they could withdraw from the study at any point without consequence. Once all questionnaires were completed, participants were debriefed regarding the true aims of the study (Appendix M). Information for relevant resources and support groups, such as victim support and citizens advice were also provided.

### Participants and Recruitment

The study aimed to measure autism and PDA traits in adults in the general population. Groups associated with autism and PDA on online platforms such as Facebook and Reddit were targeted to recruit those who may present with autistic and PDA traits and groups associated with research were contacted to recruit those who may not present with autistic or PDA traits. Gatekeepers for these pages were contacted to request permission to share the study. If permission was granted, the study advert (Appendix I) was posted either by the gatekeeper or the researcher using a research user profile. The University of

Nottingham's School of Medicine's Twitter page also shared the study advert to recruit adults from the general population who may have no association to autism or PDA. This strategy aimed to recruit a sample of participants who displayed variability in their scores for autism and PDA as this is reflective of the general population. The study was open to participants from any country. Individuals under the age of 18 years were excluded, as were individuals reporting 'poor' or 'very poor' reading and writing abilities on a self-report item in the preliminary questionnaire. To achieve a realistic effect size of 0.15 at  $p < 0.01$  with a power of 0.95, a sample size of at least 170 participants was required.

### Procedure

The study was conducted using the Bristol Online Survey research platform. Participants accessed the online survey through a link in the study advert. First, participants were provided with the information regarding the study aims and procedure (Appendix J). They then provided informed consent through an electronic consent form (Appendix K). Following this, participants completed the preliminary questionnaire and a series of questionnaires, including those for the study described in Chapter Five (see Appendix L and M). Combining the methodologies of the two studies aimed to reduce boredom or practice effects from administering the same questionnaires to possibly the same participants. The questionnaires took approximately 20 minutes to complete. Each measure was displayed in succession on individual pages of the online questionnaire with instructions for each displayed at the top of the corresponding page. On completion of the questionnaires, participants were presented with the participant debrief information (Appendix N).

## Measures

1. *Preliminary Questionnaire*: Participants were asked to report their age and gender in a preliminary questionnaire. They were also asked “how would you rate your basic reading and writing abilities?” which could be scored as ‘very poor’, ‘poor’, ‘average’, ‘good’, or ‘very good’. If participants selected ‘very poor’ or ‘poor’, they were redirected to a webpage which informed participants that they were not eligible to participate in the study. This was to ensure all participants were able to read and respond to the questionnaire items. Participants were also asked if they had any of the following diagnoses: autism, PDA, ADHD, Dyslexia, Dyspraxia, Intellectual/Learning Disability, Oppositional Defiant Disorder, Conduct Disorder, Depression and Anxiety. This was rated as yes/no. This aimed to identify characteristics of the sample. Participants were also provided with the opportunity to report whether their diagnosis was made by a doctor through the question, “was this diagnosed by a doctor”, with yes/no response options, to provide more context to the self-reported diagnoses.
2. *The Extreme Demand Avoidance Questionnaire – Adult* (EDA-QA; Egan et al., 2019): The EDA-QA is a self-report measure of PDA symptomatology in adults which has high criterion validity and reliability (Egan et al., 2019). The 26 items are scored on a four-point likert scale (1=not true, 4=very true) providing a single score indicating the level of PDA traits, with higher scores indicating greater PDA traits. Items include “*I obsessively resist and avoid ordinary demands and requests*” and “*I tell other people how they should behave but do not feel these rules apply to me*”. Cronbach’s alpha in this sample was 0.92 ( $n=210$ ).
3. *14-item Ritvo Autism Asperger Diagnostic Scale – Revised* (RAADS-14;

Eriksson et al., 2013): The RAADS-14 is a self-report screening tool for autism traits. The 14-items are scored on multiple-choice single-response scale (3=true now and when I was young, 2=true only now, 1=true only when I was younger than 16, and 0=never true). Items include "*it is very difficult for me to work and function in groups*" and "*I can chat and make small talk with people*". The RAADS-14 has high sensitivity and specificity in general population samples, and good psychometric properties (Eriksson et al., 2013). RAADS-14 scores provide an insight into participant's autistic traits: higher scores indicate greater autistic traits. Cronbach's alpha was 0.92 ( $n=215$ ).

4. *Camouflaging Autistic Traits – Questionnaire* (CAT-Q; Hull et al., 2019): The CAT-Q is a self-report measure of camouflaging behaviour. The 25 items are scored on a seven-point Likert scale (1=strongly disagree, 7=strongly agree). The scale includes three subscales: compensation, masking, and assimilation. An example item is "*when I am interacting with someone, I deliberately copy their body language or facial expressions*". It has demonstrated good internal consistency and reliability (Hull et al., 2019). The CAT-Q provides a total score for overall camouflaging, with higher scores indicating greater camouflaging. Cronbach's alpha was 0.93 ( $n=212$ ).

5. *The Patient Health Questionnaire – 9* (PHQ-9; Kroenke et al., 2001): The PHQ-9 is a nine-item self-report questionnaire measuring current symptoms of depression. Items are rated on a four-point scale (0=not at all, 3=nearly every day). For example, respondents are asked how often in the past two weeks how often they have been bothered by feeling tired or having little energy, and feeling down, depressed, or hopeless. The PHQ-9 is appropriate for a general population sample (Kocalevent et al., 2013) and has good

internal consistency, test-retest reliability, predictive validity, and criterion validity (Kroenke et al., 2010; Martin et al., 2006). It also maintains reliability when administered on a computer (Fann et al., 2009). The PHQ-9 provides a single score indicative of current symptoms of depression which was included in this study as both camouflaging and victimisation have been associated with depression. Thus, symptoms of depression may influence the relationship between camouflaging and depression. Cronbach's alpha was 0.90 ( $n=216$ ).

6. *Generalised Anxiety Disorder Screener (GAD-7; Spitzer et al., 2006)*: The GAD-7 is a seven-item self-report questionnaire which measures symptoms of anxiety present in the last two weeks. Respondents are asked how often in the past two weeks they have been bothered by feeling nervous anxious or on edge, and feeling afraid as if something awful might happen, for example. It is scored on a four-point Likert scale (0=not at all, 3=nearly every day). The authors report good reliability, construct validity, and criterion validity in clinical samples. It is reliable and valid when used within the general population (Löwe et al., 2008). It has also demonstrated good specificity and sensitivity (Plummer et al., 2016). The GAD-7 provides a single score indicating the presence of anxiety symptoms. The GAD-7 was included in this study as camouflaging and victimisation have been associated with anxiety, meaning it may influence the relationship between the two. Cronbach's alpha was 0.91 ( $n=219$ ).

7. *Juvenile Victimization Questionnaire (JVQ; Hamby et al., 2005) – Adult Retrospective Questionnaire (JVQ-AR; Weiss & Fardella, 2018)*: The JVQ is a self-report questionnaire regarding the frequency of childhood victimisation. The JVQ has demonstrated good construct validity, test-retest reliability, and

inter-rater reliability (see Chapter Three). Weiss and Fardella (2018) modified the JVQ to assess experiences of victimisation in adulthood. The authors removed items pertaining to childhood and changed the target period to 18 years and up. This modified 29-item questionnaire (JVQ-AR) was used in this study to assess adult experiences of victimisation. It is scored using a dichotomous scale (1=experienced, 0=not experienced). The items are summed to provide a total score indicating the number of self-reported victimisation experiences. Cronbach's alpha for the total JVQ score was 0.87 ( $n=213$ ).

The measures were presented in the above order. Reflecting on previous victimisation experiences may elicit negative emotions in participants, subsequently impacting upon scores for depression and anxiety. Thus, measures for depression and anxiety were completed before the measure of victimisation.

### Statistical Analysis

Data was cleaned, coded, scored, and analysed using SPSS version 24. Gender was coded as 0=female, 1=male, and 2=other. All missing data was coded as 999. In total, 1798 individuals accessed the online survey, though only 225 completed the survey. Thus, the study had a large attrition rate which mostly occurred when the study information being provided.

Partial correlations were used to remove any age and gender effects to examine the relationships between camouflaging, victimisation, PDA and autism traits, and symptoms of anxiety and depression. Although age and gender may influence each of these variables, this is not related to the current research question. Thus, partial correlation analysis aims to see if correlations exist



between the variables, separately from any influence of age and gender.

Multiple regression was performed to determine the relative contribution of camouflaging, PDA and autism traits, depression, and anxiety to victimisation scores. The Durbin Watson test indicated acceptable independence of errors (Durbin & Watson, 1951). Linearity testing identified linear relationships between the dependent variable and independent variables ( $p < 0.05$ ). Although there were correlations between the independent variables, these were not large correlations and examination of VIF values and tolerance statistics based on Field's (2018) recommendations did not imply problems with multicollinearity. There were no outliers or influential cases based on Cook's distance. The P-P plot demonstrated acceptable normally distributed residuals. However, there was evidence of heteroscedasticity. Regression with non-transformed data was therefore computed using the heteroskedastic-consistent standard errors approach recommended by Astivia and Zumbo (2019). This approach recognises the presence of non-constant variance.

## **Results**

### Descriptive Statistics

In total, 225 participants completed the online survey. Data from four participants were removed due to incomplete response data. One additional dataset was removed as the participant did not meet the inclusion criteria (age > 18), resulting in a sample size of 220. The final sample included 167 women, 45 men, and 5 identifying as 'other'; three participants did not report their gender. Participants were aged between 18 and 75 (mean = 32.14 years,  $SD = 11.28$ ). Participants were asked to report whether they had any of the listed conditions. The number of participants reporting each diagnosis is presented in

Table 6. The average number of total self-report diagnoses was one ( $SD=1.51$ ).

**Table 6**

*Number of Participants Self-Reporting Diagnoses from Preliminary Questionnaire and whether the Diagnosis was made by a Doctor.*

<b>Diagnosis</b>	<b>Self-Reported Diagnosis (n)</b>	<b>Diagnosed by a Doctor (n)</b>
Autism	35	21
PDA	24	4
ADHD	25	15
Learning Disability	1	1
Dyslexia	12	9
Dyspraxia	12	4
Depression	57	47
Anxiety	85	61
Oppositional Defiant Disorder	0	0
Conduct Disorder	0	0
None	112	-

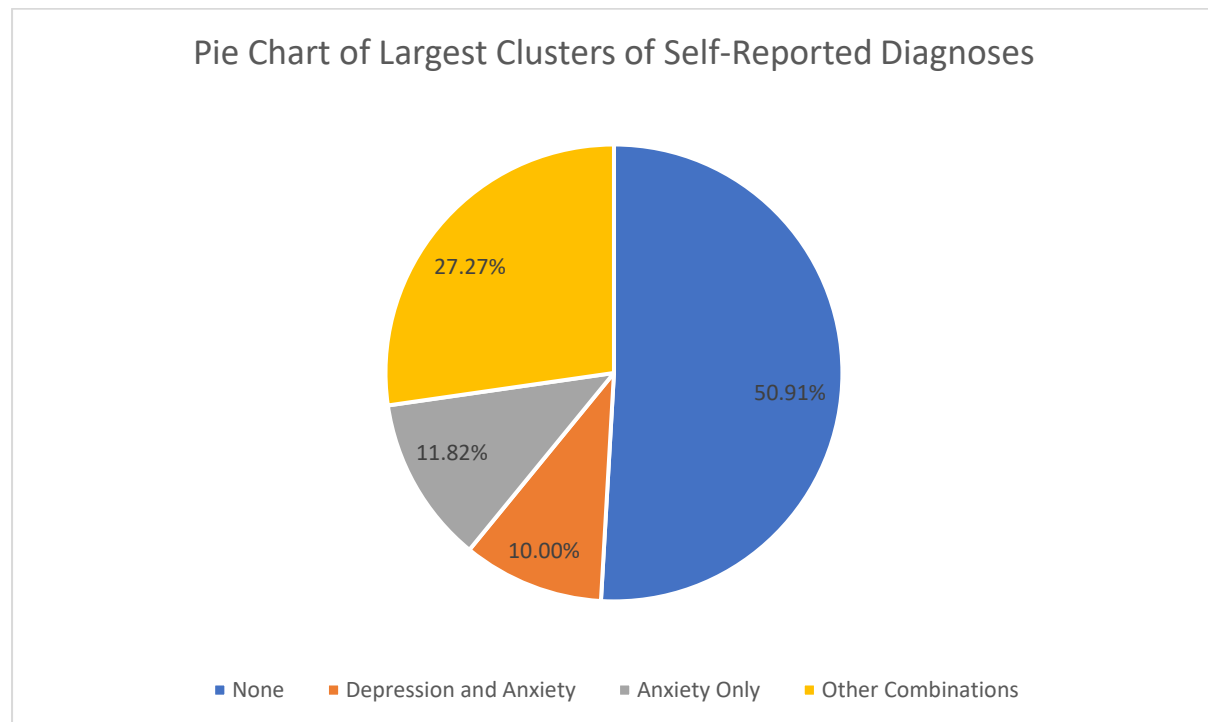
*PDA=Pathological Demand Avoidance; ADHD=Attention Deficit Hyperactivity Disorder*

Many of these diagnoses co-occurred, with some participants reporting up to six diagnoses. Figure 6 presents the most common clusters of self-reported diagnoses made by participants from the options provided. Aside from those not reporting any of these disorders, the most common self-reported diagnosis was Anxiety only. This was followed by Depression and Anxiety together. Other combinations of self-report diagnoses made up the remaining 27.27% of the sample. This included almost 3% reporting autism, PDA, depression, and anxiety, and 2.27% report having depression only. Participants were also provided the opportunity to report "other" diagnoses they had in a free response question. Responses included Obsessive Compulsive Disorder, Panic Disorder,

PTSD, Dissociative Identity Disorder, Borderline Personality Disorder, and Schizoaffective Disorder.

**Figure 6**

*Pie Chart of Largest Clusters of Self-Reported Diagnoses from Preliminary Questionnaire*



Mean scores for the questionnaires are presented in Table 7. Participants scored on average within the range for mild anxiety on the GAD-7 and in the mild range for depression on the PHQ-9. On the RAADS-14, the average score was 15.07 ( $SD=12.45$ ). The cut-off of score for the RAADS-14 is 14: 43.6% of participants scored above this cut-off. On the EDA-QA, the mean score was 46.30 ( $SD=13.62$ ). Cut-off scores for the EDA-QA are not yet provided. On the child and adolescent version of the EDA-QA, those scoring 45 and above are those at high risk of showing features of PDA (O’Nions, Christie, et al., 2014). In this sample, 44.1% scored above 45 on the EDA-QA. The average score on the CAT-Q was 94.11 ( $SD=28.49$ ). Data from autistic individuals found an average

score on the CAT-Q of 124 for women and 110 for men (Hull et al., 2020). This indicates that, on average, participants in this sample reported fewer camouflaging behaviours than a sample of autistic individuals.

On average, participants reported five victimisation experiences in their adulthood on the JVQ-AR. In their adulthood, 48.2% of participants reported experiencing property crime at least once; 44.5% reported experiencing physical assault at least once; 56.4% experienced maltreatment at least once; 36.4% experienced peer victimisation at least once; 59.5% witnessed victimisation at least once; and 45% experienced sexual victimisation at least once.

**Table 7**

*Mean Scores and Standard Deviations for the Psychometric Measures*

<b>Variable</b>	<b>Mean (SD)</b>
EDA-QA	46.30 (13.62)
RAADS-14	15.07 (12.45)
CAT-Q	94.11 (28.49)
PHQ-9	8.58 (6.75)
GAD-7	7.49 (5.64)
JVQ-AR	5.30 (4.91)

*PHQ-9=Patient Health Questionnaire 9; GAD-7=Generalised Anxiety Disorder Screener 7; RAADS-14=14-Item Ritvo Autism Asperger Diagnostic Scale Revised; EDA-QA=Extreme Demand Avoidance Questionnaire Adult; CAT-Q=Camouflaging Autistic Traits Questionnaire; JVQ-AR=Juvenile Victimization Questionnaire – Adult Retrospective Questionnaire.*

### Correlational Analysis

Partial correlation analysis was conducted to determine the relationship between

scores on the EDA-QA, RAADS-14, CAT-Q, PHQ-9, GAD-7, and JVQ-AR, whilst controlling for age and gender. The results are presented in Table 8.

**Table 8**

*Partial Correlation Analysis Between Total Scores for all Psychometric Measures*

<b>Variable</b>	<b>EDA-QA Total</b>	<b>RAADS- 14 Total</b>	<b>CAT-Q Total</b>	<b>PHQ-9 Total</b>	<b>GAD-7 Total</b>	<b>JVQ- AR Total</b>
<b>EDA-QA Total</b>	-	0.58**	0.61**	0.48**	0.50**	0.31**
<b>RAADS- 14 Total</b>	-	-	0.61**	0.40**	0.46**	0.20*
<b>CAT-Q Total</b>	-	-	-	0.42**	0.45**	0.16*
<b>PHQ-9 Total</b>	-	-	-	-	0.74**	0.43**
<b>GAD-7 Total</b>	-	-	-	-	-	0.39**

\* $p < 0.05$ ; \*\* $p < 0.001$ ; PHQ-9=Patient Health Questionnaire 9; GAD-

7=Generalised Anxiety Disorder Screener 7; RAADS-14=14-Item Ritvo Autism Asperger Diagnostic Scale Revised; EDA-QA=Extreme Demand Avoidance Questionnaire Adult; CAT-Q=Camouflaging Autistic Traits Questionnaire; JVQ-AR=Juvenile Victimisation Questionnaire – Adult Retrospective Questionnaire.

There was a weak positive correlation between CAT-Q scores and JVQ-AR scores whilst controlling for age and gender, which was statistically significant. There was also a weak positive correlation between RAADS-14 scores and JVQ-AR scores, whilst controlling for age and gender, which was statistically significant. Additionally, there was a moderate, positive, correlation between EDA-QA scores and JVQ-AR scores whilst controlling for age and gender, which was statistically significant. Zero-order correlations indicated that age and gender had little influence over the correlation between JVQ-AR and CAT-Q

scores ( $r=0.15$ ,  $p<0.05$ ), RAADS-14 scores ( $r=0.21$ ,  $p<0.05$ ) and EDA-QA scores ( $r=0.31$ ,  $p<0.001$ ).

CAT-Q scores were significantly positive correlated with EDA-QA scores, RAADS-14 scores, PHQ-9 scores, and GAD-7 scores, whilst controlling for age and gender. Examination of the zero-order correlations between CAT-Q scores and EDA-QA scores, RAADS-14 scores, PHQ-9 scores, and GAD-7 scores indicated that age and gender had little influence over the correlations ( $p<0.001$ ). Thus, as scores for camouflaging increased, so did scores for PDA and autism traits, and symptoms of depression and anxiety.

There was a strong, positive correlation between EDA-QA scores and RAADS-14 scores, whilst controlling for age and gender, which was statistically significant. Examination of the zero-order correlations showed there was a statistically significant, strong, positive correlation between EDA-QA scores and RAADS-14 scores ( $r=0.58$ ,  $p<0.001$ ), indicating that age and gender had little influence in the relationship between PDA and autism traits. Thus, as scores for autistic traits increased, so did scores for PDA traits. Both RAADS-14 scores and EDA-QA scores were at least moderately correlated with PHQ-9 and GAD-7 scores ( $p<0.001$ ).

#### Multiple Linear Regression

A multiple regression was conducted to predict JVQ-AR scores from CAT-Q, RAADS-14, EDA-QA, PHQ-9, and GAD-7 scores. CAT-Q, RAADS-14, EDA-QA, PHQ-9, and GAD-7 scores significantly predicted JVQ scores  $F(5, 214)=11.04$ ,  $p=0.001$   $R^2=0.21$ . EDA-QA ( $p=0.02$ ) and PHQ-9 ( $p=0.002$ ) scores were significant predictors within the model. Regression coefficients and standard errors can be found in Table 9.

**Table 9**  
Multiple Regression Analysis Predicting JVQ-AR scores

JVQ-AR Scores	<i>B</i>	95% CI for <i>B</i>		<i>SE B</i>	$\beta$	<i>R</i> <sup>2</sup>	$\Delta R^2$
		LL	UL				
Model						0.21	0.19**
Constant	1.85	-1.04	4.75	1.48			
EDA-QA	0.07*	-0.00	0.15	0.04	0.20		
RAADS-14	0.01	-0.05	0.07	0.03	0.02		
CAT-Q	-0.03	-0.06	0.00	0.01	-0.16		
PHQ-9	0.21**	-0.06	0.35	0.07	0.29		
GAD-7	0.11	-0.05	0.27	0.08	0.12		

Parameter estimates with robust standard errors. Model="Enter" method in SPSS Statistics; *B*=unstandardised regression coefficient; CI=confidence interval; LL=lower limit, UL=upper limit; *SE B*=standard error of the coefficient;  $\beta$ =standardised coefficient; *R*<sup>2</sup>=coefficient of determination;  $\Delta R^2$ =adjusted *R*<sup>2</sup>; PHQ-9=Patient Health Questionnaire 9; GAD-7=Generalised Anxiety Disorder Screener 7; RAADS-14=14-Item Ritvo Autism Asperger Diagnostic Scale Revised; EDA-QA=Extreme Demand Avoidance Questionnaire Adult; CAT-Q=Camouflaging Autistic Traits Questionnaire; JVQ-AR=Juvenile Victimisation Questionnaire – Adult Retrospective Questionnaire. \**p*<0.05, \*\**p*<0.01.

## **Discussion**

To the author's knowledge, this study is the first to explore the relationship between camouflaging and victimisation. Based on previous findings that camouflaging occurs in response to threat (Bernardin et al., 2021; Cage & Troxell-Whitman, 2019), with autistic individuals reporting that they were ostracised, verbally or emotionally attacked, and physically assaulted when they had not camouflaged their autism (Hull et al., 2017), it was expected that there would be a relationship between camouflaging and victimisation. The correlational analysis indicates a positive association between camouflaging and victimisation experiences, suggesting the more a person reports engaging in camouflaging, the greater the number of victimisation experiences they report. However, scores for camouflaging behaviours were unable to predict victimisation scores, meaning camouflaging behaviours alone are unlikely to increase the risk of victimisation.

Although camouflaging may be associated with an increased frequency of victimisation, this study cannot identify whether camouflaging was utilized prior to, during, or after the victimisation experience. It may be those who are victimised more use more camouflaging, or it may be that those who camouflage more are more likely to be victimised. Additionally, this study did not explore whether camouflaging attempts were successful or not which may influence the relationship between camouflaging and victimisation. Nevertheless, the findings illustrate a relationship between camouflaging and victimisation, justifying further investigation. It may be useful to examine camouflaging behaviours in autistic and PDA children longitudinally to identify the temporal order of experiences.

It was also expected that autism and PDA traits would be associated with



victimisation, which is supported by the correlational analysis. Specifically, as scores for autism and PDA traits increased, victimisation scores increased. There is conflicting evidence regarding the association between autism traits and victimisation, with some researchers suggesting that autism traits increase the risk of victimisation (Cappadocia et al., 2012; Sterzing et al., 2012) and others finding that autism traits were not associated with victimisation (Brenner et al., 2018; Brown-Lavoie et al., 2014; van Schalkwyk et al., 2018). As autism traits did not significantly predict victimisation, autism traits alone may not increase the risk of victimisation. On the other hand, PDA traits did significantly predict victimisation. Further research into the victimisation experiences of PDA individuals is required to gain a better understanding of the relationship between PDA traits and victimisation.

Understanding the relationship between autism and PDA and the risk of victimisation could help identify interventions to reduce this, such as education and awareness training on autism and PDA in schools and other establishments to reduce potential stigma associated with the conditions, and skills training for autistic and PDA individuals to develop protective social and communication skills. This could also reduce the occurrence of negative outcomes as victimisation is associated with symptoms of anxiety and depression in autistic individuals (Elzinga, 2017; Hu et al., 2019; Mayes et al., 2015; Paul et al., 2018; Sedgewick, 2018; Ung et al., 2016). This study found a positive correlation between self-reported symptoms of depression and anxiety and victimisation scores. Previous research has found depression and anxiety to be consequences of victimisation (e.g., Lagdon et al., 2014; Wise et al., 2001) and risk factors for victimisation (e.g., Acquah et al., 2016; Goldbaum et al., 2003; Lester et al., 2012). In this study, scores for depression were a significant

predictor of victimisation scores, suggesting that greater symptoms of depression are associated with a greater risk of victimisation. However, it cannot be determined whether depression and anxiety are consequences of or risk factors for victimisation given the cross-sectional nature of the study. Longitudinal research would be better able to understand the temporal order of these phenomena.

The results of this study are in line with previous research, finding that autism traits were positively correlated with camouflaging behaviours with moderate strength (Hull et al., 2019). Although this study did not use validated diagnoses of autism, the results are consistent with those found by Hull et al. (2019) that was camouflaging positively correlated with autism traits (assessed using the Broad Autism Phenotype Questionnaire; Hurley et al., 2007) in non-autistic samples. The authors suggested that the higher level of autism traits, the more they will camouflage those traits, irrespective of an autism diagnosis, which is reflected in the results of this study.

This was one of the first studies exploring the expression of PDA traits in adulthood. There is ongoing debate as to whether PDA is part of the autism spectrum or a separate condition (Green et al., 2018). Although previous research has found similar levels of autistic-like traits in children with PDA and autistic children (O’Nions, Viding, et al., 2014), research exploring PDA traits in adults is sparse. In this study, autism traits and PDA traits positively correlated with moderate strength, indicating that greater PDA traits were associated with greater autism traits. This suggests there is a relationship between autism and PDA in adulthood. However, this contrasts with the findings of Egan et al. (2019) who found a negative relationship between PDA and autism traits when using a short form of the Autism Quotient (Kuenssberg et al., 2014), possibly because

this measure largely captures systematizing aspects of autism, rather than social aspects captured in this study. Further research into the adult presentation of PDA is required to explore the trajectory of the condition and its relation to autism.

PDA traits were moderately positively correlated with camouflaging behaviours, confirming the self-reported experiences of the PDA community (Cat, 2018; PDA Society, n.d.). Further investigation into whether camouflaging in autism and PDA are qualitatively similar is required. Motivations for camouflaging may differ between autism and PDA, given the different experiences of the populations. For example, autism is a well-established, widely accepted developmental condition, whereas there is a lack of consensus over the nature of PDA (see Green et al., 2018). Possible scrutiny and lack of validation may influence camouflaging of PDA.

Camouflaging has been described as exhausting (Hull et al., 2017) and has been associated with increased symptoms of depression and anxiety (Cage et al., 2018; Cage & Troxell-Whitman, 2019; Hull et al., 2019). In the current study, camouflaging was moderately positively correlated with scores for depression and anxiety. Thus, camouflaging appears to have an impact on an individuals' mental health which may influence the risk of victimisation. Cassidy et al. (2018) found camouflaging behaviours increased the risk of suicidality, highlighting the potential catastrophic impact of camouflaging. This demonstrates the importance of facilitating a more autism-friendly world to reduce the need for camouflaging. Consideration of whether the benefits of camouflaging outweigh the costs could identify where change is needed.

Overall, the findings of this study suggest that camouflaging may not be a protective factor against victimisation as greater use of camouflaging behaviours

was associated with more victimisation. However, scores for camouflaging behaviours were unable to predict victimisation, indicating that camouflaging alone may not increase the risk of victimisation. Mental health difficulties may be a mediating factor between the two. As only 21% of the variance in victimisation scores was predicted by the included variables, there are factors not measured in this study that may be influential in the relationship between victimisation, camouflaging, autism, and PDA. For instance, access to services, support systems, or interventions may influence the risk of victimisation. Considering all the findings in this study, autistic and PDA individuals are likely to utilize camouflaging behaviour which could indirectly increase their risk of victimisation through the impact on mental health difficulties.

### Strengths and Limitations

There are several strengths in this study. Firstly, all measures used had high reliability. This provides support for the reliability of the CAT-Q as a psychometric measure of camouflaging. It should be noted that the scoring procedure used with the JVQ-AR does not follow the recommended scoring procedures of the original JVQ (Hamby et al., 2005). The authors recommend scoring each subscale with a score of one if any victimisation experience is reported within that subscale. In this study, a score of one was assigned for each item endorsed. This does not impact on the properties of the JVQ-AR and the scale maintained reliability assessed using Cronbach's alpha. However, it is possible that participants endorsed multiple items relating to an individual experience. Nonetheless, the scoring method used may be considered more informative of the specific types of victimisation experienced by the participants.

Furthermore, the sample size was sufficiently powerful to elicit a moderate

effect size. However, the sample was predominantly female. More attention should have been given to gender in this study as a large proportion of autistic individuals identify as non-binary (Cooper et al., 2018; Dewinter et al., 2017). A recent meta-analysis identified a high prevalence of mental health difficulties and victimisation experiences in LGTBQ+ youth (Williams et al., 2021). Thus, gender identify is an important factor to consider when examining victimisation in autistic individuals. Information on socio-economic status, ethnicity, IQ, and educational attainment were also not collected in this study which prevents a reliable estimation of the representativeness of the sample and subsequently the generalization of the results. These variables may influence the relationship between camouflaging and mental health difficulties (Hull et al., 2021), including the association with victimisation. Future research should seek to capture greater demographic data to allow for an exploration of moderating or mediating factors.

There are also limitations within the current study. Firstly, as camouflaging in autism is suggested to be different from ordinary impression management (Bargiela et al., 2016), different results might be expected in a sample of individuals with validated diagnoses of autism compared to this general population sample. Nonetheless, the RAADS-14 provides a valid screen for autism traits. Future research should explore the relationship between victimisation, autism, PDA, and camouflaging in more stringently defined populations. Secondly, the cross-sectional design of the study prevents the identification of the direction of relationships between variables. Camouflaging may be initiated during or after victimisation experiences which cannot be determined in this study. Similarly, depression and anxiety may be both risk factors for and consequences of victimisation.

Furthermore, the study topic may have influenced the results.

Victimisation is a sensitive topic which may influence participants' disclosure of victimisation experiences (Pellegrini, 1998; Pfeffer, 2016). This would impact on the reliability of the results. Nevertheless, participants reported experiencing on average five victimisation experiences, suggesting they were willing to disclose some information. The distance between the participant and the researcher, facilitated through the anonymous online setting, may have improved participants' openness. However, alexithymia is common in autistic individuals and can include difficulties recognizing and distinguishing between different emotions and bodily sensations and difficulties in expressing emotions (Kinniard et al., 2019). The presence of alexithymia may have impacted on the reliability of the results, particularly on the measures of depression and anxiety. Future research should consider the use of measures of alexithymia such as the Toronto Alexithymia Scale (Bagby et al., 1994) to assess the potential impact of alexithymia. Finally, the assumption of normally distributed residuals in the multiple linear regression was violated. Therefore, the results may have limited generalisability outside of this sample.

### Implications and Future Directions

The results of this study confirm those found in Chapter Two that autism is associated with victimisation and provides evidence that PDA individuals are also likely to be victimised. Thus, preventative interventions are required. As this study also demonstrated associations between camouflaging and victimisation, it may be useful for organisations within Social and Criminal Justice Systems to be aware of the possibility of camouflaging of autism and PDA. Although recommendations have been introduced in the UK to support autistic individuals

such as the Autism Act (2009) which aims to increase awareness and understanding of autism across all public services, the Registered Intermediary Scheme which provides a trained professional to vulnerable witnesses or victims to assess the abilities and needs of the individual (Cooper & Wurtzel, 2013), and guidance from the National Autistic Society (2017) for how to support autistic individuals, these provisions may not be utilized if an individual's autism or PDA is camouflaged.

If camouflaged, the behaviour of autistic and PDA individuals may be misinterpreted by professionals. For instance, when providing a witness statement or victim testimony, the behaviour of autistic individuals (e.g., failure to make eye contact, repetitive movement, lack of affect in facial expressions or spoken language) may make them appear less credible or trustworthy (Brewer & Young, 2018). It has been suggested that officers should ask "do you have any difficulties I may not be aware of?" to encourage disclosure of hidden conditions (Chown, 2010). This may encourage those camouflaging their autism or PDA to disclose their diagnosis, though clinicians should be aware of the possibility of negative emotions associated with talking about camouflaging (Hull et al., 2017). Examination of the use of camouflaging by autistic and PDA individuals when they enter the Criminal Justice System as victims could identify additional means of support or intervention.

This study has also highlighted areas for future research. Examining the onset and frequency of camouflaging behaviour could further the understanding of camouflaging in autism and PDA. Qualitative research into the experiences of adults with PDA would be useful for understanding how camouflaging manifests in these individuals and how this may differ from autistic individuals. This may also be useful for understanding the relationship between PDA and autism.

Types of victimisation experiences should be considered to ascertain a better understanding of the association with camouflaging behaviours. Triangulation of methods should be applied: the combination of qualitative and quantitative measures could provide meaningful information into camouflaging behaviour and its relationship to autism, victimisation, depression, and anxiety.

### Conclusions

This study provides initial insights into the relationship between camouflaging and victimisation alongside autistic and PDA traits. If individuals need to camouflage to protect themselves, despite the consequences of camouflaging such as mental health difficulties and an increased risk of victimisation, there is a need for greater autism and PDA awareness and acceptance in society. This could lead to a reduced risk of victimisation, therefore decreasing the need for camouflaging and the associated negative outcomes.



## **Chapter Five**

### **Empirical Study Two**

#### **Camouflaging and Offending Behaviour in Adults: The Relationship with Autism and Pathological Demand Avoidance Traits**

### **Abstract**

Previous research has found both autism and PDA traits to be associated with offending behaviour. This study aimed to investigate the association between offending behaviour and social camouflaging in relation to autism and PDA traits. It was hypothesised that camouflaging would be associated with offending behaviour as camouflaging can impact on the specialist support available to an individual. Camouflaging, offending behaviour, autism and PDA traits, and symptoms of depression and anxiety were measured using questionnaires administered to a general population sample ( $n=220$ ) through an online survey. Correlational analysis found a positive association between camouflaging and lifetime offending behaviour but not offending behaviour in the past year. Greater camouflaging and PDA traits significantly predicted greater lifetime offending behaviour in multiple linear regression analysis. Greater autism traits significantly predicted fewer offending behaviours. Overall, camouflaging appears associated with an increased risk of offending which requires further investigation. The presence of camouflaging may interfere with the support and provisions available to individuals in the Criminal Justice System. Thus, an awareness of the possibility of camouflaging would be helpful to ensure autistic and PDA individuals can be appropriately supported.

## **Introduction**

The previous chapters in this thesis have considered autistic individuals as the victims of crime. Autistic individuals may also be perpetrators of criminal or victimizing behaviour (see King & Murphy, 2014). The interaction between autism and the environment, such as difficulties in social interaction and communication, can influence aggressive, destructive, and defiant behaviour (Hartley et al., 2008; Murphy et al., 2005). Howlin (2004) suggests factors associated with autism may increase the risk of committing aggressive or criminal acts (as cited in King & Murphy, 2014). For example, disruption to routines or adherence to rules and difficulties understanding social situations were suggested to potentially lead to aggressive behaviour. Bjørkly (2009) found approximately a third of violent acts perpetrated by a sample of autistic individuals were motivated by communicative and social misinterpretations of other's intentions. Additionally, Howlin (2004) suggests obsessional interests could lead to offences when pursuing that interest, such as sexual offences (Murrie et al., 2002).

Autistic individuals also display difficulties in ToM (the ability to understand and represent the mental state of others; Frith & Happé, 1995) which has been implicated in the occurrence of violent crime in autistic individuals (Baron-Cohen, 1988; Bjørkly, 2009; Kohn et al., 1998) due to the impact on social situations (Capage & Watson, 2001; Goldberg et al., 2007). Difficulties in emotion regulation can also manifest in impulsivity, aggression, and violence (Eisenberg et al., 1995; Gardner & Moore, 2008). Lerner and colleagues (2012) suggest that the interaction between ToM difficulties and problems regulating emotions could potentiate violence in autistic individuals. They suggest that, if an autistic individual becomes confused or overwhelmed by

social information, they may become physiologically aroused and be unable to regulate these emotions which could lead to aggressive or violent behaviour. While this may not apply to all autistic individuals, it may explain some incidents of violent behaviour.

Furthermore, having autism may exacerbate other problems (Allely et al., 2017) which contribute to the risk of offending. The presence of comorbid conditions, such as schizophrenia and substance misuse, have been hypothesised to increase the risk of violent behaviour in autistic individuals (Gunasekaran & Chaplin, 2012). The association between offending behaviour and mental health difficulties is well established (Sirdifield et al., 2009) and extends to autistic individuals (Payne et al., 2021). Newman and Ghaziuddin (2008) systematically reviewed literature pertaining to the psychiatric status of violent offenders with Asperger Syndrome and found “an overwhelming number of cases had co-existing psychiatric disorders at the time of committing the offence” (p. 1850). Autistic individuals often have co-occurring difficulties. For example, in a national survey of autistic children, 87.3% also had ADHD, anxiety problems, behavioural or conduct problems, and depression (Kogan et al., 2009). ADHD was the most common comorbid condition. Comorbid ADHD may increase the risk of offending behaviour due to increased impulsivity and affective dysregulation (e.g., Copeland et al., 2007; Lundström et al., 2014). Thus, the presence of mental health difficulties and/or comorbid conditions in autistic individuals may increase the risk of offending behaviour.

As outlined in Chapter Four, PDA is described as a developmental condition associated with autism (National Autistic Society, 2020). PDA individuals can display similar difficulties as autistic individuals which may increase the risk of offending behaviour, including emotion regulation difficulties,

difficulties in social interactions, and comorbid ADHD (National Autistic Society, 2020; Newson et al., 2003). Egan et al. (2019) found greater PDA traits significantly predicted more offending behaviour which included anti-social/criminal acts, vandalism, and acquisitive offending in a sample of adults from the general population. Additionally, central to PDA is an extreme avoidance of everyday demands (Newson et al., 2003) which can manifest as 'crisis situations' involving physical and verbal aggression (Christie et al., 2012), potentially leading to Criminal Justice System intervention. Moreover, PDA individuals have shown similar anti-social traits as those associated with Conduct Disorder and Oppositional Defiant Disorder (Gillberg et al., 2015); conditions which are associated with anti-social and oppositional behaviour. Although the prevalence of offending behaviour in PDA has not been explored, PDA individuals may be likely to have contact with the Criminal Justice System due to high levels of impulsivity, emotional lability, and associated personality traits such as antagonism and disinhibition (Egan et al., 2020; Egan et al., 2019).

Despite the association between autistic traits and offending behaviour, research has identified that autistic individuals are not at an increased risk of offending behaviour when compared to non-autistic individuals (Woodbury-Smith et al., 2006). A review of empirical research found that autism was more prevalent in those who had offended, though rates of offending in autistic individuals were the same or lower than non-autistic individuals (King & Murphy, 2014). Another systematic review found prevalence rates of autistic individuals within Criminal Justice System settings to range from 0% to 27% (Railey et al., 2020), highlighting variability in the prevalence of offending behaviour in autistic individuals. The occurrence of offending committed by autistic individuals does not mean there is a causal relationship between autism and crime (Brewer &

Young, 2018). Similarly, Egan et al. (2019) found higher scores for PDA traits predicted a higher number of delinquent acts while Egan et al. (2020) found that, although positively associated, PDA traits were unable to predict delinquency.

Methodological differences could explain some of the variation in the findings surrounding autism and offending behaviour. For instance, official records will only record offending that has been formally investigated or adjudicated. Woodbury-Smith et al. (2006) used both official records and self-report questionnaires to measure offending behaviour. They identified that the official records did not capture all the illegal behaviour that was self-reported. One reason given for this is that two participants were diverted to forensic mental health services. Diversion to psychiatric services may also influence the prevalence of autistic individuals in the Criminal Justice System and bias samples used in research. On the other hand, self-report measures of offending behaviour may be susceptible to social desirability bias. Additionally, the systematic review by King and Murphy (2014) found that most studies used offending samples (e.g., people in prison) and there was variation in the way autism was assessed which could impact on the generalisability of the findings. Therefore, the identified relationships between autism and PDA traits and offending will likely be affected by the sample and measurement tools used.

In summary, although there is a risk of offending behaviour associated with autism and PDA, this does not appear to be a direct relationship. As described, other factors associated with the conditions are likely important when considering the risk of offending behaviour. Understanding risk and protective factors in these populations can inform preventative efforts. One factor which has not yet been explored in relation to offending behaviour is social

camouflaging (see Chapter One, p. 12 for a definition).

Camouflaging may prevent access to specialist services and support for autistic and PDA individuals. Camouflaging can lead to missed or late diagnosis of autism (Gould & Ashton-Smith, 2011) which will impact on the provisions of support available to an individual (Calzada et al., 2012). Later diagnosis of autism has correlated with an increased prevalence of criminal behaviour (Heeramun et al., 2017; Kawakami et al., 2012). Age at diagnosis could influence the timing of interventions relevant for preventing offending (Kawakami et al., 2012). Additionally, lack of understanding of an individual's difficulties due to social camouflaging could result in inappropriate provisions being applied. For example, autistic children often experience difficulties in education due to their symptomatology and conflict with peers (Anderson et al., 2017), which in some cases could result in exclusion from education or transfer to special education provisions. Children with special education needs, including autism, are frequently educated in special education provisions including Pupil Referral Units (Department for Education, 2019). In these settings, autistic children are vulnerable to the influence of peers with emotional, social, and mental health issues which can encourage challenging or troublesome behaviours in the autistic child (Kaplan, 1982). An autistic person may camouflage their autism to fit in with these peers, and subsequently be at an increased risk of engaging in disruptive and antisocial behaviour. This could potentiate future offending behaviour and exploitation from antisocial peers.

Following a criminal offence, camouflaging may lead to behaviour of autistic and PDA individuals being misinterpreted by professionals as aggressive (Archer & Hurley, 2013) and appropriate support may not be provided, impacting on the individual's progression through the Criminal Justice System.

Thus, if not identified by the Criminal Justice System, autistic and PDA individuals may subsequently be at risk of reoffending and experiencing negative outcomes.

### Aims:

This study aims to explore the relationship between camouflaging and offending in association with PDA and autism traits. Camouflaging may influence the risk of offending behaviour by preventing access to diagnosis, support, or specialist services. It is hypothesised that camouflaging, measured using the Camouflaging Autistic Traits Questionnaire (Hull et al., 2019), will be associated with offending behaviour, measured using the Non-Violent and Violent Offending Behaviour Scale (Thornton et al., 2013). The study also aims to investigate the relationship between autism and PDA traits and offending behaviour. It is hypothesised that both autism traits, measured using the Ritvo Autism Asperger Diagnostic Scale Revised (Eriksson et al., 2013), and PDA traits, measured using the Extreme Demand Avoidance Questionnaire Adult (Egan et al., 2019), will be associated with offending behaviour.

## **Method**

### Design

This is a cross-sectional quantitative predictor-outcome study with the predictor variables being scores for PDA and autism traits and camouflaging behaviour, and the outcome variable being self-reported offending behaviour.

### Ethical Considerations

Ethical approval for this study was granted by the University of Nottingham's



Faculty of Medicine and Health Sciences Research Committee (Ethics Reference Number 382-1909; see Appendix H). Details regarding ethical considerations for this study can be found in Chapter Four, p. 97-98. The aim of the study was described as investigating social processes and risky behaviour. Participants were informed that all information was anonymous which may have impacted on participants' willingness to disclose offending behaviour. Upon completion of all questionnaires, participants were debriefed regarding the true aims of the study with an explanation as to why deception was used. Information for resources and support groups, such as victim support and citizens advice, were also provided in the debrief.

#### Recruitment and Procedure

The data used in this study was collected concurrently with the data for the study presented in Chapter Four. Combining the methodologies of the two studies aimed to reduce potential boredom or practice effects caused by administering the same questionnaires to possibly the same participants. Information regarding the recruitment strategy and study procedure can be found in Chapter Four, p. 98-99.

#### Measures

As most of the measures were also used in the study described in Chapter Four, brief descriptions of these measures will be provided here with a focus on measures specific to this study. For more information on the psychometric properties of the measures used, refer to Chapter Four, p. 100-103.

1. *Preliminary Questionnaire:* Age, gender, and reading and writing abilities were captured in an author-designed preliminary questionnaire. Participants

were asked if they had any of the following diagnoses: autism, PDA, ADHD, Dyslexia, Dyspraxia, Intellectual/Learning Disability, Oppositional Defiant Disorder, Conduct Disorder, Depression and Anxiety. This was rated as yes/no. If a participant responded yes to any of the diagnosis options, they were asked "was this diagnosed by a doctor?" with yes/no response options.

2. *The Extreme Demand Avoidance Questionnaire – Adult* (EDA-QA; Egan et al., 2019): The EDA-QA is a 26-item self-report measure of PDA traits in adults on which a higher score indicates a higher prevalence of PDA traits. Cronbach's alpha for this sample was 0.92 ( $n=210$ ).
3. *14-item Ritvo Autism Asperger Diagnostic Scale – Revised* (RAADS-14; Eriksson et al., 2013): The RAADS-14 is a self-report measure of autism traits consisting of 14-items scored on multiple-choice single-response scale. A higher score indicates a higher prevalence of autism traits. Cronbach's alpha was 0.92 ( $n=215$ ).
4. *Camouflaging Autistic Traits – Questionnaire* (CAT-Q; Hull et al., 2019): The CAT-Q is a self-report measure of camouflaging behaviour consisting of 25 items scored on a seven-point likert scale. The CAT-Q provides a total score reflecting the overall level of camouflaging behaviour with a higher score indicating a greater presence of camouflaging behaviours. Cronbach's alpha was 0.93 ( $n=212$ ).
5. *The Patient Health Questionnaire – 9* (PHQ-9; Kroenke et al., 2001): The PHQ-9 is a nine-item self-report questionnaire which measures current symptoms of depression. This provides a single score indicative of current depression symptoms with a higher score indicating greater symptoms of depression. Cronbach's alpha was 0.90 ( $n=216$ ).
6. *Generalised Anxiety Disorder Screener* (GAD-7; Spitzer et al., 2006): The

GAD-7 is a seven-item self-report questionnaire measuring symptoms of anxiety present in the last two weeks. The GAD-7 provides a single score indicating the presence of anxiety symptoms with a higher score indicating greater symptoms of anxiety. Cronbach's alpha was 0.91 ( $n=219$ ).

7. *Non-Violent and Violent Offending Behaviour Scale* (NVOBS; Thornton et al., 2013): The NVOBS is a 33-item self-report questionnaire of violent and non-violent offending occurring in the past year. It has five factors: general violence (e.g., bit someone), interpersonal violence (e.g., kicked a partner), drug-related behaviour (e.g., used ecstasy), criminal damage (e.g., damaged something in a public place), and theft (e.g., entered a building to steal/damage). The NVOBS has demonstrated acceptable reliability and moderate to good internal consistency (Blinkhorn et al., 2019; Thornton et al., 2013). Items are scored on a 7-point scale (0=never happened, 6=more than 20 times). To widen the scope of offending history, a question stating, "have you ever [offending behaviour item]" was included before each item, with a response of 'yes' or 'no'. Participants were directed to the original item measuring offending in the past year only if they selected 'yes'. This follows the procedure of Blinkhorn et al. (2019) which found the adapted scale to have acceptable reliability. Additionally, items related to the experience of interpersonal violence against themselves were omitted as the study focus is participants' own offending behaviour. Thus, two sets of scores were obtained by totalling the responses: offending in the past year and lifetime offending. For lifetime offending, Cronbach's alpha was 0.88 ( $n=176$ ) and for past year offending, Cronbach's alpha was 0.74 ( $n=174$ ).

### Statistical Analysis

Data was analysed using SPSS version 24. The data was cleaned, recoded, and scored. Gender was coded as 0=female, 1=male, and 2=other. All missing data was coded as 999.

Partial correlation analysis was conducted between EDA-QA, RAADS-14, CAT-Q, PHQ-9, GAD-7, and NVOBS Lifetime and Past Year Scores to remove any age and gender effects. As stated in Chapter Four (p. 103), although age and gender may influence each of these variables, this is not related to the current research question.

Multiple regression was performed to determine the relative contribution of camouflaging, PDA and autism traits, depression, and anxiety to lifetime offending scores. Examination of the assumptions identified acceptable independence of errors assessed using the Durbin Watson test (Durbin & Watson, 1951), linear relationships between the dependent variable and independent variables ( $p < 0.05$ ), and no outliers or influential cases based on Cook's distance. Multicollinearity was assessed using Field's (2018) recommendations for correlation coefficients, VIF values, and tolerance statistics. The assumption of no multicollinearity was met. However, there was evidence of deviations from the normal distribution in the standardized residuals,  $D(220) = 0.11$ ,  $p = 0.000$ . Based on recommendations by Knief and Forstmeier (2018), the variables were not transformed as regression is generally robust to violations of this assumption. There was also evidence of heteroscedasticity. The regression analysis was therefore computed using the heteroscedastic-consistent standard errors approach which recognises the presence of non-constant variance, as recommended by Astivia and Zumbo (2019).

Examination of the data to be used in the multiple regression for past year

offending behaviour scores identified several violated assumptions. There was a non-linear relationship between NVOBS Past Year scores and RAADS-14 and CAT-Q scores. There was also evidence of heteroscedasticity and large deviations from the normal distributions in the standardized residuals. Given the violations of the assumptions and lack of correlations between NVOBS Past Year scores and the predictor variables (see Table 10), regression analysis was not conducted for past year offending behaviour.

## **Results**

### Descriptive Statistics

Two-hundred-and-twenty-five participants completed the online survey. Data from four participants were removed due to incomplete response data. One additional dataset was removed as the participant did not meet the inclusion criteria (age>18), resulting in a final sample size of 220. For detailed information on the sample characteristics, please refer to Chapter Four, p. 105-106, Table 6, and Figure 6. Mean scores for the EDA-QA, RAADS-14, CAT-Q, PHQ-9, and GAD-7 can be found in Table 7 (Chapter Four, p. 107). In summary, 43.6% of participants scored above the cut-off of 14 on the RAADS-14. Cut-off scores for the EDA-QA are not yet provided but a score of 45 and above on the adolescent version of the EDA-QA is used to identify those at high risk of showing features of PDA based on parent-report (O’Nions, Christie, et al., 2014). In this sample, 44.1% scored above 45 on the EDA-QA. Participants scored on average in the mild range for symptoms of anxiety and depression on the GAD-7 and PHQ-9.

On average, participants engaged in 3.7 offending behaviours in their lifetime ( $SD=4.54$ ) and 2.64 in the past year ( $SD=4.91$ ). On the NVOBS, 71.8% of participants engaged in at least one offending behaviour in their lifetime.

Within this, 50.9% reported engaging in at least one instance of general violence. Frequency of general violence in participants' lifetime ranged from once to ten times. Frequency of drug use ranged from one to five times with 32.3% reporting drug use in their lifetimes. Frequency of lifetime interpersonal violence ranged from one to six times, with 55.9% reporting at least one instance of interpersonal violence. Fifteen percent of participants reported engaging in criminal damage at least once in their lifetime, with frequency of criminal damage ranging from one to four times. Finally, 20.5% of participants reported engaging in theft at least once in their lifetime, the frequency of which ranged from one to four times.

Additionally, on the NVOBS, 46.8% engaging in at least one offending behaviour in the past year. The frequency of general violence in the past year ranged from one to 18 times, with 20.5% reporting engaging in general violence at least once in the past year. For drug use, 9.1% of participants reported at least once instance in the past year, with frequency of use ranging from one to eleven times. The frequency of interpersonal violence in the past year ranged from one to fourteen times with 30.9% of participants reporting perpetrating interpersonal violence at least once in the past year. The frequency of criminal damage in the past year ranged from one to four times, with 2.7% of participants reporting engaging in criminal damage at least once in the past year. Finally, 5.9% of participants reported engaging in theft in the past year, with frequency ranging from one to 16 times.

### Correlational Analysis

Partial correlations were used to examine the relationships between camouflaging, offending, PDA traits, and autism traits. The results are presented

in Table 10. Correlations between CAT-Q scores, RAADS-14 scores, and EDA-QA can be found in Chapter Four (Table 8, p. 108).

**Table 10**

*Partial Correlations Between NVOBS Lifetime and Past Year Scores and Independent Variables*

<b>Variable</b>	<b>EDA-QA Total Score</b>	<b>RAADS- 14 Total Score</b>	<b>CAT-Q Total Score</b>	<b>PHQ-9 Total Score</b>	<b>GAD-7 Total Score</b>	<b>NVOBS Past Year Total Score</b>
<b>NVOBS Lifetime Total Score</b>	0.41**	0.11	0.29**	0.18*	0.15*	0.52**
<b>NVOBS Past Year Total Score</b>	0.29**	0.03	0.08	0.20*	0.14*	-

\* $p < 0.05$ ; \*\* $p < 0.001$ ; PHQ-9=Patient Health Questionnaire 9; GAD-7=Generalised Anxiety Disorder Screener 7; RAADS-14=14-Item Ritvo Autism Asperger Diagnostic Scale Revised; EDA-QA=Extreme Demand Avoidance Questionnaire Adult; CAT-Q=Camouflaging Autistic Traits Questionnaire; NVOBS=Non-Violent and Violent Offending Behaviour Scale.

There was a weak positive correlation between CAT-Q scores and NVOBS Lifetime scores whilst controlling for age and gender, which was statistically significant. Zero-order correlations showed a weak positive, statistically significant correlation between CAT-Q scores and NVOBS Lifetime scores ( $r = 0.30$ ,  $p < 0.001$ ), indicating that age and gender has little influence over the relationship between camouflaging and lifetime offending behaviour. The

correlation between camouflaging and past year offending behaviour was non-significant when age and gender were and were not controlled for (zero-order correlations  $r=0.11$ ,  $p>0.05$ ). This indicates that as scores for camouflaging increased, scores for lifetime offending behaviour increased, but scores offending behaviour in the past year did not.

The correlation between RAADS-14 total scores and NVOBS Lifetime scores was non-significant when age and gender were controlled. However, zero-order correlations found a weak positive correlation between NVOBS Lifetime scores and RAADS-14 scores which was statistically significant ( $r=0.14$ ,  $p<0.05$ ), suggesting that age and gender have a large influence over the relationship with autism traits and lifetime offending behaviour. NVOBS Past Year scores were not significantly correlated with RAADS-14 scores both when age and gender were and were not accounted for (zero-order correlation  $r=0.06$ ,  $p=0.40$ ).

There was a moderate, positive, correlation between EDA-QA scores and NVOBS Lifetime scores whilst controlling for age and gender, which was statistically significant. Based on the zero-order correlations, age and gender appeared to have little influence over the relationship between PDA traits and lifetime offending behaviour ( $r=0.42$ ,  $p<0.001$ ). Similarly, EDA-QA scores were weakly, positively correlated with NVOBS Past Year scores whilst controlling for age and gender, which was statistically significant. Zero-order correlations found a moderate, positive correlation between NVOBS Past Year Scores and EDA-QA scores which was statistically significant ( $r=0.30$ ,  $p<0.001$ ), suggesting that age and gender had little influence over the relationship with PDA traits and past year offending behaviour. Thus, as scores for PDA traits increased, scores for lifetime and past year offending behaviour increased.



### Multiple Linear Regression

A multiple regression was conducted to predict NVOBS Lifetime scores from CAT-Q, RAADS-14, EDA-QA, PHQ-9, and GAD-7 scores. CAT-Q, RAADS-14, EDA-QA, PHQ-9, and GAD-7 scores significantly predicted NVOBS Lifetime scores  $F(5, 214)=11.71, p=0.000, R^2=0.22$ . EDA-QA ( $p=0.000$ ), RAADS-14 ( $p=0.008$ ), and CAT-Q ( $p=0.048$ ) scores were significant predictors within the model. Regression coefficients and standard errors can be found in Table 11.

**Table 11**  
*Multiple Regression Analysis Predicting NVOBS Lifetime Scores*

JVQ Scores	<i>B</i>	95% CI for <i>B</i>		<i>SE B</i>	<b>B</b>	<i>R</i> <sup>2</sup>	$\Delta R^2$
		LL	UL				
Model						0.22	0.20
Constant	-4.66						
EDA-QA	0.16**	0.09	0.23	0.03	0.48		
RAADS-14	-0.08**	-0.13	-0.03	0.02	-0.22		
CAT-Q	0.03*	0.00	0.05	0.01	0.17		
PHQ-9	0.03	-0.08	0.14	0.06	0.05		
GAD-7	-0.09	-0.22	0.05	0.07	-0.11		

*Parameter estimates with robust standard errors. Model="Enter" method in SPSS Statistics; B=unstandardised regression coefficient; CI=confidence interval; LL=lower limit, UL=upper limit; SE B=standard error of the coefficient; β=standardised coefficient; R<sup>2</sup>=coefficient of determination; ΔR<sup>2</sup>=adjusted R<sup>2</sup>; PHQ-9=Patient Health Questionnaire 9; GAD-7=Generalised Anxiety Disorder Screener 7; RAADS-14=14-Item Ritvo Autism Asperger Diagnostic Scale Revised; EDA-QA=Extreme Demand Avoidance Questionnaire Adult; CAT-Q=Camouflaging Autistic Traits Questionnaire; NVOBS=Non-Violent and Violent Offending Behaviour Scale. \* $p<0.05$ , \*\* $p<0.01$ .*

## **Discussion**

This study aimed to examine the relationship between social camouflaging and offending behaviour alongside PDA and autism traits. To the author's knowledge, this is the first study to explore camouflaging and offending in these populations. It was theorized that camouflaging may influence the risk of offending behaviour. Camouflaging may lead to a missed or late diagnosis of autism (Gould & Ashton-Smith, 2011). Heeramun et al. (2017) found later diagnosis of autism was correlated with a greater prevalence of criminal behaviour. In this study, total score for camouflaging behaviour was positively correlated with lifetime offending behaviour. Thus, as self-reported camouflaging increased, so did the frequency of self-reported offending behaviour. Consequently, camouflaging could be a risk factor offending behaviour. As Chapter Four outlined positive correlations between autism and PDA traits and social camouflaging (see Table 8, p. 108), camouflaging may be an important factor to consider when exploring offending behaviour in these populations.

However, camouflaging was not significantly correlated to offending behaviour of any kind in the past year. One potential explanation for the lack of association between camouflaging and past year offending, despite the correlations with lifetime offending, is that camouflaging may be initiated after initial offending behaviour has occurred to protect against future offending. For example, an individual may engage in criminal activity, such as violent behaviour due to social or communicative misinterpretation (Björkly, 2009). If the individual is reprimanded, they may seek methods of avoiding these consequences in the future which could include concealing difficulties in social situations and adhering to contextual expectations to reduce the risk of interpersonal difficulties and subsequent aggressive behaviour. Experiences of

camouflaging may affect an individual's application of such behaviour in the future and their ability to be successful in their attempts at camouflaging, which could influence the relationship between camouflaging and offending behaviour over an individual's lifetime. This study cannot provide any evidence to support this hypothesis, though this highlights the need for clarification of the temporal order of offending and camouflaging behaviour to better understand the relationship between the two. Longitudinal qualitative research and formulation methods such as Multiple Sequential Functional Analysis (see for example, Hart et al., 2011) may be useful in clarifying this relationship and the learning that occurs when camouflaging is used.

Considering the motivations for camouflaging are to blend in with others and increase social connections (Hull et al., 2017), it may also be useful to examine the social aspects of offending behaviour when investigating the association with camouflaging. Difficulties understanding the mental state of others has been suggested as an influential factor in violent offending in autistic individuals (Lerner et al., 2012). Thus, violent behaviour may be more likely to occur in social situations for autistic individuals. These are also the situations wherein an individual would be theoretically more likely to use camouflaging behaviours. It would therefore be useful to examine the association between camouflaging and specific types of offending behaviour and offending behaviour in different contexts.

It has previously been suggested that the traits associated with autism may increase the risk of offending behaviour (e.g., Howlin, 2004). In this study, autistic traits were not significantly correlated with offending behaviour, lifetime, or past year, when age and gender were controlled. When age and gender were not controlled, there was a positive correlation between autistic traits and

lifetime offending behaviour. Additionally, when age and gender were not controlled, scores for autism traits significantly negatively predicted lifetime offending behaviour. This demonstrates that the interaction between autism and other factors such as age and gender is influential in the occurrence of offending behaviour.

Another important factor is the presence of comorbid conditions which can increase the risk of offending behaviour in autistic individuals (Gunasekaran & Chaplin, 2012). On average, participants in this study reported mild levels symptoms of depression and anxiety. Greater symptoms of anxiety and depression were weakly associated with greater offending behaviour in participants' lifetime and in the past year. The causes of the association between comorbid conditions and offending behaviour which is not yet clearly understood (Newman & Ghaziuddin, 2008). Additional symptomatology could increase risk-taking behaviour, such as the emotional dysregulation and impulsivity associated with commonly comorbid ADHD (Copeland et al., 2007; Lundström et al., 2014), or may increase the burden and impact on functioning. Nevertheless, when an autistic or PDA individual enter the Criminal Justice System, it may be useful to consider additional psychiatric conditions to identify factors which may contribute to the offending behaviour (Newman & Ghaziuddin, 2008) to inform appropriate means of support and intervention.

This study also explored the relationship between PDA traits and offending behaviour. Although Egan et al. (2019) found PDA traits predicted delinquent acts, in a later study, Egan et al. (2020) found PDA traits did not predict delinquency relative to antagonistic personality traits and ADHD. Nevertheless, PDA individuals may be at an increased risk of offending due to increased impulsivity, anti-social traits, and the presence of physical and verbal aggression

during demand avoidance behaviour (Christie et al., 2012; Egan et al., 2019; Gillberg et al., 2015). The results of this study are in line with those of Egan et al. (2019); PDA traits significantly predicted lifetime offending behaviour. PDA traits were also moderately correlated with lifetime offending behaviour and weakly positively correlated with past year offending. Thus, PDA traits appear to be associated with an increased risk of offending behaviour.

Although PDA and autism have been associated with one another, as PDA traits and offending behaviour were significantly correlated, but autism traits were not significantly correlated with offending behaviour, there may be traits specific to PDA which increase the risk of offending behaviour which requires further investigation. However, much of the variance in offending behaviour scores remained unexplained by the model. Factors akin to the PDA traits, such as increased impulsivity or tendencies to ADHD (Egan et al., 2020) may be important in the relationship between PDA and offending behaviour.

### Strengths and Limitations

This study has several strengths. The large sample size was sufficiently powerful for the analysis. However, there is limited generalisability of the results due to the predominantly female sample and the lack of information collected regarding IQ, ethnicity, and socio-economic status. This prevents a reliable estimation of the representativeness of the sample and subsequently the generalisation of the results. These variables may also be moderating factors in the relationship between camouflaging and mental health difficulties (Hull et al., 2021) and the association with offending behaviour. This may have influenced the small amount of variance explained by the multiple regression model.

Additionally, the psychometric tools used were found to be reliable,

increasing the reliability of the results. However, the CAT-Q cannot determine how effortful an individual finds camouflaging: some individuals report finding camouflaging highly effortful while others report not being aware they were camouflaging until this was pointed out (Hull et al., 2017). The effort or burden of camouflaging is likely influential in the consequent costs of camouflaging, including offending behaviour. Additionally, the CAT-Q may not be useful for individuals with language difficulties as it requires individuals to reflect on and communicate their own behaviours and motivations (Hull et al., 2017).

Furthermore, the measure of offending behaviour used does not capture all possible offending behaviour. For example, sexual offending is not measured by the NVOBS. Autistic individuals may have vulnerabilities that increase the risk of sexual offending, such as impaired ToM, repetitive and stereotyped behaviours, and obsessional interests (Allely & Creaby-Attwood, 2016). Given the interpersonal nature of sexual offending, it would be useful to consider the potential for camouflaging within this type of offending.

Further, the measure of offending behaviour may have elicited socially desirable responding. Although the study was anonymous, thus no data could be traced to a participant, participants may have been concerned about repercussions of disclosing offending behaviour. Nevertheless, research has demonstrated that internet-mediated research elicits significantly more reports of socially undesirable and sensitive behaviours than comparable pen-and-paper studies (Gnambs & Kaspar, 2015). Therefore, the online nature of the research and increased distance between the researcher and the participants may have increased participants' willingness to disclose offending behaviour. However, the online nature of the study may have excluded autistic individuals who are less active online (see Cook et al., 2021). Additionally, as discussed in Chapter Four,

the presence of alexithymia may have impacted on the reliability of the results, particularly on the measures of depression and anxiety. Future research should consider the use of measures of alexithymia to assess the potential impact of alexithymia on reliability.

Moreover, the assumption of normally distributed residuals in the multiple linear regression was violated. Therefore, the results may have limited generalisability outside of this sample. The cross-sectional nature of the study prevents any assumptions of causality. For example, it is not known whether camouflaging was utilized before, during, or after criminal behaviour. Furthermore, the severity of the offending behaviour cannot be determined. Participants were not asked to report whether their behaviour had resulted in formal adjudication. This study is also likely limited to individuals without learning disabilities based on the required level of understanding to complete the questionnaires. There may be a difference in the risk factors for offending, the prevalence of offending, and the type of offending behaviour between autistic individuals with and without learning disabilities which could not be identified in the present study.

### Implications and Future Directions

Autistic individuals may be more likely to make false confessions or be susceptible to manipulation due to social vulnerabilities (North et al., 2008). Social anxiety and difficulties in social communication may be misinterpreted by professionals as aggressive or threatening (Archer & Hurley, 2013). Additionally, application of the Cognitive Interview widely used police interviews (see Milne & Bull, 1999) requires complex strategies for memory recall which may be problematic for autistic individuals due to differences in their memory encoding

and retrieval strategies (Richards & Milne, 2018). Adapted methods such as providing visual and verbal cues can be helpful for autistic individuals (Norris et al., 2020). Thus, for autistic and PDA individuals, adaptation of the interview process is required. In prison, autistic individuals are at risk of bullying, exploitation, and social isolation (The National Autistic Society, 2005). Adherence to social rules and routines can make adjustment to life in prison difficult. Given the similarities between autism and PDA, these experiences would extend to PDA individuals, though the experiences of PDA individuals in the Criminal Justice System have yet to be explored. In the UK, legislations have been enacted which may improve the experiences of autistic individuals in the Criminal Justice System. For example, the Think Autism Strategy (HM Government, 2014) and the Autism Act (2009) aim to increase awareness and understanding of autism across all public services.

However, camouflaging behaviours may complicate the efficiency of these policies. If concealed, autism and PDA may not be identified by professionals, preventing access to specialist support and provisions, such as Appropriate Adults or Registered Intermediaries who support an individual considered vulnerable through the interview and investigation process (Cooper & Wurtzel, 2013; Cummins, 2007). Further, the restrictive and compliance-focused approach within the Criminal Justice System would increase anxiety for autistic and PDA individuals and thus potentially increase the risk of violent behaviour. Effective support could lead to greater treatment compliance and reduced likelihood of recidivism (Trundle et al., 2017). Thus, an awareness of the possibility of camouflaging behaviours may be beneficial to professionals supporting autistic and PDA individuals in the Criminal Justice System. Moreover, a wider acceptance of autism and PDA in the general population would reduce



the need for camouflaging, potentially reducing forensic outcomes.

Future research should utilize a triangulation of qualitative and quantitative methods to explore the relationship between camouflaging behaviour and offending behaviour. This should include exploration of different types of offending behaviour. Research exploring PDA and offending behaviour is limited, though the small amount of research available highlights the need for future research into this topic. This could identify risk factors for offending behaviour, the prevalence of offending behaviour, and experiences of the Criminal Justice System in PDA individuals which could lead to the development of resources and interventions for this population.

### Conclusions

This study aimed to explore the relationship between social camouflaging and offending behaviour in autistic and PDA individuals and provided preliminary insights into this relationship. It extends the previous research into autism and offending behaviour, finding that greater autism traits predicted lower lifetime offending behaviour, which was influenced by age and gender, and adds to the minimal research exploring PDA in adulthood. As in the previous chapters, this study demonstrates the need for increased autism and PDA awareness and acceptance to reduce victimisation, offending behaviour, and the need for camouflaging behaviour.

## **Chapter Six**

### **Additional Analysis**

#### **Considering the Relationship Between Victimisation and Offending in Relation to Camouflaging, Mental Health Difficulties, and Autism and PDA Traits**

### **Abstract**

Chapters Four and Five identified significant associations between autism and PDA traits, camouflaging, offending, and victimisation. Mental health difficulties also appears to be an influential factor in these relationships. It is possible that there is a relationship between victimisation and offending that is not captured in the previous chapters. This additional chapter therefore aims to explore the relationship between victimisation and offending and identify potential indirect effects between the measured variables. Structural equation modelling using data presented in Chapters Four and Five produced a theoretical model which demonstrated good fit to the data. A latent variable for mental health difficulties was created using the scores for symptoms of depression and anxiety. The model showed a direct predictive pathways between PDA traits and offending; autism traits and offending; and camouflaging behaviour and offending. The effects of mental health difficulties on offending behaviour was indirect through PDA and autism traits. Victimisation was predicted by greater mental health difficulties. Victimisation and offending were positively associated with one another. The theoretical model provides preliminary evidence of direct and indirect relationships between camouflaging and offending for autistic and PDA individuals. Considerations for expansion and validation of the model are discussed.

## **Introduction**

Evaluation of the findings presented in this thesis highlight possible indirect pathways between offending, victimisation, camouflaging, autism and PDA traits, and symptoms of depression and anxiety. Firstly, levels of depression were a significant predictor of victimisation. Both scores for anxiety and depression were positively correlated with offending behaviour and victimisation. Greater symptoms of depression and anxiety were associated with greater levels of PDA and autism traits. Camouflaging was also positively associated with levels of anxiety and depression symptoms. It is therefore possible that camouflaging is associated with offending and victimisation in autistic and PDA individuals through the association with symptoms of depression and anxiety.

It may also be useful to consider a potential relationship between offending behaviour and victimisation. Empirical research has made links between victims and offenders (see Zaykowski, 2015). While a causal relationship has not been established, research conducted in non-autistic samples has found a link between victimisation and specific types of offending behaviour (see Moriarty & Parsons-Pollard, 2008). For instance, in a 45-year longitudinal study, Ogloff and colleagues (2012) found that individuals who had experienced childhood sexual abuse were almost five times more likely than individuals who had not experienced childhood sexual abuse to have been charged with any criminal offence in adulthood. Experiences of abuse and neglect impact on a child's physical and psychological development (Afari et al., 2013; López-Martínez et al., 2018) resulting in difficulties with emotion regulation, social skills, and adjustment (Sroufe et al., 2009) which could influence the risk of offending behaviour. In non-autistic samples, childhood abuse and neglect significantly predict aggression resulting in arrest in adulthood

(Maxfield & Widom, 1996; Qualkenbush, 2020) and in autistic individuals, childhood abuse and neglect have been shown to predict criminal behaviour (Kawakami et al., 2012). Further, social rejection and peer victimisation are suggested to contribute to offending behaviour in autistic individuals (Del Pozzo et al., 2018) with these factors found to be common in sample of autistic offenders (Allen et al., 2008). Additionally, Woodbury-Smith et al. (2006) found autistic individuals reportedly engaged in criminal damage in response to perceived victimisation. It is therefore possible that victimisation of autistic and PDA individuals could precipitate offending behaviour.

Additional analysis therefore enables an exploration of the relationship between victimisation and offending in relation to autism and PDA traits alongside camouflaging behaviour and mental health difficulties to identify potential indirect pathways. It was hypothesised that there would be an indirect relationship between camouflaging and victimisation, and camouflaging and offending behaviour through mental health difficulties, PDA, and autism traits.

## **Method**

### Data Analysis

Structural equation modelling (SEM) combines factor analysis and multiple regression analysis to describe the structural relations between measured and latent variables (Byrne, 2016). The hypothesised SEM was developed on SPSS Amos Version 25 using data presented in Chapters Four and Five. The SEM was performed on data from 220 participants from the general population using the measures of autism traits, PDA traits, camouflaging behaviour, symptoms of depression and anxiety, victimisation, and offending behaviour. A latent 'Mental

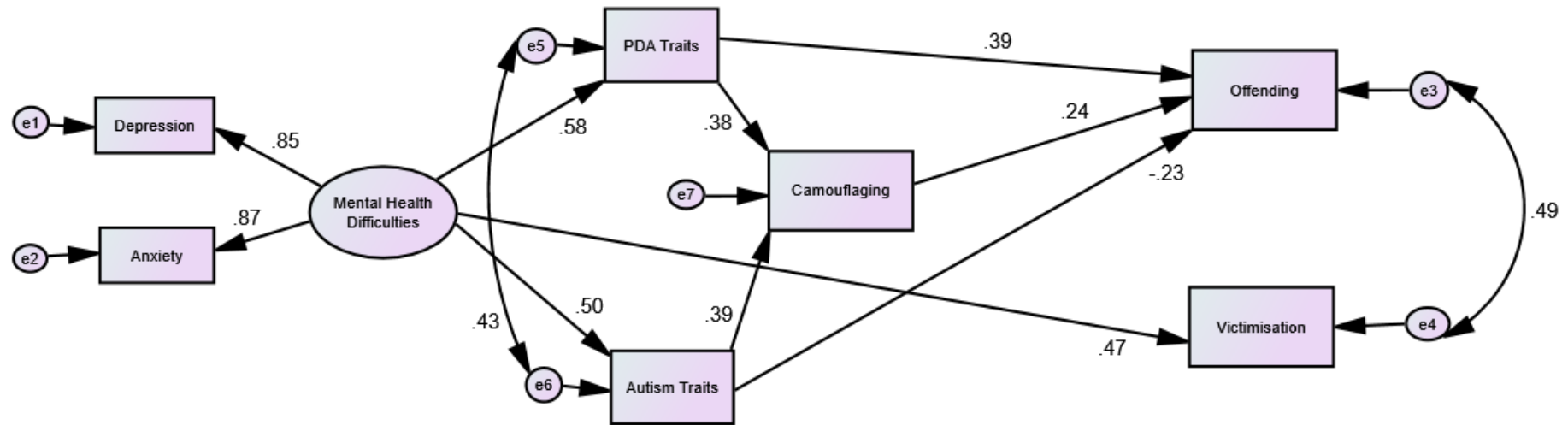
Health Difficulties' variable was created from the scores on the measures of depression (PHQ-9) and anxiety (GAD-7) to model covariance between these.

The data demonstrated non-normal multivariate distribution, violating the assumptions of maximum likelihood estimation methods. Bootstrapping was employed to account for this (Sharma & Kim, 2013) which is a non-parametric sampling procedure that involves repeatedly sampling from the full data set to produce a sampling distribution for each of the obtained results (Hayes, 2009). The analysis used 5000 bootstrap draws to produce bias corrected 95% confidence intervals around each estimate, as recommended by Hayes (2009).

The theoretical model was initially constructed using the outcomes of the regression and correlational analysis presented in Chapters Four and Five. Examination of the model fit directed changes to the model, specifically in the identification of indirect effects. The final model, depicted in Figure 7, appears to be a good fit to the data (CFI=0.992; RMSEA=0.050, Bollen-Stine bootstrap  $p=0.17$ ). Circles represent latent variables and rectangles represent measured variables.

**Figure 7**

*Structural Equation Model Fitting Autism and PDA Traits, Camouflaging, and Mental Health Difficulties to Offending and Victimisation*



*Model calculated with AMOS. A latent 'Mental Health Difficulties' variable was created from the GAD-7 and PHQ-9 to model covariance between these and is indicated by the circular shape. Measured variables are shown in rectangles. Circles with an e and a number are error variances. Double-headed arrows indicate covariance between error variances. Solid arrow pathways are significant standardised regression coefficients ( $\beta$ ). All are  $p < 0.01$ .*

## Results

Autism traits were predicted by greater mental health difficulties ( $\beta=0.50$ ,  $CI=0.37-0.61$ ), as were PDA traits ( $\beta=0.58$ ,  $CI=0.45-0.69$ ). Measured camouflaging was predicted by greater PDA ( $\beta=0.38$ ,  $CI=0.22-0.51$ ) and autism traits ( $\beta=0.40$ ,  $CI=0.25-0.54$ ) with similar sized regression values. The model showed a direct positive predictive pathway between PDA traits and offending ( $\beta=0.39$ ,  $CI=0.23-0.57$ ). The model also found a direct negative predictive pathway between autism traits and offending ( $\beta=-0.23$ ,  $CI=-0.34- -0.12$ ). The effects of mental health difficulties on offending behaviour was indirect through PDA and autism traits ( $p<0.001$ ). Camouflaging also predicted offending ( $\beta=0.24$ ,  $CI=0.07-0.38$ ). Camouflaging was indirectly predicted by mental health difficulties through autism ( $\beta=0.40$ ,  $CI=0.25-0.54$ ) and PDA traits ( $\beta=0.38$ ,  $CI=0.22-0.51$ ). Victimization was predicted by greater mental health difficulties ( $\beta=0.47$ ,  $CI=0.36-0.58$ ). There were no other significant direct effects on victimisation. Victimization and offending were positively associated with one another.

## Discussion

This chapter aimed to collate findings presented in Chapters Four and Five through SEM to identify potential indirect pathways to offending and victimisation through PDA and autism traits, camouflaging behaviour, and symptoms of depression and anxiety. As expected from the data analyses presented in Chapter Five, the model showed a direct predictive pathway between PDA and offending indicating that increased PDA traits can predict greater offending behaviour. Camouflaging behaviour also directly predicted



greater offending behaviour and lower offending behaviour was predicted by autism traits.

In line with the hypotheses, there were also indirect pathways from mental health difficulties to offending behaviour through autism and PDA traits. Thus, greater mental health difficulties, specifically greater symptoms of depression and anxiety, predicted greater autism and PDA traits, and which in turn significantly predicted offending behaviour. A recent study by Payne et al. (2021) found that autistic offenders had greater mental health risk factors, such as the presence of a mental health diagnosis and past and current use of psychiatric medication, which differentiated them from non-autistic. However, the results of this study suggests that lower autism traits predicts offending behaviour which contrasts with the findings of Payne and colleagues (2021).

It may be useful to consider the effect of camouflaging on the relationship between autism traits and offending behaviour as there is a significant pathway from autism traits to offending behaviour through camouflaging. Thus, individuals with high levels of autistic traits may engage in greater levels of camouflaging, and be subsequently at risk of offending. This is likely also affected by mental health difficulties. Therefore, camouflaging and mental health difficulties are important factors to consider when examining the risk of offending behaviour in autistic and PDA individuals.

Victimisation was predicted by greater mental health difficulties. However, in contrast to the hypotheses, there were no significant indirect predictive pathways to victimisation. This indicates that although camouflaging is positively correlated with victimisation (see Chapter Four, Table 8, p. 107), in the current model camouflaging does not appear predictive of victimisation, directly or indirectly. Interestingly, there was no significant predictive relationship between

PDA traits and victimisation, which contradicts the findings presented in Chapter Four (see Table 9, p. 109). This suggests the latent variable of mental health difficulties may have impacted on the effects of PDA traits on victimisation which was not accounted for in the multiple regression analysis. Thus, further investigation of the association between PDA and victimisation and the role of mental health in this relationship is needed.

As expected based on previous research (see Zaykowski, 2015), victimisation and offending were positively associated with one another. However, the model did not identify any significant direct or indirect pathways between offending and victimisation. Thus, this model does not provide support for a victim-offender relationship in this sample.

Overall, the model provides preliminary evidence of direct and indirect relationships between camouflaging and offending for autistic and PDA individuals, however it requires replication and expansion. Several considerations are required to refine an understanding of the potential relationship between camouflaging, victimisation, and offending behaviour. For instance, considering the motivations for camouflaging are to blend in with others and increase social connections (Hull et al., 2017), it may be useful to examine the social aspects of offending when investigating the association with camouflaging. Additionally, as the data used in this analysis is from the first studies to empirically explore camouflaging in PDA individuals, a greater understanding of the motivations for or types of camouflaging in PDA would be useful for developing this model, especially as PDA traits indirectly predicted offending through camouflaging behaviour.

To further refine the model, exploring a wider range of comorbid conditions would be beneficial. Although symptoms of depression and anxiety

appear directly related to victimisation and indirectly related to offending behaviour, other comorbid conditions are likely also influential. For instance, the emotional dysregulation and impulsivity associated with ADHD (Copeland et al., 2007; Lundström et al., 2014), a common comorbid condition with autism (Kogan et al., 2009) and present in PDA individuals (Egan et al., 2020), could increase the risk of offending behaviour.

### Conclusions

This analysis summarizes the first attempt to examine the relationship between social camouflaging behaviour, victimisation, and offending behaviour in relation to autism and PDA traits. Overall, the results highlight the need for support and interventions for autistic and PDA individuals as PDA and autism traits are directly associated with increased offending behaviour. Social camouflaging may aim to protect autistic individuals from harm, but this analysis suggests camouflaging may do more harm than good.

## **Chapter Seven**

### **Discussion**

### **Thesis Aims**

This thesis aimed to explore the occurrence of victimisation and offending in autistic and PDA individuals and investigate the implications of camouflaging behaviour. A greater understanding of potential risk or protective factors could reduce the incidence of offending and victimisation in these populations and subsequently increase their quality of life and well-being. Meta-analysis, original empirical research, structural equation modelling, and a psychometric critique were used to construct the following discussion. Collective results of these pieces of work add to existing knowledge and understanding of victimisation and offending in autistic individuals and provide new evidence about victimisation and offending in PDA adults. Furthermore, this thesis is original in it provides the first exploration of the forensic implications of social camouflaging. A summary of each chapter will precede a discussion of how this thesis contributes to this field of understanding.

### **Summary of Findings**

Chapter Two presented a systematic review and meta-analysis of the prevalence of victimisation in autistic individuals using 34 high-quality studies from across the world finding that 44% of autistic participants had experienced victimisation at some point in their lifetime. A large amount of heterogeneity in the prevalence rates justified subgroup analysis to determine potential moderating factors. The highest prevalence rate in the subgroup analysis of victimisation type was for studies measuring 'any' victimisation (84%), illustrating the importance of examining various forms of victimisation concurrently. Subgroup analysis also found higher rates of victimisation in community samples compared to clinical samples and higher rates of victimisation reported by parents than

individuals themselves. High heterogeneity remained in the subgroup analysis meaning results should be interpreted with caution. Using standardised measures of victimisation (e.g., the JVQ; Hamby et al., 2005) and collecting data on a variety of moderating factors (e.g., support available, education setting, presence of learning difficulties, etc.) could make future meta-analyses more reliable and informative.

To consider methodological issues associated with research examining victimisation, Chapter Three presented a critical review of the JVQ (Hamby et al., 2005). A systematic search found 131 papers utilising the JVQ, indicating that it is a widely used measure of victimisation. Examination of this literature highlighted that the JVQ demonstrated satisfactory internal consistency, measured using Cronbach's alpha, test re-test reliability, and inter-rater reliability. Scores on the JVQ were also predictive of future victimisation and traumatic symptoms, suggesting predictive and construct validity. However, more evidence is required to establish the face and content validity of the JVQ, as is a review of the normative data which was generated over a decade ago. Similarly, the JVQ items may require revision to capture new forms of victimisation experiences, particularly those of an online nature. Overall, the JVQ appears to be a robust measure of victimisation, though validation in autistic individuals is required.

Chapter Four investigated victimisation experiences of adults from the general population in relation to autism and PDA traits, symptoms of anxiety and depression, and camouflaging behaviour measured using psychometric measures. It was hypothesised that camouflaging would be associated with victimisation. For instance, camouflaging could protect individuals from victimisation by concealing difficulties associated with autism and PDA and

reducing perceived threat. On average, participants reported suffering five victimisation experiences in their adulthood. Multiple regression analysis found that camouflaging did not predict victimisation, though greater camouflaging was correlated with more overall victimisation, suggesting a relationship between the two. In the regression model, victimisation was predicted by PDA traits and symptoms of depression. The results corroborated previous research (see for example Sreckovic et al., 2014), finding that autism traits were associated with greater victimisation. Further, Chapter Four provided the first empirical evidence of an association between PDA and camouflaging, with greater PDA traits associated with greater camouflaging behaviour. The implications of these findings were discussed, focussing on prevention of victimisation.

Using the same sample, Chapter Five examined the association between camouflaging and offending behaviour in relation to autism and PDA traits and symptoms of depression and anxiety. It was hypothesised that camouflaging would be associated with offending behaviour. On average, participants reported engaging in three offending behaviours in their lifetime and two in the past year. Multiple regression found that camouflaging significantly predicted lifetime offending behaviour. As camouflaging scores increased, as did scores for lifetime offending behaviour. Thus, camouflaging may act as risk factor for offending behaviour, though it cannot be determined whether camouflaging occurred prior to the offending, or vice versa. Autism and PDA traits both significantly predicted lifetime offending behaviour. Symptoms of depression and anxiety did not significantly predict offending behaviour. The results add to the existing evidence base seeking to understand more about the risk of offending behaviour in autism and contributes to the limited empirical evidence surrounding PDA in adulthood.

The importance of an awareness of camouflaging behaviour was discussed, highlighting the potential implications of camouflaging within the Criminal Justice System.

Finally, Chapter Six presented a SEM utilising data from Chapters Four and Five to investigate potential indirect predictive effects of autism and PDA traits, camouflaging, and mental health difficulties (which comprised of symptoms of depression and anxiety) on victimisation and offending. The SEM also considered a potential relationship between victimisation and offending. Several direct effects were observed in line with the findings presented in Chapters Four and Five. The effects of mental health difficulties on offending behaviour were found to be indirect through PDA and autism traits. Camouflaging was indirectly predicted by mental health difficulties through autism and PDA traits. Victimisation was predicted by greater mental health difficulties. Victimisation and offending were positively associated with one another, though no significant direct predictive relationship was found between the two. The model demonstrated that camouflaging and mental health difficulties are important factors to consider when examining the risk of offending and victimisation in autistic and PDA individuals.

### **Theoretical Implications**

The findings in this thesis have demonstrated that camouflaging may be useful for enhancing our understanding of why some autistic people are victimised, and some are not. Although autistic individuals have reported using camouflaging to avoid threat (Bernardin et al., 2021; Cage & Troxell-Whitman, 2019; Hull et al., 2017), the impact of camouflaging on an individual's mental health could in turn increase the risk of victimisation. For example, Cappadocia et al. (2012) found



internalising mental health problems (e.g., anxiety) predicted bullying victimisation in autistic children which could be due to those with internalising mental health difficulties being perceived as less likely to defend themselves if victimised (Fekkes et al., 2006). Camouflaging may prevent the development or application of protective factors, further influencing an individual's mental health and risk of victimisation. This may be a cyclic process: an individual is victimised and begins to camouflage to protect themselves, leading to greater mental health difficulties such as depression and anxiety, which subsequently increases the risk of further victimisation, directly or indirectly through decreased support provisions. Further investigation into the association between camouflaging and victimisation is required because, as stated in previous chapters, it is not possible to determine the temporal order of experiences. For example, camouflaging may be initiated before or after a victimisation experience. Nevertheless, this thesis illustrates that while camouflaging may be intended as a protective factor, it may inadvertently lead to a greater risk of harm.

Similarly, camouflaging may play an important role in the association between autism and offending behaviour. Results in this thesis showed autism traits alone predicted less offending behaviour which contrasts previous suggestions that characteristics of autism could increase the risk of offending (Howlin, 2004). However, higher scores for autism traits were associated with greater camouflaging, which was associated with more offending behaviour, suggesting a potential mediating factor between autistic traits and offending. A person using camouflaging to obtain friendships (Hull et al., 2017) may be vulnerable to engaging in offending behaviour with peers as means to ascertain this. More research into the use of camouflaging with anti-social peers is required to test this hypothesis. Alternatively, as with victimisation, the impact

of camouflaging on an individual's mental health may influence the risk of offending behaviour. Age and gender also appear to be influential factors in the association between autism and offending.

This thesis also contributes to the ongoing debate regarding the aetiology of PDA; whether PDA is part of the autism spectrum or a separate condition (see Green et al., 2018). Much of the literature surrounding PDA currently focuses on children, thus a greater understanding of PDA in adults is required to further the understanding of the condition. In this thesis, greater PDA traits were associated with more autism traits, suggesting a relationship between PDA and autism traits in adulthood. Further research into the adult presentation of PDA is required to explore the trajectory of the condition and its relation to autism, but this thesis makes a novel contribution. Camouflaging may be an important factor in PDA which has not yet received attention from researchers, though is identified by PDA individuals themselves (see Cat, 2018). It is possible that camouflaging represents a component of the PDA profile. For example, the PDA trait of superficial sociability, described as appearing social but lacking depth or understanding (National Autistic Society, 2020; Newson et al., 2003), could manifest as camouflaging behaviour.

In line with the findings of Egan et al. (2019), PDA traits predicted offending behaviour in this thesis. Although this requires replication, the evidence currently available suggests those with PDA may be at an increased risk of offending behaviour. Offending behaviour in PDA individuals may be precipitated by extreme avoidance of demands (Christie et al., 2012), anti-social traits (Gillberg et al., 2015), or high levels of impulsivity and emotional lability (Egan et al., 2020; Egan et al., 2019). However, much of the variance in offending behaviour scores in the multiple linear regression in Chapter Five

remained unexplained. Thus, factors akin to the PDA traits, such as increased impulsivity or tendencies to ADHD (Egan et al., 2020) may be important in the relationship between PDA and offending behaviour. Nevertheless, the findings that PDA traits are also associated with greater symptoms of depression and anxiety and a greater frequency of victimisation experiences illustrates the need for more research into the adult presentation of PDA. If this population is at an increased risk of aversive and forensic outcomes, a greater understanding of this and the implementation of support for PDA individuals is paramount.

### **Practical Implications**

Although the results of this thesis are tentative pending further investigation, several potential practical implications can be identified. Even though camouflaging appears to be costly, it serves a purpose for autistic and PDA individuals. Thus, ceasing to use camouflaging may be more detrimental to a person's life experiences and wellbeing. Interventions should not focus on preventing camouflaging as this would pathologize social vulnerabilities. Instead, it is the wider society that needs to be more inclusive. For instance, greater understanding and social acceptance of autism and PDA could reduce the need for camouflaging and the risk of victimisation and offending. Education, health, and social services should be set up to fully understand and support autistic and PDA individuals. This may include peer education interventions to improve knowledge about and attitudes towards autistic individuals (see for example Campbell et al., 2019; Staniland & Byrne, 2013). This could reduce stigma and discrimination and increase social support and feelings of safety. Skills training may be useful for helping autistic and PDA individuals to identify when they are being victimised and know how to seek support.

Secondly, targeted prevention programmes are required. Although there is an abundance of bullying prevention interventions described within the literature, there is limited empirical evidence of interventions against child maltreatment and crime victimisation for autistic individuals. This is even more sparse for PDA individuals. Chapter Two demonstrated the need for tailored interventions for victimisation type and context (e.g., clinical vs. community settings). Awareness of the potential risk of offending can assist in the assessment and treatment of autistic and PDA individuals to prevent initial offending (Payne et al., 2021). This could also lead to the reformation of services available, such as the training of staff and safeguarding procedures in residential, education, and health settings to reduce the risk of victimisation and offending.

As noted in previous chapters the presence of camouflaging may complicate access to interventions and support in the Criminal Justice and Social Services. Thus, an awareness of the possibility of camouflaging behaviours may be beneficial to professionals supporting autistic and PDA individuals in these services. This could be achieved through training into the characteristics of autism and PDA, the possibility and impact of camouflaging, and areas of adjustment for autistic and PDA individuals. Gibbs and Haas (2020) found autistic adults did not disclose their autism to police because of fear of negative outcomes due to a lack of understanding. Therefore, evidenced increased awareness and acceptance of autism and PDA in the Criminal Justice System may encourage individuals to disclose their conditions, leading to greater support and appropriate adjustments. It may also be beneficial to consider the camouflaging within risk assessment tools given the association to victimisation, offending, and mental health difficulties, though further evidence is needed first.

## **Research Directions**

Within this thesis, several areas requiring further investigation have been identified. For instance, the systematic review illustrated a sparsity in research examining crime victimisation specifically and victimisation of autistic adults. Future research should consider the possibility of multiple victimisation experiences of different natures. It should also consider potential gender and sexuality differences, the impact of comorbid difficulties, and potential protective factors for victimisation as not all autistic individuals experience victimisation. Additionally, further research into the victimisation experiences of PDA individuals is required. To identify areas of intervention to prevent victimisation, a greater understanding of why autistic and PDA individuals are victimised would be beneficial. Chapter Three illustrated the need for measures of victimisation to be validated in autistic individuals which should be considered in future research.

Type of victimisation and offending behaviour should be considered in more depth to ascertain a better understanding of the association with camouflaging behaviours. For instance, camouflaging may be associated with certain offending behaviours, such as those that occur in social situations (e.g., domestic violence). A better understanding would help to develop tailored interventions. Triangulation of methods should be applied: the combination of qualitative and quantitative measures could provide meaningful information into camouflaging behaviour and its relationship to autism, PDA, victimisation, offending behaviour, and mental health difficulties. Research exploring the experiences of autistic and PDA individuals when they enter the Criminal Justice System as victims, including the presence of camouflaging behaviours, could identify areas of improvement.

Examining the onset and frequency of camouflaging behaviour could further the understanding of camouflaging in autism and PDA. Qualitative research into the experiences of adults with PDA would be useful for understanding how camouflaging manifests in these individuals and how this may differ from autistic individuals. This may be useful for understanding the relationship between PDA and autism. Researchers should be aware of the potential for camouflaging during qualitative research which could influence the results.

At all stages of research conducted in the future, experts by experience should be involved. This would lead to the research priorities of autistic and PDA communities being addressed, increased accessibility and contextualization in terms of real-world meaning, and increased trust between researchers and the communities (Gowen et al., 2019).

### **Limitations and Ethical Considerations**

Although this thesis has provided new evidence regarding the forensic implications of camouflaging, the limitations within this thesis should be acknowledged. First, much of the research presented and conducted is cross-sectional, preventing the identification of the direction of relationships between variables. For example, depression and anxiety may be both risk factors for and consequences of victimisation and offending. Importantly, the point at which camouflaging was initiated in relation to victimisation experiences and offending behaviour cannot be determined. Longitudinal research would be better able to determine the temporal order of victimisation, offending, and camouflaging behaviour to further understand the function and consequences of camouflaging behaviour.

Although not possible due to practical restrictions, follow-up interviews with participants would have allowed for rich qualitative data to compliment the quantitative data collected. Autistic and PDA individuals could have also expressed their views on the findings, potentially adding new hypotheses, explanations, and context to the results. Participants could also provide insight into the attrition rates and practical barriers to participation. Future research would benefit from using both qualitative and quantitative methods, including qualitatively exploring the findings with participants in follow-up interviews.

Chapter Two illustrated that setting (e.g., clinical vs. community) is an important factor in the risk of victimisation. This was not controlled in the empirical studies and could have affected the results. Additionally, findings presented in this thesis may be limited to those without learning disabilities. There may be a difference in the prevalence of and risk factors for offending and victimisation, between autistic individuals with and without learning disabilities which could not be identified in this thesis. The results of the systematic review and empirical studies are therefore limited in their generalisability to those without learning disabilities.

Similarly, Chapter Two highlighted the importance of cultural context on victimisation as there were differences in the prevalence rates between countries of origin. The empirical studies did not capture participants nationalities and the online nature prevents any reliable estimate of this. In future, cultural context should be considered when conducting research into offending and victimisation as this may influence the interpretation of the results and the development of interventions.

Throughout the thesis, the findings may have been influenced by the topic being investigated. For example, in research investigating offending behaviour or

victimisation, self-report questionnaires may have elicited socially desirable responding. This would impact on the reliability of the results as this is reliant on the disclosure of the participant. Nevertheless, research has demonstrated that internet-mediated research elicits significantly more reports of socially undesirable and sensitive behaviours than comparable pen-and-paper studies (Gnambs & Kaspar, 2015).

There are also ethical considerations pertinent within research in this area. For example, revisiting victimisation experiences or criminal behaviour may elicit negative emotions and potentially be retraumatising. Researchers must make every effort to provide support to participants and avoid unnecessary distress. In the case of the two empirical studies presented here, every effort was made to ensure the research adhered to the British Psychological Society's (2014) Code of Human Research Ethics, including providing information on support services to participants should they require it. Additionally, for this population, the online setting could be considered a strength of the research as one of the target populations, autistic individuals, may find online communication easier than in-person communication (Benford & Standen, 2009; Gillespie-Lynch et al., 2014).

However, reflecting on the methodology in Chapter Four and Five, there is an ethical dilemma in the way participants who reported poor or poor reading or writing abilities were excluded from the study. Excluded participants were not informed why they were excluded, simply that they were not eligible to partake in the study. By excluding participants as described, it may have elicited feelings of exclusion or rejection, perpetuating autistic individuals' experiences of exclusion. As such, it may be unethical to exclude people in this manner. On the other hand, it is unethical for participants to unnecessarily complete



questionnaires, for example, if the researcher knows the data collected from a subsample of participants could be unreliable and therefore immediately excluded. More consideration should be given to this process in future research. One potential solution is to offer more than one medium of participation. For instance, the choice of completing the survey online or in person with a researcher who can read questions and record responses would allow for improved inclusivity and protect participants from harm.

Researchers should be mindful of the expectations and experiences of autistic and PDA individuals whilst examining camouflaging. Autistic individuals have described camouflaging to lead to a change in their self-perception (Hull et al., 2017). Therefore, disclosing the use of camouflaging may have a negative emotional impact on participants. Further, Hull et al. (2017) found autistic individuals were concerned that a greater awareness of camouflaging in the general population could lead to poorer outcomes for some individuals: if other people are able to identify camouflaging, this may increase the risk of discrimination and negative outcomes. Similarly, researchers and clinicians should be mindful of the impact of the debate regarding the relationship of PDA and autism on an individuals' identity. PDA individuals may feel they have to camouflage their PDA to avoid discrimination, including from professionals, which could increase the risk forensic consequences as well as negative mental health outcomes. Future research should therefore be conducted in consultation with experts by experience.

### **Conclusions**

This thesis aimed to explore the forensic implications of camouflaging in relation to traits of autism and PDA. The findings illustrate that those autistic and PDA individuals are vulnerable to victimisation and offending through the interaction

between the condition and the environment, including the use of camouflaging. Camouflaging does not appear to be a protective factor against victimisation or offending. The costs of camouflaging may appear to outweigh the benefits, but the need for protection and acceptance prevails. Greater awareness and acceptance of autism and PDA in the general population and greater avenues of support is therefore pertinent.

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Zaykowski, H. (2015). "The penal couple": An examination of the relationship between victimization and offending and its implications for criminal justice. *Sociology Compass*, 9(5), 336-347.

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\*Denotes a paper identified by the systematic search in Chapter Two.

°Denotes a paper identified by the systematic search in Chapter Three.

## **Appendices**



## Appendix A

### MEDLINE (1946-present, via OVID) Search Syntax

1. Autism Spectrum Disorder/
2. Autistic Disorder/
3. Asperger Syndrome/
4. Autism.ti,ab.
5. Autism spectrum disorder\*.ti,ab.
6. Autism spectrum condition\*.ti,ab.
7. Autistic.ti,ab.
8. Asperger\*.ti,ab.
9. Aspergers disorder\*.ti,ab.
10. Asperger disorder\*.ti,ab.
11. Aspergers syndrome.ti,ab.
12. Asperger syndrome.ti,ab.
13. ASD.ti,ab.
14. ASC.ti,ab.
15. Autistic Disorder\*.ti,ab.
16. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13  
OR 14 OR 15
17. Crime Victims/
18. Adult survivors of child abuse/
19. Physical Abuse/
20. Child Abuse/
21. Child Abuse, Sexual/
22. Victim\*.ti,ab.
23. Abus\*.ti,ab.
24. Bully\*.ti,ab.
25. Maltreat\*.ti,ab.
26. Discriminat\*.ti,ab.
27. Neglect\*.ti,ab.
28. Trauma\*.ti,ab.
29. Crime victim\*.ti,ab.
30. Adverse.ti,ab.

- 31. Aggress\*.ti,ab.
- 32. Crim\*.ti,ab.
- 33. 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR  
28 OR 29
- 34. 16 AND 30

## Appendix B

### Inaccessible and Non-Translatable Papers

#### Inaccessible:

Carter, S. J. (2004). *Comparison of Children and Adolescents with Asperger Syndrome to their Peers with Learning Disabilities in Adaptive Functioning, Academic Achievement, and Victimization*. Dissertation, Columbia University Teachers College.

<https://www.elibrary.ru/item.asp?id=9051815>

Chen, P. Y. (2010). *The Prevalence and Predictors of Bullying and Victimization Among Elementary Students with ASD*. Doctoral dissertation, University of Washington.

Chiu, Y. L., Kao, S., Tou, S. W., & Lin, F. G. (2018). Effects of heterogeneous risk factors on psychological distress in adolescents with autism and victimization experiences in Taiwan. *Disability and Rehabilitation*, 40(1), 42-51. <https://doi.org/10.1080/09638288.2016.1242173>

Chou, Y. C. (2007). *The Correlations Between Sensory Characteristics and School Bullying Among Adolescents with Asperger Syndrome*. Doctoral dissertation, University of Kansas.

<https://search.proquest.com/openview/bd18f5510a8f415208622f5773fdbda4/1?pq-origsite=gscholar&cbl=18750&diss=y>

Dillon, A. R. (2013). *Perceptions of Peer Rejection Among Adolescents with Autism Spectrum Disorders*. Doctoral dissertation, Palo Alto University.

<https://search.proquest.com/openview/366836215ec5cd93a3a569f037097745/1?pq-origsite=gscholar&cbl=18750&diss=y>

Essique, T. J. (2016). *Gaining a Better Understanding of Bullying Behavior and Peer Victimization: An Analysis of Personality Characteristics of Adolescents with an Autism Spectrum Disorder*. Doctoral dissertation,

Adler School of Professional Psychology.

<https://search.proquest.com/openview/1bde35245f182d2848a7bca03996dfdd/1?pq-origsite=gscholar&cbl=18750&diss=y>

Kessler, E. (2005). *A Comparative Study of Sensory Profiles and the Perceptions of Bullying with Adolescents with Asperger Syndrome*. Doctoral dissertation, University of Kansas.

<https://search.proquest.com/openview/42bbd604f4b87858a5f226e8573423db/1?pq-origsite=gscholar&cbl=18750&diss=y>

Shepler, T. L. (2016). *Assessing Posttraumatic Stress Disorder in Persons with Autism Spectrum Disorder*. Doctoral dissertation, Alliant International University.

<https://search.proquest.com/openview/34b41d5bf4f890d39d3938d1cba39151/1?pq-origsite=gscholar&cbl=18750&diss=y>

Zablotsky, B., Bradshaw, C. P., Anderson, C., & Law, P. A. (2013). The association between bullying and the psychological functioning of children with autism spectrum disorders. *Journal of Developmental & Behavioral Pediatrics*, 34(1), 1-8. <https://doi.org/10.1097/DBP.0b013e31827a7c3a>

Unable to Translate.

Tanaka, Y., Ito, H., Murayama, Y., Noda, W., Nakajima, S., Hamada, M., Katagiri, M., Takayanagi, N., & Tsujii, M. (2015). The relationship between bullying and victimization, and traits of autism spectrum disorder and attention deficit/hyperactivity disorder in school children. *Japanese Journal of Developmental Psychology*, 26(4), 332-343.

<https://doi.org/10.11201/jjdp.26.332>

**Appendix C**  
Data Extraction Form

<b>General Information</b>	
<b>Researcher performing data extraction</b>	
<b>Date of data extraction</b>	
<b>Author(s)</b>	
<b>Title</b>	
<b>Year</b>	
<b>Type of publication</b>	
<b>Country of origin</b>	
<b>Source of funding</b>	
<b>Study characteristics</b>	
<b>Aims/objectives</b>	
<b>Study design</b>	
<b>Study inclusion/exclusion criteria</b>	
<b>Recruitment procedures Details of randomisation, blinding, etc.</b>	
<b>Unit of allocation Participant, group, etc.</b>	
<b>Participant characteristics</b>	
<b>Age</b>	
<b>Gender</b>	
<b>Ethnicity</b>	
<b>Socio-economic status</b>	
<b>Diagnosis characteristics</b>	
<b>Comorbidities</b>	
<b>Number of participants in each group</b>	
<b>Intervention/Assessment</b>	
<b>Setting</b>	
<b>Assessments used</b>	
<b>Results</b>	
<b>Statistical techniques used</b>	
<b>Length of follow up, and number of</b>	

<b>follow ups (if applicable)</b>	
<b>Number of participants included in the analysis</b>	
<b>Number of exclusions, withdrawals, and lost follow ups</b>	
<b>Summary of descriptive statistics (means, standard deviations)</b>	
<b>Results of primary data analysis</b>	
<b>Post-hoc analysis used</b>	
<b>Results of secondary data analysis</b>	

**Data to be requested from author:**

## Appendix D

### Quality Assessment Form

**Title:**

**Authors:**

**Year of Publication:**

---

1. Did the study address a clearly focussed issue?

- ☐ Yes  
☐ Partial  
☐ No  
☐ Can't tell

2. For all study designs: were participants recruited in an acceptable way?

*Are they defined precisely? Were they representative of a defined population?*  
*Was there a sufficient number of participants; was there a power calculation?*

- ☐ Yes  
☐ Partial  
☐ No  
☐ Can't tell
- 

3. If the study is a Randomised Control Trial (RCT):

3.1 Was the assignment of participants to groups randomised?

*How was this done? Was the allocation sequence concealed from researchers and patients?*

- ☐ Yes  
☐ Partial  
☐ No  
☐ Can't tell

3.2 Were the groups similar at the start of the trial?

*Age, sex, class, etc. Factors which may affect the outcome.*

- ☐ Yes  
☐ Partial  
☐ No  
☐ Can't tell

3.3 Were participants and study personnel blind to the conditions?

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

3.4 Were the groups treated equally?

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

3.5 Was intention to treat analysis completed?

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

---

4. For all other study designs:

4.1 Were controls selected in an appropriate way? (If applicable; case control)

*Representative of the population. Are they matched or randomly selected?*

*Was non-response high/could non-respondents be different in a way?*

*Was there a sufficient number of controls?*

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

4.2 Were cases and controls selected from the same population, if possible? (If applicable; case control)

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

4.3 Were the groups treated equally?

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

rt)



*Attrition; are those who dropped out different from those who didn't?*

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

4.5 Was the follow up of subjects long enough? (if applicable; case control, cohort)

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

---

5. Was reliability of the measures assessed and found to be satisfactory? If not reliable, was this adjusted for?

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

6. Were outcomes accurately measured?

*Subjective or objective measures? Have the measures used been validated?*

*Were measurements tools similar across groups? Was there blinding and does this matter?*

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

7. Have the authors taken account of the potential confounding factors in the design and/or in their analysis?

*Restriction in design and techniques, e.g., modelling, stratified-, regression- or sensitivity-analysis to correct, control, or adjust for confounding factors.*

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

8. Are the results precise enough?

*Confidence Intervals*

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

9. Can the results be applied to the local population?

*Are the patients similar enough to patients who would be affected by this/this would be applied to? Is it generalisable?*

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

10. Have the authors sufficiently answered the research questions through the results?

*Is there any data analysis that is missing?*

- ☐ Yes
- ☐ Partial
- ☐ No
- ☐ Can't tell

---

### Results

Rated as high, medium, or low risk of bias based on the above scores.

**Selection Bias** (Items 2, 10, and 4.1 if applicable):

**Sampling Bias** (Items 3.1, 3.2, 4.2):

**Performance Bias** (Items 3.3, 3.4, 4.3, and 4.5):

**Attrition Bias** (Items 3.5 or 4.4):

**Measurement Bias** (Items 5, 6, 7, and 8):

**Reporting Bias** (Items 1 and 10):

If more than one rating is 'high risk', exclude study.

**Decision:** ☐ Include  
☐ Exclude

## Appendix E

### Papers Excluded at Quality Assessment

Reference	High Risk Ratings from Quality Assessment
Chen, P. Y., & Schwartz, I. S. (2012). Bullying and victimization experiences of students with autism spectrum disorders in elementary schools. <i>Focus on Autism and Other Developmental Disabilities</i> , 27(4), 200-212. <a href="https://doi.org/10.1177%2F1088357612459556">https://doi.org/10.1177%2F1088357612459556</a>	High risk for selection bias as information on how participants were identified/approached/selected was limited and no power calculation was provided. High risk for measurement bias as confounding variables not controlled for and small sample size with narrow demographic.
Iglesias, O. B., Sanchez, L. E. G., & Rodríguez, M. Á. A. (2019). Do young people with Asperger syndrome or intellectual disability use social media and are they cyberbullied or cyberbullies in the same way as their peers? <i>Psicothema</i> , 31(1), 30-37. <a href="https://doi.org/10.7334/psicothema2018.243">https://doi.org/10.7334/psicothema2018.243</a>	High risk for sampling bias as unclear whether cases and controls were selected from the same population. High risk for measurement bias as validity of measures not reported and confounding variables not controlled for.
Kloosterman, P. H., Kelley, E. A., Craig, W. M., Parker, J. D., & Javier, C. (2013). Types and experiences of bullying in adolescents with an autism spectrum disorder. <i>Research in Autism Spectrum Disorders</i> , 7(7), 824-832. <a href="https://doi.org/10.1016/j.rasd.2013.02.013">https://doi.org/10.1016/j.rasd.2013.02.013</a>	High risk for measurement bias as reliability and validity of measures not reported and confounding variables not controlled for. Limited generalisability as only males with "high functioning" autism and a small sample size.
Kowalski, R. M., & Fedina, C. (2011). Cyber bullying in ADHD and Asperger Syndrome populations. <i>Research in Autism Spectrum Disorders</i> , 5(3), 1201-1208. <a href="https://doi.org/10.1016/j.rasd.2011.01.007">https://doi.org/10.1016/j.rasd.2011.01.007</a>	High risk for measurement bias as not as measures tested for reliability and confounding variables not controlled for. Limited generalisability as small sample sized used recruited from camps which may only be accessible for some.
Little, L. (2002). Middle-class mothers' perceptions of peer and sibling victimization among children with Asperger's Syndrome	High risk for measurement bias as reliability of measures not tested or reported.

and nonverbal learning disorders. *Issues in Comprehensive Pediatric Nursing*, 25(1), 43-57.

<https://doi.org/10.1080/014608602753504847>

Mayes, S. D., Breaux, R. P., Calhoun, S. L., & Whitmore, K. (2019). History of maltreatment is not associated with symptom profiles of children with Autism. *Journal of Developmental and Physical Disabilities*, 31(5), 1-11.

<https://doi.org/10.1007/s10882-019-09661-9>

Mehtar, M., & Mukaddes, N. M. (2011). Posttraumatic stress disorder in individuals with diagnosis of autistic spectrum disorders. *Research in Autism Spectrum Disorders*, 5(1), 539-546. <https://doi.org/10.1016/j.rasd.2010.06.020>

Ohlsson Gotby, V., Lichtenstein, P., Långström, N., & Pettersson, E. (2018). Childhood neurodevelopmental disorders and risk of coercive sexual victimization in childhood and adolescence—a population-based prospective twin study. *Journal of Child Psychology and Psychiatry*, 59(9), 957-965.

<https://doi.org/10.1111/jcpp.12884>

Øksendal, E., Brandlistuen, R. E., Holte, A., & Wang, M. V. (2019). Peer-victimization of young children with developmental and behavioral difficulties — A population-based study. *Journal of Pediatric Psychology*, 44(5), 589-600.

<https://doi.org/10.1093/jpepsy/jsy112>

Sterzing, P. R., Shattuck, P. T., Narendorf, S. C., Wagner, M., & Cooper, B. P. (2012). Bullying involvement and autism spectrum disorders: prevalence and correlates of bullying involvement among adolescents with an autism spectrum

Authors report results to not be representative, thus generalisability is limited.

High risk of measurement bias as reliability of measures not assessed or reported and confounding variables not controlled for. Scores from one measure used not reported in the results.

High risk of measurement bias as reliability not tested for all measures, validity not reported for all measures, and confounding variables not controlled for. Authors report results “cannot represent the majority of autistic individuals”.

High risk of attrition bias – 48.5% attrition rate. Authors reported that those who did not respond had more neurodevelopmental disorders and belonged to lower socioeconomic groups.

High risk for measurement bias as scales which were found to have poor reliability were not adjusted for. Limited generalisability as there was a low response rate and differences identified between responders and non-responders.

High risk of measurement bias as reliability and validity of measures assessed or reported.

disorder. *Archives of Pediatrics & Adolescent Medicine*, 166(11), 1058-1064. <https://doi.org/10.1001/archpediatrics.2012.790>

Storch, E. A., Larson, M. J., Ehrenreich-May, J., Arnold, E. B., Jones, A. M., Renno, P., ... & Wood, J. J. (2012). Peer victimization in youth with autism spectrum disorders and co-occurring anxiety: relations with psychopathology and loneliness. *Journal of Developmental and Physical Disabilities*, 24(6), 575-590. <https://doi.org/10.1007/s10882-012-9290-4>

Taylor, J. L., & Gotham, K. O. (2016). Cumulative life events, traumatic experiences, and psychiatric symptomatology in transition-aged youth with autism spectrum disorder. *Journal of Neurodevelopmental Disorders*, 8(1), Article 28. <https://doi.org/10.1186/s11689-016-9160-y>

Tipton-Fisler, L. A., Rodriguez, G., Zeedyk, S. M., & Blacher, J. (2018). Stability of bullying and internalizing problems among adolescents with ASD, ID, or typical development. *Research in Developmental Disabilities*, 80, 131-141. <https://doi.org/10.1016/j.ridd.2018.06.004>

High risk of measurement bias reliability of measures not assessed and confounding variables not controlled for. Limited generalisability as homogenous demographically and a small sample size.

High risk of measurement bias as reliability of measures not assessed or reported. Limited generalisability

High risk of measurement bias as confounding variables not controlled for, and validity not reported for all measures.

**Appendix F**  
PRISMA Checklist

Section/topic	#	Checklist item	Reported on page
<b>TITLE</b>			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	17
<b>ABSTRACT</b>			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	18
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of what is already known.	19-22
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	22-23
<b>METHODS</b>			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	22
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	22-23
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	23
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	214-215
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	24-25
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	25

Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	218-219
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	25-26
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	23
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., $I^2$ ) for each meta-analysis.	47-50

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	26, 47
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	47-50
<b>RESULTS</b>			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	27
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	30-46
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	30-46
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	30-46, 50-51
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	51
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	28-47
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	52-55
<b>DISCUSSION</b>			

Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	55-59
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	59-63
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	63
<b>FUNDING</b>			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	n/a

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097 For more information, visit: [www.prisma-statement.org](http://www.prisma-statement.org).



## Appendix G

### Studies Identified in Systematic Search

**Table 12**

*Description of Studies Identified in Systematic Search*

<b>Author(s) and Location</b>	<b>Sample</b>	<b>Aim(s) of the study</b>	<b>JVQ Measure and Version</b>
Aguado-Garcia et al. (2018)  Spain	106 outpatients in treatment for Attention Deficit Hyperactivity Disorder  Aged 6 to 18 years	To describe the frequency and type of victimisation in a Spanish child and adolescent clinical Attention Deficit Hyperactivity Disorder sample and to analyse the association between types of victimisation and severity of symptoms.	Spanish adaptation of the JVQ  Child self-administered and caregiver-administered questionnaire
Aho, Gren-Landell, et al. (2016)  Sweden	5960 students  Aged 16 to 20 years	To identify the lifetime prevalence of victimisation and poly-victimisation in adolescents and explore how these relate to a magnitude of background factors.	JVQ  Child self-administered questionnaire
Aho, Proczkowska-	5960 students  Aged 16 to 20 years	To study the relationship between different areas of victimisation and psychological symptoms, considering the full range of victimisation domains.	JVQ

Björklund, et al. (2016)  Sweden			Child self-administered questionnaire
Aho, Proczkowska-Björklund, et al. (2017)  Sweden	5332 students  Aged 16 to 20 years	To study peritraumatic reactions in relation to trauma exposure and symptoms of post-traumatic stress, and to enhance the understanding of peritraumatic reactions as mediators between trauma and later symptomatology.	JVQ  Child self-administered questionnaire
Almeida et al. (2020)  Portugal	849 students  Aged 12 to 17 years	To analyse the psychometric properties of the Portuguese version of the JVQ, assess the poly-victimisation prevalence, and compare difference among age and gender.	Portuguese version of the JVQ  Child self-administered questionnaire
Álvarez-Lister et al. (2014)  Spain	132 outpatients from mental health centres  Aged 12 to 17 years	To evaluate the relationship between poly-victimisation and symptoms of psychopathology.	Spanish and Catalan version of the JVQ  Child self-administered questionnaire
Álvarez-Lister et al. (2016)	100 juvenile offenders	To explore the relationship between poly-victimisation and psychopathological symptoms in young offenders.	Spanish and Catalan version of the JVQ

Spain	Aged 14 to 17 years		Child self-administered questionnaire
Álvarez-Lister et al. (2017)  Spain	118 outpatients from mental health centres  354 controls (students)  Aged 12 to 17	To conduct a clinical case-control study of victimisation among adolescent outpatients by assessing and quantifying victimisation and poly-victimisation, and their risks in the outpatient population compared with the general population.	Spanish and Catalan version of the JVQ  Child self-report interview (experimental group) and the screening version (control group)
Babchishin & Romano (2014)  Canada	213 caregivers from the general population  Aged 6 to 12 years (child)	To determine the frequency of caregiver-reported victimisation, the co-occurrence of different victimisation forms, and the psychosocial correlates of multiple victimisations.	JVQ  Caregiver-reported questionnaire
Baldwin et al. (2019)  UK	2232 twins from the general population  Assessed at age 5, 12, and 18 years	To explore whether pre-existing family-wide and individual vulnerabilities account for victimised adolescents' increased risk of self-injurious thoughts and behaviours.	JVQ-R2  Child self-report interview and

			caregiver-report interview
Banyard et al. (2017)  US	2565 adolescents and adults from the general population  Aged 12 years and above	To examine protective factors associated with physical health in a sample of adolescents and adults exposed to high levels of adversity including child abuse.	JVQ Key Domains Form  Self-report questionnaire
Barnes et al. (2016)  US	304 students  Aged 18 to 24 years	To examine the relationship between childhood poly- victimisation and social support from family and friends in emerging adulthood.	JVQ-R2  Adult Retrospective Questionnaire Short Form
Bashir & Dasti (2015a)  Pakistan	77 street boys  Aged 9 to 13 years	To determine the prevalence and demographic correlates of poly-victimisation in street children in Lahore city	JVQ – translated into Urdu.  Child self-report interview
Bashir & Dasti (2015b)  Pakistan	77 street boys  Aged 9 to 13 years	To examine the relationship between poly-victimisation and mental health in street children in Lahore city.	JVQ – translated into Urdu.

			Child self-report interview
Bogolyubova et al. (2015)  Russia	743 students  Aged 19 to 25 years	To assess the prevalence of childhood victimisation experiences in young adults in St. Petersburg, Russia.	JVQ – translated into Russian.  Adult Retrospective questionnaire
Bogolyubova et al. (2016)  Russia	743 students  Aged 19 to 25 years	To assess childhood victimisation and HIV risk behaviour in young adults in St. Petersburg, Russia.	JVQ – translated into Russian.  Adult Retrospective questionnaire
Brown & Frewen (2017)  Canada	288 students  Aged 18 to 36 years	To examine the 4-D model of trauma-related dissociation in association with a relational, socioecological assessment of childhood history of familial maltreatment in young adults.	JVQ  Adult Retrospective questionnaire
Buchweitz et al. (2019)  Brazil	40 right-handed preadolescents  Aged 10 to 14 years	To investigate the association between exposure to violence, brain function, and hair cortisol concentrations.	JVQ-R2 – translated into Portuguese.  Abbreviated child self-administered questionnaire and the

			child self-report interview
Carvalho et al. (2017)  Brazil	60 children exposed to maltreatment and 25 children not exposed to maltreatment.  Aged 6 to 12 years.	To assess global cognitive profile, prevalence of intellectual deficit, and the presence of clinical symptoms in a sample of maltreated children.	JVQ  Caregiver-report interview
Carvalho et al. (2018)  Brazil	55 maltreated children from an outpatient centre and 25 non- maltreated children from local schools  Aged 8 to 17 years	To investigate whether there are differences in executive processing between maltreated and non- maltreated children.	JVQ  Child self-administered questionnaire
Cedeño et al. (2015)  Spain	44 immigrants and 9 Spaniards  Aged 18 to 63 years	To examine the presence of histories of multiple victimisations during childhood and adolescents between low-income immigrants and non-immigrants.	JVQ  Adult Retrospective questionnaire Reduced Items Version

Chan (2013)  China	18,341 adolescents from the general population  Aged 15 to 17 years	To investigate the prevalence of child victimisation and poly-victimisation, and to examine the association between victimisation and negative health outcomes.	Chinese version of the JVQ  Child self-administered questionnaire
Chan (2014)  China	18,341 adolescents from the general population  Aged 15 to 17 years	To examine the association between child victimisation and witnessing family violence.	Chinese version of the JVQ  Child self-administered questionnaire
Chan (2015)  China	2624 parent-adolescent pairs from general population  Aged 15 to 17 years	To examine the reliability of parental reports of adolescents' experiences of victimisation and to explore possible reasons underlying any disagreement between parental and adolescent reports.	Chinese version of the JVQ  Child and caregiver-administered questionnaire
Chan (2017)  China	7466 households with a child under 17 years  Children aged 2 to 17 years	To explore the relationship between family poly-victimisation, addiction, and psychopathology.	Chinese version of the JVQ  Self- and caregiver-administered questionnaire

Chan et al. (2011)  China	415 students  Aged 15 to 17 years	To validate the Chinese JVQ in a Chinese population.	Chinese version of the JVQ  Self-administered questionnaire
Chan, Lo, & Ip (2018)  China	4114 students  Aged 6 to 18 years	To provide a detailed profile of the associations between disabilities and child victimisation, and to examine the effects of school environments on those associations.	Chinese version of the JVQ  Self- and caregiver-administered questionnaire
Chan et al. (2013)  China	18341 students  Aged 15 to 17 years	To provide a comprehensive profile of the prevalence of child sexual abuse and other forms of child victimisation in China, and to examine the associations between child sexual abuse, demographic factors, and other forms of child victimisation.	Chinese version of the JVQ  Self-administered questionnaire
Charak et al. (2016)  US and Canada	346 adults with a history of at least one traumatic event  Aged 18 to 74 years	To identify discrete patterns of childhood victimisation experiences using latent class analysis, to examine the association between class-membership and suicidal behaviour, and to investigate the role of dispositional anger on the association between class-membership and suicidal behaviour.	JVQ-R2  Adult retrospective questionnaire



Chen & Chan (2016)  China	793 children from the general population  Aged 10 to 16 years	To examine the past-year victimisation and poly- victimisation rates in children with absent parents.	Chinese version of the JVQ  Child self-administered questionnaire
Clum et al. (2012)  US	178 HIV-positive females  Aged 13 to 24 years	To examine the associations between child and adult victimisation and sexual risk behaviour in HIV positive women.	JVQ Screener  Child self-administered questionnaire
Comasco et al. (2015)  Sweden	909 children from a population-based study and 398 students  Aged 12 and 17 years, respectively.	To investigate functional genetic variation of stress responsiveness, assessed as FKBP5 genotype, in relation to early life adversity and mental health in adolescents.	JVQ  Child self-administered questionnaire
Coohey et al. (2013)  US	729 children from the general population  Aged 2 to 17 years.	To investigate the adverse effect of victimisation across ethnic group and gender, and its relationship to externalising behaviour.	JVQ  Child self-report interview

Crush et al. (2018)  UK	2232 twins from the general population  Assessed at age 5, 7, 10, 12, and 18 years	To investigate whether individual, family, or community-level characteristics were associated with an absence of psychotic experiences amongst poly- victimised adolescents.	JVQ-R2  Child self-report interview
Cuevas et al. (2010)  US	1025 children from the general population  Aged 2 to 17 years	To examine the role of psychological distress in predicting child re-victimisation across various forms including conventional crime, peer/sibling violence, maltreatment, sexual violence, and witnessed violence.	JVQ  Child self-report interview
Cuevas et al. (2009)  US	2030 children from the general population  Aged 2 to 17 years	To examine the relationship between several different forms of victimisation in the preceding year and parent-reported lifetime psychiatric diagnosis.	JVQ  Child self-report interview
Cuevas et al. (2007)  US	1000 children from the general population  Aged 10 to 17 years	To examine the pathways by which delinquency and victimisation are connected.	JVQ  Child self-report interview

Cyr et al. (2013)  Canada	2801 children from the general population  Aged 2 to 17 years	To document the victimisation experiences of children and youth from the general population in Quebec across their lifespan and during a one-year period.	JVQ, including French translation.  Child self-report and caregiver-report interview
Cyr et al. (2017)  Canada	1400 children from the general population  Aged 12 to 17 years	To document the victimisation experiences and poly-victimisation of adolescents from the general population of the province of Québec across their lifespan. To test the hypothesis that poly-victimization can predict mental health symptoms beyond individual categories of victimization. To examine if certain categories of victimization still contribute to mental health symptoms after considering poly-victimisation, taking gender differences into account	JVQ, including French translation.  Child self-report and caregiver-report interview
Cyr et al. (2012)  Canada	220 children from within the child welfare system  Aged 2 to 17 years	To document extra-family victimisation, exposure to community violence, and poly-victimisation in a child welfare sample of children and youths.	JVQ, including French translation.  Child self-report and caregiver-report interview

Cyr, Clément, & Chamberland (2014)  Canada	1401 children from the general population  Aged 2 to 11 years	To examine whether poly-victimisation predicts mental health symptoms and to assess whether categories of victimisation still contribute to mental health symptoms after considering poly-victimisation.	JVQ, including French translation.  Child self-report and caregiver-report interview
de Azeredo et al. (2019)  Brazil	83 children who lived in or near settings with considerable levels of social disadvantage.  Aged 7 to 14 years	To investigate the impact of exposure to poly-victimisation in Latin American children and adolescents on hair cortisol levels.	Portuguese version of the JVQ-R2  Abbreviated child self-report interview
de Haan et al. (2017)  Germany	231 children who had experienced maltreatment.  Aged 8 to 17 years	To explore possible predictors for dysfunctional maltreatment-related cognitions and to investigate the associations of dysfunctional maltreatment-related cognitions with a range of self-reported internalising and externalising symptoms and self-reported PTSD.	German version of the JVQ  Child self-report and caregiver-report interview

Dedić et al. (2019)  Serbia	90 patients from a psychiatric day hospital  Mean age for suicide attempters 38.76 years and 37.55 years for non-suicide attempters.	To examine whether victimisation in childhood increased the likelihood of suicide attempt in adults.	JVQ  Adult Retrospective Questionnaire
DeHart et al. (2014)  US	115 jailed women  Aged 17 to 55 years	To understand pathways to offending for jailed women with and without mental illness.	JVQ  Adult Retrospective Interview
DeHart & Moran (2015)  US	100 delinquent girls  Aged 12 to 18 years	To examine the range and co-occurrence of different types of violence over the lifetime, to examine independent and cumulative trajectories of risk for varied types of victimisation, and to examine the relationship of victimisation to girl's offending.	JVQ  Child self-report interview
Dong et al. (2013)  China	3155 students  Aged 14 to 18 years	To explore the prevalence and risk factors of poly-victimisation among Chinese adolescents.	Chinese version of the JVQ

			Child self-administered questionnaire
Dubé et al. (2018)  Canada	1400 children from the general population  Aged 12 to 17 years	To assess the relationship between community violence exposure and psychological health.	JVQ  Child self-report interview
Elliott et al. (2009)  US	329 students  Aged 18 to 24 years	To examine the relationship among poly-victimisation, six aggregate categories of childhood victimisation, and college adjustment in females.	JVQ  Adult Retrospective Questionnaire
Finkelhor, Hamby, et al. (2005)  US	2030 children from the general population  Aged 2 to 10 years	To assess the utility and performance of the 34-item JVQ in eliciting the recent victimisation experiences of a national sample of children ages 2 to 17.	JVQ  Child self-report and caregiver-report interview
Finkelhor et al. (2017)  US	13052 children from the general population  Aged 0 to 17 years	To explore the epidemiology of family abduction, the characteristics of offenders and victims, the risk factors for exposure, and the possible impact of mental health and child functioning.	Enhanced version of the JVQ*  Child self-report and caregiver-report interview

Finkelhor et al. (2007a)  US	1467 children from the general population  Aged 2 to 17 years.	To demonstrate how important exposure to multiple forms of victimisation (poly-victimisation) is in accounting for increases in children's symptomatic behaviour from within a longitudinal sample.	JVQ  Child self-report and caregiver-report interview
Finkelhor et al. (2007b)  US	1467 children from the general population  Aged 2 to 17 years.	To assess the role of multiple victimisations or poly- victimisation in explaining trauma symptomatology.	JVQ  Child self-report and caregiver-report interview
Finkelhor et al. (2007c)  US	1467 children from the general population  Aged 2 to 17 years.  1 year between assessments	To understand to the degree to which a broad variety of victimisations, including child maltreatment, conventional crime, peer, and sexual victimisation, persist for children from one year to the next.	JVQ  Child self-report and caregiver-report interview

Finkelhor et al. (2009)  US	1467 children from the general population  Aged 2 to 17 years.	To use a lifetime assessment of victimisation experiences to identify children and youth with high cumulative levels of victimisation (poly-victims) and to compare such children to other victims and non-victims and compare the contribution of cumulative victimisation to levels of psychological distress.	JVQ  Child self-report and caregiver-report interview
Finkelhor, Ormrod, et al. (2005a)  US	2030 children from the general population  Aged 2 to 10 years	To compare alternative ways of identifying children who experience multiple victimisations using questions from the JVQ.	JVQ  Child self-report and caregiver-report interview
Finkelhor, Ormrod, et al. (2005b)  US	2030 children from the general population  Aged 2 to 10 years	To examine the violence, crime, and victimisation in a nationally representative sample.	JVQ  Child self-report and caregiver-report interview
Finkelhor et al. (2014a)  US	2030 children assessed in 2003, 4046 in 2008, and 4107 in 2011 from the general population.	To identify trends in children's exposure to violence, crime, and abuse from 2003 through 2011.	JVQ  Child self-report and caregiver-report interview



	Aged 2 to 17 years		
Finkelhor et al. (2011)  US	4549 children from the general population  Aged 0 to 17 years	To identify whether contemporary assessment of the accumulation of victimisations is effective in identifying distressed children, even at a young age.	Enhanced version of the JVQ*  Child self-report and caregiver-report interview
Finkelhor, Turner, et al. (2009)  US	4549 children from the general population  Aged 0 to 17 years	To obtain national estimates of exposure to the full spectrum of the childhood violence, abuse, and crime victimisations relevant to both clinical practice and public policy approaches to the problem.	Enhanced version of the JVQ*  Child self-report and caregiver-report interview
Finkelhor et al. (2010)  US	2030 children from the general population assessed in 2002-2003 and 4046 children assessed in 2008.  Aged 2 to 17 years	To assess trends in children's exposure to abuse, violence, and crime victimisation	JVQ  Child self-report and caregiver-report interview

Finkelhor et al. (2015)  US	4000 children from the general population  Aged 0 to 17 years	To provide healthcare professionals, policy makers, and parents with current estimates of exposure to violence, crime, and abuse across childhood and at different developmental stages.	Enhanced version of the JVQ*  Child self-report and caregiver-report interview
Finkelhor et al. (2014b)  US	2313 children from the general population  Aged 10 to 17 years	To assess whether youth are upset by being asked questions about sensitive kinds of abuse, victimisation, family maltreatment, and sexual victimisation during standard epidemiological surveys.	Enhanced version of the JVQ*  Child self-report interview
Forns et al. (2013)  Spain	553 students  Aged 13 to 18 years	To confirm the structure of the JVQ and exposure its psychometric properties in a sample of school attending adolescents.	Spanish/Catalan version of the JVQ  Child self-administered questionnaire
Frewen et al. (2017)  Canada	2478 adults from general population  Young to middle aged	To evaluate trauma-related altered states of consciousness.	JVQ  Adult retrospective questionnaire

Garcia & Ochotorena (2017)	608 children from the general population	To analyse lifetime victimisation among adolescents of a community sample.	Spanish/Catalan version of the JVQ  Child self-administered questionnaire
Spain	Aged 12 to 18 years		
Ghazali et al. (2018)	327 children from detention facilities	To investigate the relationship between childhood maltreatment and depressive and Post-Traumatic Stress Disorder symptoms.	Malaysian translation of the JVQ  Child self-administered questionnaire
Malaysia	Aged 12 to 17 years		
Gren-Landell et al. (2011).	3211 students	To explore the relationship between social anxiety disorder and multiple victimisation experiences in a community sample of adolescents.	JVQ  Child self-administered questionnaire
Sweden	Aged 17 years		
Gren-Landell et al. (2013).	5960 students	To explore the association between post-traumatic stress symptoms and social anxiety disorder in Swedish adolescents. To explore mental health services utilisation in relation to these conditions.	JVQ  Child self-administered questionnaire
Sweden	Aged 16 to 20 years		
Guerra et al. (2016)	144 children from child and adolescent mental health services	To evaluate the role of poly-victimisation in developing internalising symptoms while considering the possible effect of non-productive coping and the availability of social support.	Spanish/Catalan version of the JVQ
Spain			

	Aged 12 to 17 years		Child self-administered questionnaire
Hamby et al. (2013)  US	4549 children from the general population  0 to 17 years	To examine gender patterns across numerous forms of victimisation	Enhanced version of the JVQ*  Child self-report and caregiver-report interview
Hamby, Blount, et al. (2018)  US	478 individuals from the general population  Aged 12 to 75 years	To explore whether digital poly-victimisation contributes to post-traumatic stress and anxiety/dysphoria symptoms after controlling for in-person poly-victimisation.	JVQ Key Domains Form  Child self-administered questionnaire and adult retrospective questionnaire
Hamby, Grych, et al. (2018)  US	2565 individuals from the general population  Aged 12 and over (mean age 30.0 years)	To test whether poly-strengths is a unique predictor of functioning and whether there are strengths that account for unique variance in adaptation even after accounting for the total number of strengths.	JVQ-R2 Key Domains Form  Child self-administered questionnaire and adult retrospective questionnaire

Harrelson et al. (2017)  US	63 sexual offenders  Mean age 15.74 years	To examine the relationship among self-disclosure of illegal sexual behaviour and childhood poly- victimisation and caregiver attachment.	JVQ-R2  Child self-administered questionnaire
Hasselle et al. (2017)  US	288 students  Aged 18 to 24 years	To examine the relationship between childhood poly- victimisation and disordered eating symptoms in emerging adulthood	JVQ-R2 Screener Sum Version  Adult retrospective questionnaire
Holt et al. (2007)  US	689 students  Aged 10 to 12 years	To explore the possibility that bullies, victims of bullying, and bully-victims are at an increased risk for victimisation in four other domains: conventional crime, child maltreatment, sexual victimisation, and witnessing or indirect victimisation	JVQ  Child self-administered questionnaire
Hooven et al. (2012)  US	123 students at risk of high school drop- out  Assessed at mean age 16 years and mean age of 24 years	To longitudinally examine the effect of multi-domain childhood victimisation on emotional distress and suicide risk, net of adolescent risk and protective factors, including family dysfunction	JVQ Reduced Items version  Adult retrospective interview

Howard Sharp et al. (2017)  US	252 students  Aged 18 to 25 years	To examine the relationships between social support and mental health across profiles of potentially traumatic events.	JV-R2  Adult Retrospective Short Form Questionnaire
Howell & Miller-Graff (2014)  US	321 students  Aged 18 to 24 years	To examine the role of social support, spirituality, and emotional intelligence promoting resilience during emerging adulthood.	JVQ-R2  Adult retrospective questionnaire
Jávita & Cerezo (2014)  Spain	109 adolescents with poor school performance  Aged 15 to 18 years	To analyse the relationship between victimisation and psychological maladjustment in adolescents are the role of self-compassion as a mediator in this relationship.	JVQ  Child self-administered questionnaire
Kirchner et al. (2014)  Spain	823 students  Aged 14 to 18 years	To analyse the relationship between interpersonal victimisations and post-traumatic stress symptoms. To determine the most prevalent specific post-traumatic stress symptoms among poly-victimised adolescents. To establish the time-based effect of interpersonal victimisation experiences that occurred in the last year versus those that occurred years before on current level of post-traumatic stress symptoms	Spanish/Catalan version of the JVQ  Child self-administered questionnaire

Kirchner et al. (2020)  Spain	918 children from the general population  Aged 14 to 18 years	To establish the coping profile of adolescents according to the number of reported interpersonal victimisations. To identify the most victimised adolescents (poly-victims), detecting those with psychological symptoms (non-resilient poly-victims) and those without psychological symptoms (resilient poly-victims). To examine any differences in coping strategies between the two groups. To determine the accumulative effect of victimisations on mental health. To test the mediating role of both approach and avoidance coping between lifetime interpersonal victimisations and symptoms.	Spanish/Catalan version of the JVQ  Child self-administered questionnaire
Lätsch et al. (2017)  Switzerland	6749 children from the general population  Aged 14 to 17 years	To investigate the prevalence of poly-victimisation in an adolescent population and to examine associations between single victimisation types with emotional and social functioning when poly-victimisation is controlled for.	JVQ – translated into German, French, and Italian  Child self-administered questionnaire
Le et al. (2015)  Vietnam	1606 students  Mean age 16.5 years	To establish the prevalence of lifetime exposure to poly-victimisation and demographic characteristics of victims among high school students in Vietnam.	JVQ-R2 - translated into Vietnamese.

			Child self-administered questionnaire
Le et al. (2016a)  Vietnam	1616 students  Aged 16 to 18 years	To examine the associations between lifetime exposure to poly-victimisation, health risk behaviours, symptoms of common mental health problems and suicidal ideas in the previous year among high school students in Vietnam.	JVQ-R2 - translated into Vietnamese.  Child self-administered questionnaire
Le et al. (2016b)  Vietnam	1616 students  Aged 14 to 25 years	To examine the associations between exposure to individual forms of victimisation and poly-victimisation and health-related quality of life in adolescents in Vietnam.	JVQ-R2 - translated into Vietnamese.  Child self-administered questionnaire
Lewis et al. (2019)  UK	2232 twins  Assessed at 5, 7, 10, 12, and 18 years	To evaluate the prevalence, clinical factors, and risk factors associated with trauma exposure and post-traumatic stress disorder in young people.	JVQ-R2  Child self-report interview
Li et al. (2013)  China	259 students  Aged 18 to 21 years	To characterise executive dysfunctions in poly-victimised students without post-traumatic stress disorder symptoms and the relationship between neuropsychological and behavioural rating measures of executive functions.	Chinese version of the JVQ  Child self-administered questionnaire



Lui et al. (2016)  China	169 children with executive dysfunction and 208 control children  Aged 11 to 17 years	To explore if the relationship between victimisation and executive function was dependent on the functional variation in 5-HTTLPR in a non-clinical sample and adolescents.	Chinese version of the JVQ  Child self-administered questionnaire
Mallagón-Neri et al. (2018)  Spain	100 students  Aged 12 to 18 years	This study aimed to analyse the contextual variables, momentary satisfaction, and perception of momentary emotional and behavioural symptoms in a cohort of adolescents by the level of victimization, using ecological momentary assessment.	Spanish/Catalan version of the JVQ  Child self-administered questionnaire
Marzi et al. (2018)  UK	2232 twins  Assessed when aged 5, 7, 10, 12, and 18 years	The authors sought to investigate whether early-life victimisation stress is associated with genome-wide DNA methylation.	JVQ-R2  Child self-report and caregiver-report interview
Matthews et al. (2017)  UK	2232 twins  Assessed when aged 5, 7, 10, 12, and 18 years	To test the associations between loneliness and sleep quality and whether past exposure to violence exacerbated this association in a nationally representative sample of young adults.	JVQ-R2  Child self-report and caregiver-report interview

Méndez-López & Pereda (2019)	1068 children from the general population	To analyse the prevalence of victimization and poly-victimisation in a community sample of Mexican adolescents.	Spanish/Catalan version of the JVQ
Mexico	Aged 12 to 17 years		Child self-administered questionnaire
Merrick et al. (2018)	12935 children from the general population	To examine the effect of instability on multiple childhood victimisation experiences, beyond child maltreatment alone.	JVQ
US	Mean age 8.6 years		Child self-report and caregiver-report interview
Miller-Graff et al. (2016)	269 adults from the general population	To examine the specific associations between age of first exposure, total childhood violence exposure, and posttraumatic stress symptoms in adulthood. Further, the conditional and indirect effects of age of first exposure on posttraumatic stress symptoms were examined.	JVQ-R2 Screener Sum Version
US	Aged 19 to 62 years		Adult retrospective questionnaire
Mitchell et al. (2011)	2051 children from the general population	To examine past-year and lifetime rates of online victimisation and associations with offline victimisations, trauma symptomatology, and delinquency among adolescents	JVQ
US	Aged 10 to 17 years		Child self-report and caregiver-report interview

Mitchell et al. (2015)  US	4114 children from the general population  Aged 2 to 17 years	To report the prevalence of weapons involved in the victimisation of youth with emphasis on weapons with a “high lethality risk” and how such exposure fits into the broader victimisation and life experiences of children and adolescents.	JVQ  Child self-report and caregiver-report interview
Paul et al. (2018)  France	39 autistic children from an autism expert centre and 53 controls from the general population  Aged 7 to 18 years	To explore the prevalence of peer victimisation in children with autism in France	JVQ – Francophone version  Child self-report interview
Pereda et al. (2015)  Spain	149 children from child and adolescent mental health centres  Aged 12 to 17 years	To analyse lifetime and past-year victimisation and poly-victimisation in adolescent outpatients from a southern European country.	Spanish/Catalan version of the JVQ  Child self-report interview
Pereda et al. (2017)  Spain	101 young offenders  Aged 14 to 17 years	To present victimization rates in young offenders from a Southwestern European country	Spanish/Catalan version of the JVQ

			Child self-report interview
Pereda et al. (2018)  Spain	804 students  Aged 12 to 17 years	To provide the first validity evidence for the Spanish JVQ under the causal indicators approach, using lifetime experiences of victimisation in a community sample of adolescents, and to explore the associations between poly-victimisation and psychopathological symptoms.	Spanish/Catalan version of the JVQ  Child self-administered questionnaire
Pereda et al. (2014)  Spain	1107 students  Aged 12 to 17 years	To determine the prevalence of victimisation and poly-victimisation in a community sample of Spanish adolescents	Spanish/Catalan version of the JVQ  Child self-administered questionnaire
Pfeffer (2016)  US	262 children with Autism Spectrum Disorder  Aged 5 to 18 years	To assess the victimisation experiences of American children diagnosed with Autism Spectrum Disorder.	JVQ  Caregiver-report questionnaire
Pinto-Cortez, Gutiérrez-Echegoyen, et al. (2018)	718 students  Aged 17 to 28 years	To examine the prevalence of victimisation and poly-victimisation and gender differences in young adults from Arica in Northern Chile.	Spanish/Catalan version of the JVQ – adapted for local language.

Chile			Adult retrospective questionnaire
Pinto-Cortez, Pereda, et al. (2018)  Chile	706 students  Aged 12 to 17 years	To report the prevalence of youth victimisation and poly-victimisation in Northern Chile.	Spanish/Catalan version of the JVQ – adapted for local language.  Adult retrospective questionnaire
Renner et al. (2018)  US	2030 children from the general population  Aged 12 to 17	To determine whether classes of adolescents could be identified based on shared trauma symptomatology and externalising behaviours.	JVQ  Child self-report interview
Richmond et al. (2009)  US	Study 1 - 321 female students Study 2 - 329 female college samples	To examine the relationship among poly-victimisation, six categories of childhood victimisation, and current psychological symptomatology in college females.	JVQ  Adult retrospective questionnaire

	Aged 18 to 24 years		
Robert-Mazaye et al. (2017)  Canada	972 children from the general population  Aged 2 to 11 years	To explore profiles of children who are victims of many forms of violence.	JVQ  Caregiver-report interview
Romano et al. (2016)  Canada	138 children from the general population  Aged 6 to 12 years	To examine the association between children's exposure to a range of victimisation experiences and their psychosocial functioning, namely trauma symptoms as well as internalising and externalising behaviours.	JVQ  Caregiver-report questionnaire
Segura et al. (2015)  Spain	129 children from residential care  Aged 12 to 17 years	To analyse lifetime and past-year victimization and poly-victimisation among adolescents in residential care from a southwestern European country. Age and gender differences in victimisation profiles were examined.	Spanish/Catalan version of the JVQ  Child self-report interview
Segura et al. (2018)  Spain	1105 students  Aged 12 to 17 years	To determine whether three different methodological approaches used to assess poly-victimisation that apply the JVQ identify the same group of adolescent poly-victims.	Spanish/Catalan version of the JVQ  Child self-administered questionnaire

Segura et al. (2016)  Spain	127 children from residential care  Aged 12 to 17 years	To analyse the effect of poly-victimisation on symptom severity among adolescents cared for by the child welfare system in a southern European country.	Spanish/Catalan version of the JVQ  Child self-report interview
Segura et al. (2017)  Spain	127 children from residential care  Aged 12 to 17 years	To examine the role of several resilience resources in the relationship between lifetime victimisation and mental health problems among adolescents in care.	Spanish/Catalan version of the JVQ  Child self-report interview
Soler et al. (2015)  Spain	923 students  Aged 14 to 18 years	To study the relationship between different areas of victimisation and psychological symptoms considering the full range of victimisations adolescents suffer.	Spanish/Catalan version of the JVQ Screening Sum Version  Child self-administered questionnaire
Soler, Kirchner, et al. (2013)  Spain	736 students  Aged 14 to 18 years	To examine the relationship between total kinds of victimisation experiences, self-esteem, and internalising and externalising symptoms. To also explore the mediator and/or moderator role of two self-esteem facets: self-liking and self-competence.	Spanish/Catalan version of the JVQ Screening Sum Version  Child self-administered questionnaire

Soler et al. (2012)  Spain	722 students  Aged 14 to 18 years	To provide evidence concerning the effects of experiencing multiple forms of victimisation on self-esteem and post-traumatic stress symptoms in Spanish adolescents.	Spanish/Catalan version of the JVQ Screener Sum Version  Child self-administered questionnaire
Soler, Segura, et al. (2013)  Spain	923 students  Aged 14 to 18 years	To provide data regarding the association between reported degree of victimisation and suicidal phenomena with special emphasis on gender differences.	Spanish/Catalan version of the JVQ Screener Sum Version  Child self-administered questionnaire
Sterzing et al. (2017)  US	1177 gender minority adolescents  Aged 14 to 19 years	To generate the first estimates of poly-victimisation for transgender, genderqueer, and cisgender sexual minority adolescents and identify social ecological correlates of last year poly-victimisation.	JVQ-R2 Abbreviated Interview  Child self-administered questionnaire
Suárez-Soto et al. (2018)  Spain	227 children from child and youth serving systems.  Aged 12 to 17 years	To assess the relationship between poly-victimisation and suicidality in adolescents involved in child and youth serving systems in Spain.	Spanish/Catalan version of the JVQ  Child self-report interview



Suárez-Soto et al. (2019)  Spain	227 children from child and youth serving systems.  Aged 12 to 17 years	To examine the relationship between poly-victimisation, resilience, and suicidality among adolescents in child and youth serving systems.	Spanish/Catalan version of the JVQ  Child self-report interview
Turner, Finkelhor, et al. (2017)  US	13052 children from the general population  Aged 10 to 17 years	To compare children and youth who have experienced lifetime war-related parental absence or deployment with those having no such history on a variety of victimisation types, non-victimisation adversity, trauma symptoms, and delinquency; and assess whether cumulative adversity and victimisation help to explain elevated emotional and behavioural problems among children of parents who have experienced war-related absence or deployment.	JVQ  Child self-report and caregiver-report interview
Turner, Finkelhor, et al. (2013)  US	4046 children from the general population  Aged 2 to 17 years	To compare past year rates of 7 forms of child victimisation across 3 different family structure types (two biological/adoptive parents, single parent, step/cohabiting family) among a representative sample of 4046 children.	Enhanced version of the JVQ*  Child self-report and caregiver-report interview

Turner et al. (2011)  US	2999 children from the general population  Aged 6 to 17 years	To examine past-year exposure to peer-perpetrated victimisation, occurring both within and outside of school contexts, among school-aged children in the United States.	Enhanced version of the JVQ*  Child self-report and caregiver-report interview
Turner et al. (2007a)  US	1000 children from the general population  Aged 10 to 17 years	To explore the association between family structure variation and child victimisation.	JVQ  Caregiver-report interview
Turner et al. (2007b)  US	1090 children from the general population  Aged 6 to 17 years	To describe differences in utilisation by demographic characteristics and compare receipt of counselling between children who scored high versus lower on levels of mental health symptoms, multiple victimisation exposure, levels of delinquency, and parent-child conflict	JVQ  Caregiver-report interview
Turner, Finkelhor, & Ormrod (2010)  US	4053 children from the general population  Aged 2 to 17 years	To document children's lifetime exposure to multiple victimisation types and examines the association between poly-victimisation and the extent of trauma symptomatology.	JVQ  Child self-report and caregiver-report interview

Turner, Finkelhor, Ormrod, et al. (2010)  US	503 children from the general population  Aged under 2 years	To obtain estimates of child maltreatment and other forms of personal, witnessing of, and indirect victimisation among children aged 0 to 1 year in the United States and examine associations between infant victimisation exposure and the infant's level of emotional and behavioural symptoms.	JVQ  Caregiver-report interview
Turner, Shattuck, et al. (2017)  US	1186 children from the general population  Aged 10 to 17 years	To begin to identify mechanisms that help explain the impact of poly-victimisation on youth mental health.	Enhanced version of the JVQ*  Child self-report and caregiver-report interview
Turner, Shattuck, et al. (2013)  US	2039 children from the general population  Aged 10 to 17 years	To consider whether elevated distress among youth living in more disordered neighbourhoods can be explained by personal exposure to violence and victimisation, level of non-victimisation adversity, and family support.	Enhanced version of the JVQ*  Child self-report interview
Weiss & Fardella (2018)  Canada	45 adults with Autism Spectrum Disorder and 42 controls	To describe the self-reported experiences of childhood and adulthood victimisation and perpetration in adults with Autism Spectrum Disorder compared to a matched sample, and how victimisation and	JVQ  Adult retrospective questionnaire

	Aged 18 to 53 years	perpetration are associated with Autism-related difficulties	
Wemmers et al. (2018)  Canada	1400 children from the general population  Aged 12 to 17 years	To examine victimisation, in particular poly-victimisation as a criminogenic factor.	JVQ, including French translation.  Child self-report interview

\*the enhanced version of the JVQ appears to be the JVQ-R2 with supplemental questions, though this is not clear in the text.

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## Appendix H

### Ethical Approval Letter for Empirical Studies



University of  
Nottingham  
UK | CHINA | MALAYSIA

**Faculty of Medicine & Health Sciences  
Research Ethics Committee**

Faculty Hub  
Room E41, E Floor, Medical School  
Queen's Medical Centre Campus  
Nottingham University Hospitals  
Nottingham, NG7 2UH

Email: [FMHS-ResearchEthics@nottingham.ac.uk](mailto:FMHS-ResearchEthics@nottingham.ac.uk)

30 October 2019

Grace Trundle  
2<sup>nd</sup> Year Student/Doctorate in Forensic Psychology  
c/o Dr Vincent Egan, Associate Professor  
Room B23 Yang Fujia  
Jubilee Campus  
Wollaton Road  
Nottingham  
NG8 1BB

Dear Ms Trundle

Ethics Reference No: 382-1909 – please always quote	
Study Title:	
a) Camouflaging and Offending Behaviour in Adults: The Relationship with Autism Spectrum Disorder Traits	
b) The Relationship Between Camouflaging, Victimization, and Autism Spectrum Disorder Traits in the General Population	
Chief Investigator/Supervisor: Vince Egan, Associate Professor, Year 1 Director of Forensic Psychology Programmes, Psychiatry and Applied Psychology, School of Medicine.	
Lead Investigators/student: Grace Trundle, 2 <sup>nd</sup> Year Doctorate, Forensic Psychology	
Proposed Start Date: 30/10/2019	Proposed End Date: 30/10/2020

Thank you for submitting the above application and the following documents were received:

- FMHS REC Application form and supporting documents version 1.1: 04.09.2019

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. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Professor Ravi Mahajan  
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

## **Appendix I**

### **Study Advert**

#### **PARTICIPANTS WANTED!**

As part of a postgraduate course at the University of Nottingham, a research study into social skills is being conducted! The purpose of the study is to investigate social processes in risky behaviour.

The results of the study will help clinical researchers better understand social and personal skills associated with offending and victimisation.

The study involves several questionnaires looking at behaviour, experiences, and characteristics, which will take around 30 minutes to complete. If you would like to take part in the study, you will be provided with all the study information and asked to sign a consent form allowing the researchers to access and use your anonymous data. Taking part in the study is voluntary, and you can change your mind at any point during the study. No personal information will be collected. Your responses to the questionnaires will be anonymous and only the researcher and supervisor will have access to the data provided.

If you are interested in taking part in the study, please click the link below which will take you to the research page: (*link no longer active*)

If you have any questions, please contact any of the following:

Grace Trundle ([grace.trundle@nottingham.ac.uk](mailto:grace.trundle@nottingham.ac.uk))

Dr Vincent Egan ([Vincent.egan@nottingham.ac.uk](mailto:Vincent.egan@nottingham.ac.uk))

## **Appendix J**

### **Participant Information Sheet**

#### **PARTICIPANT INFORMATION**

School of Medicine, Faculty of Medicine & Health Sciences

**Project Title: Social Skills, Offending, and Victimisation**

Researcher: Grace Trundle ([grace.trundle@nottingham.ac.uk](mailto:grace.trundle@nottingham.ac.uk))

Supervisor: Vincent Egan ([Vincent.egan@nottingham.ac.uk](mailto:Vincent.egan@nottingham.ac.uk))

Ethics Reference Number: 362-1909

Version 1.0

We would like to invite you to be part of a research study. Before you decide, it is important for you to understand why this research is being done and what it will be involved. Please take time to read this carefully and discuss it with others if you wish. You can contact the above-named researchers if anything is not clear.

**What is the purpose of this research?**

The purpose of this study is to investigate the relationship between social skills and offending behaviour and experiences of victimisation. Exploring these variables and factors could lead to the development of assessment tools and treatment and management services.

**Why have I been invited to take part?**

You have been invited to part because we are looking for adults in the general population to make up the study participants.

**Do I have to take part?**

No. It is up to you to decide if you want to take part in this research. If you agree to participate, you will be asked to sign a consent form. However, you can withdraw from the study at any point during the study, without giving a reason and without any negative consequences, by closing the survey.

**What will happen to me if I take part?**

If you agree to take part in the study, you will be asked to sign a consent form. Following this, you will complete a series of questionnaires related to your behaviour, experiences, and characteristics. This will take around 30 minutes to complete. You are encouraged to answer all questions; however, you do not

have to answer any questions you do not wish to. You are free to withdraw from the study (i.e., not complete the questionnaires, exit the study, and remove your data) at any point during the study by closing the browser window. This will not have any negative implications for you. The data will only be uploaded on completion of the questionnaire when you click the SUBMIT button. After submitting your data, you will no longer be able to withdraw from the study as the anonymized information will have been entered into the online database. Nonetheless, this information will be completely anonymous, and only the named researcher and the supervisor will have access to the data which is stored in a secure online database.

### **Are there any risks in taking part?**

There are no known physical risks linked with this research study. However, completion of the questionnaire may cause some concern in some participants, as some questions concern potentially distressing experiences. If you begin to feel distressed by the study, please take a break and consider whether it is appropriate to continue. In the event of significant distress, please contact Dr Vincent Egan ([vincent.egan@nottingham.ac.uk](mailto:vincent.egan@nottingham.ac.uk)) who will provide you with information about appropriate support.

### **Are there any benefits in taking part?**

This research will not have any immediate benefit to you. However, the results will help others to understand social processing in offending and victimisation. This will eventually allow for better allocation of supportive resources and improve clinical care for persons who show this behaviour. It may also direct future research.

### **What happens to the data provided?**

All information you provide during the study will be anonymous. You will not be asked for your name or any other information which may link you to your data. Each participant will have a unique participant number to accumulate the data, but we will not know who these people are. The data collected will only be used for the purposes of the research project. Your data will be used collectively when reporting the research findings. General Data Protection Regulations will apply to all information gathered within the questionnaires. All information collected will be stored on a password-locked computer file which can only be accessed by the researcher and supervisor. It may be viewed by official adjudicating bodies to ensure that the research is being conducted correctly. We have a duty of confidentiality to you as a research participant. The University of Nottingham ensures the highest level of cyber-security on their computer systems, which will protect the stored data.

### **What will happen if I don't want to carry on with the study?**

Even after you have signed the consent form, you are free to withdraw from the study without giving any reason. You can do this by closing your browser window.

### **Who will know that I am taking part in this research?**

All information collected during this research will be kept anonymous. All such data are kept on password-protected databases sitting on a restricted access computer system in a swipe-card secured building and would only be accessed by the research team. Under UK Data Protection laws, the University is the Data Controller (legally responsible for the data security) and the Supervisor of this study (named above) 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 as we need to manage your information in specific ways to comply with certain laws and for the research to be reliable and accurate. You can find out more about how we use your information and to read our privacy notice at:

<https://www.nottingham.ac.uk/utilities/privacy.aspx/>

Designated individuals of the University of Nottingham may be given access to data for monitoring and/or audit of the study to ensure we are complying with guidelines.

### **What will happen to the results of the research?**

The data collected by the study will be used as two research reports forming the Doctoral thesis of Grace Trundle. These reports may be published in scientific journals and presented at scientific conferences. All data included in these reports will be anonymous. The raw data will be stored securely at the University of Nottingham and will be stored for 7 years before being destroyed. The overall anonymized data from this study may be used by other researchers in the future for research and teaching purposes during this time.

### **Who has reviewed this study?**

All research involving people is looked at by an 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 and Health Sciences Research Ethics Committee (Reference number: FMHS 362-1909).

### **What if something goes wrong?**

If you have a concern about any aspect of this project, please speak to the researcher, Grace Trundle or the Supervisor, Vincent Egan, who will do their best to answer your query. The researcher should acknowledge your concern within 10 working days and give you an indication of how he/she intends to deal with

it. If you remain unhappy and wish to complain formally, you can do this by contacting 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. E-mail: [FMHS-ResearchEthics@nottingham.ac.uk](mailto:FMHS-ResearchEthics@nottingham.ac.uk)

#### Contact Details

If you would like to discuss the research with someone beforehand (or if you have questions afterwards), please contact:

Grace Trundle

Email: [grace.trundle@nottingham.ac.uk](mailto:grace.trundle@nottingham.ac.uk)

School of Medicine

Floor B, Yang Fujia Building

Jubilee Campus

Wollaton Road

Nottingham

NG8 1BB

If you have any questions or concerns, please don't hesitate to contact the researchers or research supervisor. We can be contacted before and after your participation at the above address.

**THANK YOU FOR YOUR PARTICIPATION**

**Appendix K**  
Participant Consent Form

**CONSENT FORM**

School of Medicine, Faculty of Medicine & Health Sciences

**Project Title:** Social Skills, Offending, and Victimisation

Researcher: Grace Trundle ([grace.trundle@nottingham.ac.uk](mailto:grace.trundle@nottingham.ac.uk))

Supervisor: Vince Egan ([Vincent.egan@nottingham.ac.uk](mailto:Vincent.egan@nottingham.ac.uk))

I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	YES/NO
--	--------

I understand that my participation is voluntary and that I am free to withdraw at any time during the study, without giving any reason	YES/NO
--	--------

I understand that for this study, once I have submitted my data, this data cannot be withdrawn	YES/NO
--	--------

I understand that relevant sections of my data collected in the study may be looked at by the research group and by other responsible individuals for monitoring and audit purposes. 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.	YES/NO
---	--------

I understand that information collected during the study (questionnaire data) will be anonymous	YES/NO
---	--------

I understand that information recorded during the study will be uploaded into a secure database on a computer kept in a secure	YES/NO
--	--------



place. Data will be kept for 7 years after the study has ended and then destroyed.

**Optional:** I agree that my research data may be stored and used in possible future research during and after 7 years and shared with other researchers including those working outside the University. YES/NO

I agree to take part in this study YES/NO

Ethics Reference Number: 382-1909

By clicking the below button, I indicate that I understand what is involved in the study and that my data will be anonymous. I agree to take part in the study, and I understand that once I click submit at the end of the study, I will not be able to withdraw my data.

**YES/NO**

## **Appendix L**

### Participant Instructions

#### **INSTRUCTIONS**

You will be presented with a series of questionnaires. Each questionnaire will be displayed on a separate page. Instructions for each questionnaire will be displayed at the top of each page.

Please take your time in answering questions. You do not have to answer any questions you do not wish you, but we encourage you to answer as many as you can.

If at any point, you no longer want to take part in your study, simply close the browser window. All information provided by you will be deleted.

Once you have finished the study, please click **submit**. Once you have clicked submit, your answers will be saved, and you will no longer be able to withdraw your data. Your data will remain anonymous.

If you have any questions, please contact Dr Vincent Egan at [vincent.egan@nottingham.ac.uk](mailto:vincent.egan@nottingham.ac.uk) or Grace Trundle at [grace.trundle@nottingham.ac.uk](mailto:grace.trundle@nottingham.ac.uk)

To start, please press continue.

**Appendix M**  
Psychometric Measures

**Preliminary Questionnaire**

*Please answer the following questions:*

How old are you?

Are you:

Male

Female

Other

How would you rate your basic reading and writing abilities?

Very Poor

Poor

Average

Good

Very Good

Do you think you have any of the following: tick all that apply and please indicate whether it was formally diagnosed by a doctor or qualified professional

Autism Spectrum Disorder (including Asperger's)

Diagnosed by a doctor

Pathological Demand Avoidance

☐

Attention Deficit Hyperactivity Disorder

☐

Oppositional Defiance Disorder

☐

Conduct Disorder

☐

Intellectual Disability

☐

Dyslexia

☐

Dyspraxia

☐

Depression

☐

Anxiety

☐

Other – please provide information.

## Extreme Demand Avoidance Questionnaire – Adult

**Instructions:** Below are a series of phrases describing people's behaviours. Please use the rating scale above to describe how well each statement describes you. Describe yourself as you generally are, not as you wish to be in the future, being honest about yourself. Please read each statement carefully, and then select the response that corresponds to how you see yourself.

1: not true    2: somewhat true    3: mostly true    4: very true

	Not True	Some what True	Mostly True	Very True
I obsessively resist and avoid ordinary demands and requests.	1	2	3	4
I complain about illness or physical incapacity to avoid a request or demand.	1	2	3	4
I am driven by the need to be in charge.	1	2	3	4
I find everyday pressures (e.g., having to go on a routine trip/ visit dentist) intolerably stressful.	1	2	3	4
I tell other people how they should behave, but do not feel these rules apply to me.	1	2	3	4
I mimic other people's mannerisms and styles (e.g., use phrases adopted from other people to express myself to others).	1	2	3	4
I have difficulty complying with demands and requests from others unless they are carefully presented.	1	2	3	4
I take on roles or characters (from TV/real life) and 'act them out'.	1	2	3	4
I show little shame or embarrassment (e.g., I might throw a tantrum in public and not be embarrassed).	1	2	3	4
I invent fantasy worlds or games and act them out.	1	2	3	4
I am good at getting round others and making them do as I want.	1	2	3	4

I am unaware or indifferent to the differences between myself and figures of authority (e.g., parents, teachers, and police).	1	2	3	4
I will still sometimes have a 'meltdown' (e.g., scream, tantrum, hit, or kick) if I feel pressurised to do something.	1	2	3	4
I like to be told I have done a good job.	1	2	3	4
I have a very rapidly changing mood (e.g., I can switch from affectionate to angry in an instant).	1	2	3	4
I know what to do or say to upset particular people.	1	2	3	4
I blame or target a particular person/persons.	1	2	3	4
I deny things I have done, even if I am caught "red handed".	1	2	3	4
I can be distracted (preoccupied) 'from within' (i.e., absorbed in my own world).	1	2	3	4
I make an effort to maintain my reputation with other people.	1	2	3	4
I sometimes use outrageous or shocking behaviour to get out of doing something.	1	2	3	4
I have periods when I have extremely emotional responses (e.g., crying/giggling, becoming furious) to what others would think small events.	1	2	3	4
I ensure any social interaction is on my own terms.	1	2	3	4
I prefer to interact with others in an adopted role or communicate through props or objects.	1	2	3	4
I seek to quibble and change rules set by others.	1	2	3	4
I can be passive and difficult to engage	1	2	3	4

## Ritvo Autism Asperger Diagnostic Scale – Revised

**Please choose one of the following alternatives:**

This is true or describes me now and when I was young.

This was true or describes me only now (refers to skills acquired).

This was true only when I was young (16 years or younger).

This was never true and never described me.

Please answer the questions according to what is true for *you*. Check only one column per statement!

<b>Some life experiences and personality characteristics that may apply to you</b>	<b>True now and when I was young</b>	<b>True only now</b>	<b>True only when I was younger than 16</b>	<b>Never True</b>
It is difficult for me to understand how other people are feeling when we are talking				
Some ordinary textures that do not bother others feel very offensive when they touch my skin				
It is very difficult for me to work and function in groups				
It is difficult to figure out what other people expect of me				
I often don't know how to act in social situations				
I can chat and make small talk with people				
When I feel overwhelmed by my senses, I have to isolate myself to shut them down				
How to make friends and socialise is a mystery to me				
When talking to someone, I have a hard time telling when it is my turn to talk or to listen				

Sometimes I have to cover my ears to block out painful noises (like vacuum cleaners or people talking too much or too loudly)				
It can be very hard to read someone's face, hand, and body movements when we are talking				
I focus on details rather than the overall idea				
I take things too literally, so I often miss what people are trying to say				
I get extremely upset when the way I like to do things is suddenly changed				

### Camouflaging Autistic Traits - Questionnaire

Please read each statement below and choose the answer that best fits your experiences during social interactions.

Item	Strongly Disagree	Disagree	Some-what Disagree	Neither Agree nor Disagree	Some-what Agree	Agree	Strongly Agree
When I am interacting with someone, I deliberately copy their body language or facial expressions							
I monitor my body language or facial expressions so that I appear relaxed							
I rarely feel the need to put on an act in order to get through a social situation							
I have developed a script to follow in social situations (for example, a list of questions or topics of conversation)							
I will repeat phrases that I							



have heard others say in the exact same way that I first heard them							
I adjust my body language or facial expressions so that I appear interested by the person I am interacting with							
In social situations, I feel like I'm 'performing' rather than being myself							
In my own social interactions, I use behaviours that I have learned from watching other people interacting							
I always think about the impression I make on other people							
I need the support of other people in order to socialise							
I practice my facial							

expressions and body language to make sure they look natural							
I don't feel the need to make eye contact with other people if I don't want to							
I have to force myself to interact with people when I am in social situations							
I have tried to improve my understanding of social skills by watching other people							
I monitor my body language or facial expressions so that I appear interested by the person I am interacting with							
When in social situations, I try to find ways to avoid interacting with others							
I have researched the rules of social							

interactions (for example, by studying psychology or reading books on human behaviour) to improve my own social skills							
I am always aware of the impression I make on other people							
I feel free to be myself when I am with other people							
I learn how people use their bodies and faces to interact by watching television or films, or by reading fiction							
I adjust my body language or facial expressions so that I appear relaxed							
When talking to other people, I feel like the conversation flows naturally							

I have spent time learning social skills from television shows and films, and try to use these in my interactions							
In social interactions, I do not pay attention to what my face or body are doing							
In social situations, I feel like I am pretending to be 'normal'							

## Patient Health Questionnaire - 9

Over the last two weeks, how often have you been bothered by any of the following problems?

	<b>Not at all</b>	<b>Several days</b>	<b>More than half the days</b>	<b>Nearly every day</b>
Little interest or pleasure in doing things				
Feeling down, depressed, or hopeless				
Trouble falling or staying asleep, or sleeping too much				
Feeling tired or having little energy				
Poor appetite or overeating				
Feeling bad about yourself – or that you are a failure or have let yourself or your family down				
Trouble concentrating on things, such as reading the newspaper or watching television				
Moving or speaking so slowly that other people could have noticed – or the opposite: being so fidgety or restless that you have been moving around a lot more than usual				
Thoughts that you would be better off dead or of hurting yourself in some way				

### Generalised Anxiety Disorder Screener - 7

Over the last two weeks, how often have you been bothered by the following problems?

	<b>Not at all</b>	<b>Several days</b>	<b>More than half the days</b>	<b>Nearly every day</b>
Feeling nervous, anxious, or on edge				
Not being able to stop or control worrying				
Worrying too much about different things				
Trouble relaxing				
Being so restless that it is hard to sit still				
Becoming easily annoyed or irritable				
Feeling afraid as if something awful might happen				

## Non-Violent and Violent Offending Behaviour Scale

Sometimes conflict gets out of hand and physical fights occur. Couples have many different ways of trying to settle their differences. This is a list of things that might happen when you have differences. Please use the following scale to answer the questions below. Please read each statement carefully; please indicate whether you have ever done this, and then please indicate how many times you did each of these in the last year. If your relationship did not last for the whole of the past year, please indicate how many times you did each of these during your whole relationship.

Have you ever:

1. Kicked a partner.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

2. Hit a partner with a fist.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

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3. Slapped a partner.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

4. Bent partner's fingers.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

5. Threw something at a partner.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in</b>	<b>6-10 times in</b>	<b>11-20 times in</b>	<b>More than 20 times in</b>



			<b>the past year</b>	<b>the past year</b>	<b>the past year</b>	<b>the past year</b>

6. Pushed, grabbed, or shoved partner.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

7. Scratched partner

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

8. Twisted partner's arm or hair

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

Sometimes conflict gets out of hand and physical fights occur. Please answer the following questions in relation to your behaviour. Please do not include fights you have had with a romantic partner (such as a boyfriend/ girlfriend) as you have already been asked about on the previous page. Only include fights with someone other than your partner, for example, friend, family member, stranger, etc. Please use the following scale to answer the questions below. Please read each statement carefully, indicating whether you have ever done this, and then select the number that corresponds to how many times you did this in the last year.

Have you ever:

9. Kicked someone.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

10.Hit someone with a fist.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

11.Pushed, grabbed, or shoved someone.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

12.Beat someone up.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

13.Scratched someone.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

14.Slammed/held someone against a wall.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

15.Hit or tried to hit someone with something besides a fist.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

16.Bit someone

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

17.Threw something at someone.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

18.Slapped someone.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

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19. Twisted someone's arm/hair.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

20. Bent someone's fingers.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

Please answer the following questions in relation to your behaviour. Please use the following scale to answer the questions below. Please read each statement carefully, and indicate if you have ever done this, then how many times in the past year.

Have you ever:

21. Used ecstasy.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

22.Used cocaine/crack.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

23.Used speed.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

24.Used cannabis.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

25. Been in a gang of three or more fighting, causing damage/disturbance.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

26. Damaged something in a public place.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>



27. Graffitied

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

28. Broke windows of an empty building

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

29. Damaged other's property on purpose

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

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30.Stole £5-£50.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

31.Stole less than £5.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

32.Possessed stolen property.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in</b>	<b>6-10 times in</b>	<b>11-20 times in</b>	<b>More than 20 times in</b>

			<b>the past year</b>	<b>the past year</b>	<b>the past year</b>	<b>the past year</b>

33. Entered a building to steal/damage.

Yes ☐ No ☐

How often did this happen in the past year?

<b>This has never happened</b>	<b>Once in the past year</b>	<b>Twice in the past year</b>	<b>3-5 times in the past year</b>	<b>6-10 times in the past year</b>	<b>11-20 times in the past year</b>	<b>More than 20 times in the past year</b>

## Juvenile Victimization Questionnaire – Adult Retrospective

These are questions about some things that might have happened during your adulthood. Your “adulthood” begins when turn 18. Try your best to think about your entire adulthood as you answer these questions.

- 1) In your adulthood, has anyone used force to take something away from you that you were carrying or wearing?  
☐ Yes  
☐ No
- 2) In your adulthood, has anyone stolen something from you and never given it back? Things like a backpack, money, watch, clothing, bike, stereo, or anything else?  
☐ Yes  
☐ No
- 3) In your adulthood, has did anyone broken or ruined any of your things on purpose?  
☐ Yes  
☐ No
- 4) Sometimes people are attacked with sticks, rocks, guns, knives, or other things that would hurt. Has anyone hit or attack you on purpose with an object or weapon during your adulthood? Somewhere like: at home, at a store, in a car, on the street, or anywhere else?  
☐ Yes  
☐ No
- 5) During your adulthood, has anyone hit or attacked you without using an object or weapon?  
☐ Yes  
☐ No
- 6) During your adulthood has someone started to attack you, but for some reason, it didn't happen? For example, someone helped you or you got away?  
☐ Yes  
☐ No

- 7) In your adulthood, has someone threatened to hurt you and you thought they might really do it?
- ☐ Yes
  - ☐ No
- 8) When a person is kidnapped, it means they were made to go somewhere, like into a car, by someone who they thought might hurt them. During your adulthood, has anyone tried to kidnap you?
- ☐ Yes
  - ☐ No
- 9) In your adulthood, have you been hit or attacked because of your skin colour, religion, or where your family comes from? Because of a physical problem you have? Or because someone said you were gay?
- ☐ Yes
  - ☐ No
- 10) In your adulthood, has someone close to you hit, beat, kick, or physically hurt you in any way?
- ☐ Yes
  - ☐ No
- 11) In your adulthood, has someone close to you called you names or said mean things to you?
- ☐ Yes
  - ☐ No
- 12) Sometimes groups of peers or gangs attack people. In your adulthood, has a group of peers or a gang hit, jump, or attack you?
- ☐ Yes
  - ☐ No
- 13) In your adulthood, has anybody tried to hurt your private parts on purpose by hitting or kicking you there?
- ☐ Yes
  - ☐ No

- 14) In your adulthood, has anybody picked on you by chasing you or grabbing you or by making you do something you didn't want to do?
- ☐ Yes
  - ☐ No
- 15) In your adulthood, have you ever felt scared or feel really bad because others were calling you names, saying mean things to you, or saying they didn't want you around?
- ☐ Yes
  - ☐ No
- 16) In your adulthood, has a boyfriend or girlfriend or anyone you went on a date with slap or hit you?
- ☐ Yes
  - ☐ No
- 17) In your adulthood, has a person you know touched your private parts when they shouldn't have or made you touch their private parts? Or did a person you know force you to have sex?
- ☐ Yes
  - ☐ No
- 18) In your adulthood, has a person you did not know touched your private parts when they shouldn't have, made you touch their private parts or force you to have sex?
- ☐ Yes
  - ☐ No
- 19) In your adulthood, has anyone tried to force you to have sex; that is, sexual intercourse of any kind, even if it didn't happen?
- ☐ Yes
  - ☐ No
- 20) In your adulthood, has anyone made you look at their private parts by using force or surprise, or by "flashing" you?
- ☐ Yes

☐ No

21) In your adulthood, has anyone hurt your feelings by saying or writing something sexual about you or your body?

☐ Yes

☐ No

22) In your adulthood, have you SEEN someone get pushed, slapped, hit, punched, or beat up by their boyfriend or girlfriend?

☐ Yes

☐ No

23) In your adulthood, have you SEEN a parent hit, beat, kick, or physically hurt a child, not including a spanking on the bottom?

☐ Yes

☐ No

24) In your adulthood, in real life, have you SEEN anyone get attacked on purpose WITH a stick, rock, gun, knife, or other thing that would hurt? Somewhere like: at home, at a store, in a car, on the street, or anywhere else?

☐ Yes

☐ No

25) In your adulthood, in real life, have you SEEN anyone get attacked or hit on purpose WITHOUT using a stick, rock, gun, knife, or something that would hurt?

☐ Yes

☐ No

26) In your adulthood, has anyone stolen something from your house that belongs to your family or someone you live with? Things like a TV, stereo, car, or anything else?

☐ Yes

☐ No

27) In your adulthood, has anyone close to you been murdered, like a friend, neighbour or someone in your family?

☐ Yes

☐ No

28) In your adulthood, have you been in any place in real life where you could see or hear people being shot, bombs going off, or street riots?

☐ Yes

☐ No

29) In your adulthood, have you been in the middle of a war where you could hear real fighting with guns or bombs?

☐ Yes

☐ No



## **Appendix N**

### **Participant Debrief Sheet**

#### **THANK YOU FOR YOUR PARTICIPATION**

Thank you for taking the time to complete this survey.

In the survey, you completed measures of behaviours, experiences, and social processes. Research has shown that people with Autism often engage in 'camouflaging' which involves using techniques to conceal their Autism. In this study, we wanted to see if camouflaging impacts upon people's experience of victimisation and offending behaviour. Camouflaging could protect people from these experiences by hiding vulnerabilities associated with Autism. However, hiding Autistic traits could also prevent access to specialist services and resources which may increase the risk of victimisation or offending.

We did not provide a detailed description early in the study as some people might have changed their answers. If you know other people who wish to complete this study, please don't share this information with them until afterwards.

If you would like to know more about camouflaging behaviours, the following paper might be useful:

Hull, L., Petrides, K. V., Allison, C., Smith, P., Baron-Cohen, S., Lai, M. C., & Mandy, W. (2017). "Putting on my best normal": social camouflaging in adults with autism spectrum conditions. *Journal of Autism and Developmental Disorders*, 47(8), 2519-2534.

If you have any queries, concerns, or complaints, please contact the research supervisor Dr Vincent Egan ([vincent.egan@nottingham.ac.uk](mailto:vincent.egan@nottingham.ac.uk)). Please also contact Dr Egan if you experienced any negative emotions or distress during the study, and he will provide you with information about appropriate support. If this does not resolve your issues, please contact the FMHS Research Ethics Committee Administrator, Faculty Hub, Medicine and Health Sciences, E41, E Floor, Medical School, Queen's Medical Centre Campus, Nottingham University Hospitals, Nottingham, NG7 2UH or via E-mail: [FMHS-ResearchEthics@nottingham.ac.uk](mailto:FMHS-ResearchEthics@nottingham.ac.uk).

The following links can provide you with support and information regarding topics explored in this study.

### **Victimisation**

<https://www.victimsupport.org.uk/>  
<https://www.bullying.co.uk/>  
<https://www.citizensadvice.org.uk/law-and-courts/discrimination/about-discrimination/equality-advisory-support-service-discrimination-helpline/>

### **PDA or Autism**

[www.autism.org.uk](http://www.autism.org.uk)  
[www.pdasociety.org.uk](http://www.pdasociety.org.uk)  
[www.assupportgrouponline.org](http://www.assupportgrouponline.org)  
[www.facebook.com/groups/autismuksupport](https://www.facebook.com/groups/autismuksupport)  
[www.facebook.com/groups/pdauk](https://www.facebook.com/groups/pdauk)  
  
[www.facebook.com/groups/pdasupport](https://www.facebook.com/groups/pdasupport)