Gender-specific needs and interventions for autistic adolescents in mainstream secondary schools.

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Acknowledgements

Summary

This thesis consists of three parts: a literature review, an empirical paper, and a critical appraisal.

Part 1: Major Research Literature Review

Part 1 provides a narrative review of the literature. It first details some of the theoretical underpinnings of autism, before focusing on the needs and experiences of female autistic adolescents in mainstream educational settings. Social skills and friendship interventions for autistic adolescents are explored in relation to gender, for example in terms of their curriculum content and participants' responses. It concludes by outlining the research questions for the empirical paper presented in Part 2.

Part 2: Major Research Journal Article

Part 2 presents an empirical paper. It begins with a brief overview of the relevant literature and the rationale for the research questions. The perceptions of staff in relation to gender-specific needs and interventions for autistic adolescents are sought via eight semi-structured interviews. The themes generated from the thematic analysis are presented and discussed in relation to research. Implications for Educational Psychology (EP) practice, strengths and limitations and potential directions for future research are also explored.

Part 3: Major Research Reflective Account

Part 3 offers a critical review of the research's contribution to knowledge and practice, including considerations for disseminating the research findings. A reflective commentary of the researcher's journey is also provided, including the decisions made throughout the research process relating to the development of the research questions, conducting the literature review, ontological and epistemological positions, data collection and analysis, and ethical considerations.

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List of Abbreviations

ALN	Additional Learning Needs
ALNCo	Additional Learning Needs Co-ordinator
APA	American Psychiatric Association
ASD	Autism Spectrum Disorder
ASSIA	Applied Social Science Index and Abstracts
BEI	British Education Index
BPS	British Psychological Society
CAMHS	Child and Adolescent Mental Health Services
CRAE	Centre for Research in Autism and Education
DSM	Diagnostic and Statistical Manual of Mental Disorders
EHC	Education, Health and Care
EP	Educational Psychologist
ERIC	Education Resources Information Centre
HCPC	Health and Care Professions Council
ICD	International Classification of Diseases
LEA	Local Education Authority
LSA	Learning Support Assistant
PEP	Principal Educational Psychologist
SENCo	Special Educational Needs Co-ordinator
TEP	Trainee Educational Psychologist
UK	United Kingdom
UNCRC	United Nations Convention on the Rights of the Child
WHO	World Health Organisation

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Part 1: Major Research Literature Review
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1. Introduction

1.1. Overview

This literature review adopts a narrative style and sets the context for the research article that follows. A narrative approach was chosen because it offers a summary of what is already known about a topic and can be helpful for identifying gaps in the field (Baumeister & Leary, 1997; Grant & Booth, 2009). Narrative reviews are also helpful for describing the history or development of a phenomena, which is arguably relevant for the research topic of autism and girls (Baumeister & Leary, 1997; Siddaway, Wood & Hedges, 2019). The review begins by providing an overview of Autism Spectrum Disorder (ASD), including its presentation and prevalence, and some of its theoretical underpinnings. A gendered, developmental perspective is adopted and the unique social experiences and needs of autistic females during adolescence are explored. Gender differences in the content and response to social skills and friendship interventions for autistic adolescents are presented, before considering the relevance of the research for Educational Psychologists (EPs). It ends by providing a rationale and outlining the research questions for the empirical paper presented in Part 2.

1.2. Search Strategy

A scoping exercise was undertaken between August and September 2022 to identify research investigating gender differences in social skills and friendship interventions for autistic adolescents. The purpose of this scoping exercise was to map key concepts and to examine the extent, range, and nature of the research available in this area (Arksey & O'Malley, 2005). Six prominent psychology and education databases were covered, including: PsycInfo, Scopus, Web of Science, Applied Social Science Index and Abstracts (ASSIA), Education Resources Information Centre (ERIC), and British Education Index (BEI). The results from each of the databases were exported to EndNote (a referencing software) to manage the citations. The literature was then screened for relevance and included in the review based on participant sample and intervention type. Participants had to be adolescents (11-18 years) with a diagnosis of autism, and without intellectual disability. The intervention had to have a primary focus on developing either global social communication and interaction skills, social functioning, or peer relationships and friendships. Further details of the search terms,

inclusion and exclusion criteria, and number of 'hits' generated from each database can be found in Appendix 1.

Of the literature generated from the systematic search, thirty-four studies met the inclusion criteria stipulated for participant characteristics and intervention type. Due to a relatively small body of research conducted in the United Kingdom (UK), research from other countries (predominantly the United States of America) were included. Whilst it is recognised that there may be substantial differences in the interventions available between the nations, the purpose of this review was, a) to explore whether the content of interventions is the same for both male and female autistic adolescents, and b) to establish whether studies have investigated gender differences in autistic participants' responses to these interventions. A narrative style of analysis was adopted as, unlike a systematic review, the intention was not to provide a summary of the available evidence, but rather to build up a picture and learn about whether appropriate consideration is given to the role of gender in social skills and friendship interventions for autistic adolescents (Booth, Sutton, Clowes & Martyn-St James, 2021; Siddaway et al., 2019). Also, several systematic reviews examining social skills and friendship interventions for autistic adolescents have been conducted recently, perhaps reducing the need to integrate and synthesise the literature this way (e.g., Chang & Dean, 2022; Zanuttini & Little, 2022; Zheng, Kim, Salzman, Ankenman & Bent, 2021).

A second search was carried out to identify literature exploring autistic females' experiences of adolescence. This was to develop a thorough understanding of the needs of this population. The search string ['autis*' AND (girl* OR female* OR woman OR women)] AND [(friend* OR social*) OR (experience* OR need* OR support*)] was applied to titles in the PsycInfo database. PsycInfo was the chosen database as it generated the most literature in the initial systematic search. Manual searches of key journals including *Educational Psychology in Practice, Journal of Autism and Developmental Disorders* and *Autism* were also conducted. These journals were selected because of their relevance to the subject area. By not searching a range of databases and journals, it is plausible to assume that not all the available literature in this area was captured. However, in line with a narrative style of review, the intention was not to provide a synthesis of all the available evidence, but rather to provide an overview of autistic females' experiences and needs (Booth et al., 2021; Siddaway et al., 2019). Studies were included in this part of the review if they focussed on autistic females' social experiences

and support needs in mainstream secondary school settings. This inclusion criterion was applied as the aim was to capture the experiences of female autistic adolescents without intellectual disability. A narrative synthesis allows for the findings to be presented thematically (Booth et al., 2021; Siddaway et al., 2019).

1.3. Terminology and Considerations

This research adopts identity-first language ("autistic person") as opposed to person-first language ("person with autism") because identity-first language is largely preferred by the autistic community, and is argued to be less stigmatising (Gernsbacher, 2017; Kenny et al., 2016). The term 'gender' is used rather than 'sex' to reflect the socially and culturally constructed characteristics associated with being male or female (e.g., roles and norms), as opposed to biological or physiological differences derived from being assigned male or female at birth (e.g., hormones and reproductive organs; [Gentile, 1993]). This is considered appropriate given that social skills, which are a central focus for this research, are defined in the context of social and cultural variables (Radley & Dart, 2022).

In recognising the potential controversy surrounding interventions for autistic youth, that perhaps imply that autistic behaviours are something which require 'fixing' (Kapp, Gillespie-Lynch, Sherman & Hutman, 2013; O'Reilly, Lester & Kiyimba, 2020), it feels important to emphasise that whilst social skills interventions are a core part of this review, the goal of this research is not to eradicate autism. Rather, it aims to understand how autistic adolescents, particularly girls, can be supported to manage and engage with the social complexities of secondary school and the wider social world. The notion of promoting the wellbeing and adaptative functioning of autistic individuals, for example through interventions that ameliorate some of the potential difficulties experienced, is acknowledged within the neurodiversity movement, which celebrates differences and advocates for strength-based discourses of autism (O'Reilly et al., 2020).

2. <u>Autism</u>

2.1. What is autism?

Autism Spectrum Disorder (hereafter autism) is a lifelong diagnostic label given to individuals, characterised by persistent challenges in the domains of social communication and interaction, and restricted and repetitive patterns of behaviours, interests, or activities (American Psychiatric Association [APA], 2013; World Health Organisation [WHO], 2022). Essential features of social communication and interaction associated with a diagnosis of autism include difficulties with social-emotional reciprocity, nonverbal communicative behaviour used for social interaction, and developing, maintaining, and understanding relationships (APA 2013; WHO, 2022). Restricted and repetitive patterns of behaviours, interests, or activities in autism may present as an inflexibility to change, an excessive adherence to rules and routines, stereotyped and/or repetitive behaviours, a preoccupation with one or more special interests and/or objects, and hypo- or hyper-sensitivity to sensory stimuli (APA 2013; WHO, 2022). The extent to which such challenges manifest and affect individuals varies along a continuum of severity (APA, 2013; WHO, 2022).

Whilst it might be considered that there is a consensus for the core behavioural features of autism, there appears to be far less agreement regarding the underlying nature of these behaviours. The theoretical underpinnings of autism are multiple and varied and encompass a wide range of perspectives. It is beyond the scope of this review to cover these in depth, however, a brief synopsis of some of the dominant perspectives are provided as it might be considered that understanding key ideas about the origins of autism is important when thinking about interventions to support this population.

2.1.1. Biological models

Biological models of autism attribute its aetiology to genetic risk or neurological factors including fundamental differences, for example, in levels of neurotransmitters and brain size and growth (Volker & Lopata, 2008). Outward expressions of behaviours associated with a diagnosis of autism are therefore considered to have objective, biological origins (Anderson-Chavarria, 2022). This perspective arguably adopts a medicalised view of autism as it locates

challenges experienced in social communication and interaction, and restricted and repetitive behaviours, as being caused by physical differences within autistic individuals (Anderson-Chavarria, 2022). Interventions derived from a biological approach to a medical model of autism, may therefore involve pharmacological intervention because autistic behaviours are conceptualised as a set of deficits or impairments that require changing (Volker & Lopata, 2008).

Critics of biomedical explanations of autism argue that it is too strongly deficit-focussed and fails to recognise the strengths and aptitudes associated with some autistic traits (Anderson-Chavarria, 2022). However, it could be argued that not all biological models have a medicalised view of autism. For example, neurodiversity, which celebrates variation and uniqueness within the human population, perceives autism as one of a variety of neurological differences that affects individuals (O'Reilly et al., 2020). Despite recognising the role that the social environment plays in possibly exacerbating the challenges autistic individuals experience, neurodiverse explanations of autism consider their unique ways of thinking and experiencing the world, to have a biological basis (O'Reilly et al., 2020).

2.1.2. Cognitive models

Cognitive models of autism attempt to understand autistic behaviours in terms of differences in information processing and mechanisms, including theory of mind, central coherence, and executive functioning styles. Despite representing different abilities, they are thought to co-exist and integrate to account for the heterogeneity of behaviours observed in the autistic population (Pellicano, Maybery, Durkin & Maley, 2006). From a theory of mind perspective, the differences autistic individuals experience may be explained in terms of their abilities to attribute mental states and understand other people's intentions and beliefs (Frith, Morton & Leslie, 1991). According to the theory of central coherence, a preference for local over global processing, whilst at times might be considered a strength, may also come at the expense of achieving higher-level meaning (Frith & Happé, 1994). Differences in executive functioning skills such as planning, mental flexibility, and inhibition are also thought to underlie some of the behavioural manifestations of autism (Hill, 2004). Finally, Baron-Cohen (2002) proposed that autistic behaviours might reflect an 'extreme male brain', characterised

by a systemising as opposed to an empathising cognitive profile. Interventions founded upon cognitive theories of autism may therefore attempt to achieve behavioural change by improving skills and understanding in aspects of social cognition.

2.1.3. Socio-cultural models

Socio-cultural models of autism take into consideration human behaviour more broadly and the conventional roles and practices generally expected for inclusion in society. This perspective considers autism to be a social construct because the behaviours autistic individuals display, do not adhere to or are not consistent with the behaviours displayed by the predominant neurotype in society (Anderson-Chavarria, 2022; Woods, 2017). This aligns with a neurodiverse approach to autism, which describes autistic individuals as neurodivergent because their ways of thinking and being do not align with the social expectations considered 'typical' (Exceptional Individuals, 2020). Advocates of a social-cultural model of autism argue that because behavioural traits associated with autism are considered alternative to the norm and are not readily tolerated by society, this leads to them being 'othered' and socially excluded (Anderson-Chavarria, 2022; Kapp et al., 2013). Autistic behaviours are therefore perceived as differences, not deficits (Kapp et al., 2013; O'Reilly et al., 2020). Interventions that adopt a social-cultural model of autism may focus on increasing people's awareness and understanding of how best to support and respond to autistic individuals' needs (Kapp, 2019).

2.1.4. An integrated approach

It should be acknowledged that whilst the above theoretical models are presented separately, it does not mean that they exist in isolation. Despite their differences, there may be potential overlap. An alternative conceptualisation of autism, and one that this research adopts, is that the interaction of social and individual (biological and/or cognitive) factors contributes towards autistic individuals' subjective experiences. It recognises autistic individuals as a valid and equal part of human diversity, whilst simultaneously understanding that the differences they experience in social communication and interaction, and restricted and repetitive

behaviours, may present potential challenges, and that interventions to ameliorate those challenges are potentially beneficial (Kapp et al., 2013).

2.2. Prevalence of autism

Prevalence estimates of autism are highly variable. This is suggested to reflect methodological differences across studies, including sample populations and variations in the definition of autism (Salari et al., 2022; Zeidan et al., 2022). Cultural and demographic factors are also suggested to contribute towards disparities in prevalence rates (Salari et al., 2022; Zeidan et al., 2022). In their systematic review of the global prevalence of autism, Zeidan et al. (2022) concluded that approximately 1% of children are diagnosed worldwide.

In the UK, data gathered from the annual census in 2018/19 demonstrated differing autism prevalence estimates across the four nations, with Northern Ireland having the highest prevalence (3.20%) and Wales having the lowest prevalence (1.92%; [McConkey, 2020]). Whilst these statistics may reflect real regional variances, differences in prevalence estimates may also be exaggerated by possible disparities in the availability of appropriate health and educational professionals, opportunities for relevant training, assessment and diagnostic procedures, and census recording practices (McConkey, 2020). Almost one in three pupils in England with an Education, Health, and Care (EHC) Plan have autism identified as their primary need, which is the most common type of need among pupils with an EHC Plan (Department for Education, 2022). According to the Welsh Government (2020), approximately one fifth of the total number of pupils with a statement of Special Educational Needs in Wales have autism as an identified need. Therefore, it can be assumed that most schools and educational professionals, including EPs will likely have a role in supporting autistic children and young people.

2.3. The role of gender in autism

A higher proportion of males than females are diagnosed as autistic (Loomes, Hull & Mandy, 2017; Russell et al., 2022; Salari et al., 2022). A 4:1 gender ratio of autism in favour of males is widely cited, including in the most recent publications of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; [APA, 2013]) and the International Classification of

Diseases (ICD-11; [WHO, 2022]). However, in their systematic review of prevalence studies, Loomes et al. (2017) argue that this ratio is closer to 3:1. Diagnostic trends also indicate that females are on average diagnosed as autistic later than males (Russell et al., 2022; Shattuck et al., 2009). Intellectual disability is considered to affect gender ratio estimates in autism, with higher ratios (10:1) being associated with autistic individuals *without* intellectual disability and lower ratios (2:1) being associated with autistic individuals *with* intellectual disability (Fombonne, 2009; Loomes et al., 2017). This suggests that, in the absence of additional intellectual disability, females are less likely to receive a diagnosis of autism relative to males; perhaps due to less severe presentations of autistic traits going undetected or a greater capacity to camouflage their needs (Dworzynski, Ronald, Bolton & Happé, 2012; Loomes et al., 2017; WHO, 2022). Whilst recognising that there is diversity among autistic individuals, the focus of this research is on autistic individuals *without* intellectual disability as the gender difference is most stark for this population. Two dominant perspectives offer explanations for the gender diagnosis gap in autism.

2.3.1 The female protective effect

The female protective effect refers to the idea that there is something inherent in being female which 'protects' females from and reduces the likelihood of them being autistic. It theorises that a greater environmental and genetic risk is required for females to express the same level of autistic characteristics as males (Robinson, Lichtenstein, Anckarsäter, Happé & Ronald, 2013). In other words, the degree of aetiological risk needed to produce behavioural expressions of autism in males does not produce the same behavioural expression in females. This has led some researchers to speculate about a resilience factor shared amongst females (Hull & Mandy, 2017). According to the female protective effect, males are more likely than females to be autistic and the gender ratios observed in the autistic population reflect reality (Hull & Mandy, 2017).

2.3.2. The female autism phenotype

The female autism phenotype refers to the idea that diagnostic biases and gender-specific behavioural manifestations of autism contribute towards poor recognition and identification of autism in females, leading to late or missed diagnosis (Hull, Petrides & Mandy 2020). The female autism phenotype hypothesis argues that despite experiencing difficulties in the core characteristics of autism (i.e., social communication and interaction, and restricted and repetitive patterns of behaviours, interests, or activities), the presentation of these characteristics may be qualitatively different in males and females. In their narrative review of the female phenotype of autism, Hull et al. (2020), proposed four key areas of difference for autistic females: 1) autistic females tend to find it harder to maintain long-term friendships, 2) they are more likely to have age and gender appropriate special interests, 3) they are at increased risk of experiencing internalising problems including anxiety, depression, self-harming and eating disorders, and 4) they may engage in camouflaging behaviours to minimise the appearance of autistic traits. However, because autism was traditionally perceived as something that affected males, and a significant proportion of the research was conducted with male samples, it is argued that diagnostic tools are not always sensitive for identifying female expressions of autistic behaviours (Dworzynski et al, 2012; Hull & Mandy, 2017; Kreiser & White, 2014). According to the female phenotype of autism, current gender ratios in autism are an underestimation of the true prevalence of autistic females (Hull & Mandy, 2017).

2.4. Gender differences in the core features of autism

2.4.1 Restricted and repetitive patterns of behaviours, interests, and activities

Clinical descriptions of restricted and repetitive patterns of behaviours, interests, and activities in autism, highlight a diverse range of distinct yet related behaviours (APA, 2013; WHO, 2022). These include stereotyped behaviours, sameness behaviours, restricted interests, repetitive play, self-injurious behaviours, and sensory seeking or avoidance behaviours (APA 2013; WHO, 2022). When considered as an overall domain category, research exploring gender differences yields inconsistent findings. Whilst some argue that there is no evidence to support gender differences in restricted and repetitive behaviours,

others suggest that autistic females present with fewer needs in this area (Allely, 2019). Advocates of the female autism phenotype propose that the content and expression of restricted and repetitive behaviours may distinguish autistic males and females, more so than their severity and frequency. For example, autistic females are suggested to have interests more typical for their age and gender, to engage with these interests in ways that are deemed socially appropriate, to exhibit greater obsessional behaviour, to display more self-injurious and compulsive behaviours, and to present with fewer repetitive stereotyped behaviours relative to autistic males (Antezana et al., 2019; McFayden, Albright, Muskett & Scarpa, 2019; Mandy et al., 2012; Uljarevic et al., 2022). It might therefore be considered that gender differences in restricted and repetitive behaviours, interests, and activities emerge more strongly when looking at sub-domains of behaviour (McFayden, Antezana, Albright, Muskett, & Scarpa, 2020).

2.4.2 Social communication and interaction

A systematic review of research examining gender differences in the overall severity of social communication and interaction needs experienced by autistic males and females reported no significant differences (Wijngaarden-Cremers et al., 2014). However, when gender differences in social communication and interaction are explored at the sub-domain level (e.g., peer relationships, play behaviours, social attention, social reciprocity), as opposed to the broad construct level, autistic females are suggested to have significantly better and more advanced skills than their male counterparts (Wood-Downie, Wong, Kovshoff, Cortese & Hadwin, 2021). This may be understood in terms of autistic females' ability to mimic the social behaviours of non-autistic females and to camouflage any difficulties they might experience (Dean, Harwood & Kasari, 2017; Hull et al., 2020). However, challenges maintaining friendships and managing conflict are a defining feature of the female autism phenotype, and considered indicative of their social communication and interaction needs (Hull et al., 2020).

In recognising that autistic females may superficially demonstrate better social skills than autistic males, it is plausible to assume that their needs in this area may be overlooked (Dean et al., 2017; Hull et al., 2020; Wood-Downie et al., 2021). However, given the challenges autistic females are reported to experience in their interpersonal relationships, it may be

considered that intervention to promote their social development is warranted. Supporting autistic females to navigate their social relationships may subsequently have positive implications for their mental health and wellbeing; something which has been identified as often compromised for this population (Hull et al., 2020; Mertika, Mitskidou, & Stalikas, 2020). Whilst it may be considered that restricted and repetitive behaviours (e.g., special interests) can affect peer relationships (e.g., by monopolising conversations), there is considerably less research and understanding about interventions that specifically target this core feature of autism (Boyd, McDonough & Bodfish, 2012). Some research also reports "spill-over" effects from interventions that aim to promote social engagement, on restricted and repetitive behaviours (Lee, Odom & Loftin, 2007). For these reasons, and the notion that social skills are deemed to be malleable and susceptible to change (Carter et al., 2014; Junge, Valkenburg, Deković & Branje, 2020), social communication and interaction as a central component of the female phenotype of autism, is the primary focus of this review.

3. <u>Social Communication and Interaction</u>

3.1. A socio-cultural perspective: The role of gender in social communication and interaction

Differences in social communication and interaction are a core behavioural feature of autism (APA, 2013; WHO, 2022). However, in acknowledging the influence of socio-cultural and gendered norms and expectations on social behaviour (Ridgeway & Correll, 2004), it is important to consider how these may contribute towards autistic males' and females' experiences. In their critical review of research exploring gender differences in peer relationships, Rose and Rudolph (2006) reported some consistent findings for variations in the structure and content, social-cognitive styles, and stress and coping processes that characterise youths' interactions. Research suggests that girls tend to engage in more social conversation and self-disclosure, favour connection, and receive greater emotional provisions (e.g., closeness, affection, nurturance, trust, security, validation, acceptance, enhancement of worth) in their friendships, relative to boys. They are also thought to be more sensitive to others' distress, their status amongst peers, and to co-ruminate in response to stress. In contrast, boys have been found to interact in larger social groups, engage in more competitive

and rough-and-tumble play, and to emphasise the importance of agentic and dominance-oriented goals. They are also more likely than girls to experience physical and verbal aggression in their interactions and to respond to stress by using humour.

Research exploring autistic individuals' social interactions has also highlighted the role of socio-cultural determinants of behaviour and discussed how these may contribute towards the way in which difficulties experienced in social communication and interaction may be perceived and understood. For example, Dean et al. (2017) conducted school playground observations of autistic and non-autistic primary school pupils and used three different behavioural codes to categorise children's play activities (i.e., game, joint engagement, and solitary). They found that non-autistic boys spent more time playing games than any other group and tended to be physical in both their structured and non-structured play. In contrast, the most salient behaviour observed for autistic boys was solitary play. Regardless of their autistic status, girls were most frequently observed in joint engagement activities (particularly talking) and weaving between activities. In addition to supporting gender differences in the social engagement and play activities of boys and girls, the findings suggest that the social landscape of males is more conducive to exposing the social challenges experienced by autistic boys, unlike the female social landscape which lends itself favourably to concealing any potential social challenges experienced by autistic girls. The autistic boys' social behaviour (i.e., solitary play) looked very different to the non-autistic boys' social behaviour (i.e., games), whereas the autistic girls' social behaviour presented very similarly to the non-autistic girls' social behaviour (i.e., joint engagement). One limitation of this study, however, is that social behaviours were not explored across development and therefore, the findings may not generalise to adolescent pupils in secondary school.

3.2. A developmental perspective: Social communication and interaction in adolescence

Adopting a developmental perspective to social communication and interaction is arguably important because noticeable shifts in peer relationships and friendships occur across the lifespan (Rubin, Bowker, McDonald & Menzer, 2013). As playmates and acquaintances evolve into more intimate companions, and autonomy and independence from family members becomes more important, investment in peer relationships and friendships becomes greater (Bornstein, Jager, Steinberg, 2012; Rubin et al., 2013). However, adolescence can be

perceived as a potentially turbulent time for peer relationships as there is often an increasingly complex culture that requires an understanding of evolving social rules and expectations and changing social dynamics (Cridland, Caputi, Jones & Magee, 2014a). There is also a heightened desire to fit in with peers and an increased likelihood for individuals to perceive themselves as different (Cridland et al., 2014a). For these reasons, the teenage years arguably pose some of the greatest challenges for autistic pupils, who are already recognised to experience differences in social communication and interaction (Cridland et al., 2014a).

High quality friendships are considered crucial for the adjustment of adolescents and are associated with a range of positive outcomes including increased self-esteem, and fewer internalising (e.g., anxiety, depression, withdrawal) and externalising behaviours (e.g., delinquency, aggression; [Hiatt, Laursen, Mooney & Rubin, 2015; You & Bellmore, 2012]). Similar findings have been reported within the literature looking at the friendship quality of autistic adolescents. Lower quality friendships, which are characterised as being low in positive friendship features (e.g., help, intimacy, security, trust, companionship, closeness etc.) and high in negative friendship features (e.g., conflict, betrayal, dominance etc.) are associated with increased feelings of loneliness, anxiety, and depressive symptoms (Chang, Chen, Huang & Lin, 2019; O'Connor, van den Bedem, Blijd-Hoogewys, Stockmann & Rieffe, 2022; Whitehouse, Durkin, Jaquet & Ziatas, 2009). However, it should be acknowledged that the research outlined above did not determine causational relationships, and so it is important to consider that an individual's depressive or anxiety symptoms may also affect the quality of their friendships. This may be especially pertinent when thinking about autistic female adolescents given that they often experience internalising difficulties (Hull & Mandy, 2017). For example, it may be reasonable to assume that autistic females' experiences of anxiety may negatively impact the quality of their friendships; as well as challenges in interpersonal relationships contributing towards their anxiety.

4. Autistic Females' Experiences During Adolescence

Research suggests that gender and age are influential factors in the social experiences of children and young people, including those diagnosed as autistic (Dean et al., 2017; Rose & Rudolph, 2006; Rubin et al., 2013). Adopting a gendered, developmental perspective may therefore be important for furthering our understanding of how female autistic adolescents experience their peer relationships and friendships.

4.1. A desire for friendship

It was apparent from autistic females' accounts of their experiences that most of them were motivated and wanted to have friendships (Cook, Ogden & Winstone, 2018; Foggo & Webser, 2017; Milner, McIntosh, Colvert & Happé, 2019; Myles, Boyle & Richards, 2019; Tierney, Burns & Kilbey, 2016; Ryan, Coughlan, Maher, Vicario & Garvey, 2021). A desire to fit in, share experiences and participate in social activities typical for their age and gender such as shopping, sleepovers, and parties, was perceived by some adolescent participants as important (Cook et al., 2018; Foggo & Webster, 2017; Sedgewick, Hill & Pellicano, 2019). However, other autistic females reported confusion around socio-cultural gender norms and chose not to adopt them (Milner et al., 2019). Close friendships were identified by autistic girls as contributing towards their happiness and for providing emotional and social support, particularly in the school environment (Foggo & Webster, 2017; Myles et al., 2019; Sedgewick et al. 2019; Tierney et al., 2016). Desired characteristics in a friend included loyalty, trust, and respect (Foggo & Webster, 2017; Ryan et al., 2021). Whilst it was acknowledged that online friendships were sometimes easier, there was a unanimous preference for real life over online friends from participants (Ryan et al., 2021).

4.2. Being surrounded by boys

Given that autism is a diagnosis associated primarily with males, autistic females may be considered 'surrounded by boys', for example in social and intervention groups (Cridland, Jones, Caputi & Magee, 2014b). Autistic girls' experiences of their interactions and friendships with boys were mixed. Some autistic females reported having male friends and felt that boys

were easier to get along with compared to girls as their interactions with males were primarily built around common interests (Cridland et al., 2014b; Ryan et al., 2021). Differences in the communication style of boys and girls (i.e., clearer communication from boys) was also reported to make interacting with males more favourable for some autistic females (Milner et al., 2019). In contrast, for autistic girls who did not share interests in what might be perceived as traditionally boys' activities, there was a sense of being different; different from autistic boys and different from non-autistic girls (Cridland et al., 2014b). Some autistic girls also expressed feelings of anxiety and mistrust around boys, although Ryan et al. (2021) were mindful that this may reflect some girls' experiences of attending all-girls schools.

4.3. Social communication and interaction skills

It is suggested that autistic females demonstrate some understanding of friendship and the skills required to engage socially with their peers. Ryan et al. (2021) found that autistic girls recognised the importance of friendships transcending contexts and had some knowledge of how to initiate social interactions, for example by identifying and talking about shared interests. An awareness of reciprocity in friendship, in terms of communication and mutuality in feelings and respect for one another, was also demonstrated by some participants (Foggo & Webster, 2017). However, others relied on external support, for example from parents, to help them to make friends (Tierney et al., 2016). Navigating and communicating in groups was a common challenge experienced and was often associated with feelings of social exclusion for the girls (Foggo & Webster, 2017; Milner et al., 2019; Myles et al., 2019; Tierney et al., 2016). Having one or two close friendships was often a preference for this reason (Myles et al., 2019; Sedgewick et al., 2019). Engagement in age-appropriate social activities such as texting and social media was also identified as something that autistic girls found challenging and often chose not to participate in (Ryan et al., 2021; Tomlinson, Bond & Hebron, 2022). Some parents attributed their daughters' poor perspective taking skills as contributing to the challenges they experienced in their social interactions with peers (Cook et al., 2018). Lacking confidence in social situations and concerns about knowing what to say and how to behave were reported by some adolescent participants as areas in which they experienced challenge (Myles et al., 2019; Tomlinson et al., 2022).

4.4. Complexity of adolescent relationships

Challenges developing and maintaining friendships with their non-autistic female peers was evident for many autistic girls (Cook et al., 2018; Cridland et al., 2014b; Foggo & Webster, 2017; Ryan et al., 2021; Tomlinson et al., 2022). There was a sense that they did not always fit in with gender expectations, for example in terms of their appearance, interests, and communicative styles, and that this served as a barrier for them making friends (Foggo & Webster, 2017; Milner et al., 2019; Tierney et al., 2016). Adhering to social norms was perceived as important for experiencing a sense of belonging and acceptance in school (Myles et al., 2019). Some of the mothers perceived their daughters' friendship difficulties to be greater than those experienced by male autistic adolescents, and this was in part attributed to hobbies forming the basis of male relationships, more so than female relationships (Cridland et al., 2014b). Some autistic girls also felt that it was more difficult for them to be accepted by their same gender non-autistic peers, relative to autistic males (Milner et al, 2019). Parents reported a growing divergence between expectations of friendships and social skills in non-autistic and autistic females as individuals matured into adolescence (Cook et al., 2018). This was also acknowledged by some of the girls themselves (Tomlinson et al., 2022). For many, transitioning from primary to secondary school was perceived as the catalyst for their friendship difficulties (Cridland et al., 2014b; Milner et al., 2019; Tierney et al., 2016). Developmental changes in social expectations such as unspoken changes in social etiquette and increased demands on social communication skills, were thought to exacerbate challenges experienced by autistic girls during adolescence (Myles et al., 2019; Tierney et al., 2016; Ryan et al., 2021). Tierney et al. (2016) suggest that the latter is a gender-specific difficulty as the norms and expectations of males and females in adolescence differ.

4.5. Conflict in relationships

The conflict autistic girls experience in their relationships is thought to be understood both in terms of the challenges they experience in their social communication and interaction and in terms of the typical patterns of friendship females experience during adolescence (Cook et al., 2018; Sedgewick et al., 2019; Ryan et al., 2021). According to Sedgewick et al. (2019) both male and female autistic adolescents experience more conflict in their friendships than their non-autistic peers, but the type of conflict is different, with female autistic adolescents

experiencing more relational conflict (e.g., gossiping, 'silent treatment', eye rolling) than any other group. Relational conflict was also identified by Ryan et al. (2021) as a type of conflict autistic girls experienced, in addition to experiences of being left behind when their friends made new friends. Whereas non-autistic girls report employing a joint problem-solving approach to conflict, some autistic girls describe an 'all-or-nothing' approach, which typically involves them either acting as peace maker, taking sole responsibility, and apologising, or ending the friendship entirely (Foggo & Webster, 2017; Sedgewick et al., 2019). Regular falling outs and leaving and re-forming friendship groups were experiences reported by the autistic girls attending mainstream settings (Cook et al., 2018; Foggo & Webster, 2017). Friendship loss was described as a distressing experience for this population of pupils, although some perceived it to be an inevitable part of friendship (Ryan et al., 2021). Support from school staff to manage conflict in peer relationships was thought to be helpful (Tomlinson et al., 2022).

4.6. Camouflaging behaviours

Imitation and masking were identified as social coping strategies employed by autistic females (Milner et al., 2019; Tierney et al., 2016). Parents talked about their daughters' attempts to hide their autistic behaviours to try and fit in and conceal their differences (Cook et al., 2018; Tomlinson et al., 2022). It was felt that because the girls often masked their needs, they tended to appear able to cope in social situations (Cook et al., 2018; Cridland et al., 2014b; Milner et al., 2019). Some girls associated adapting their behaviour to mirror their peers' behaviour with positive social outcomes (Myles et al., 2019). However, for many, such masking behaviours were associated with increased stress and anxiety, mental health repercussions and poor psychological wellbeing (Cook et al., 2018; Tierney et al., 2016; Tomlinson et al., 2022). The idea that maintaining friendships is effortful and exhausting for autistic girls was a common experience and having time alone to de-stress was perceived as important (Foggo & Webster, 2017; Sedgewick et al., 2019; Tierney et al., 2016).

4.7. Implications for intervention

Having first-hand accounts of the experiences of female autistic adolescents is useful for gaining an insight and understanding of their social experiences and needs, and for informing

more meaningful and specific interventions (Cook et al., 2018; Foggo & Webester, 2017; Ryan et al., 2021). Many of the friendship and conflict experiences autistic girls report are more like those of non-autistic females than autistic or non-autistic boys (Sedgewick et al., 2019). Both autistic and non-autistic girls place importance on having a few close friends, consider friends to provide social and emotional support, express a desire to fit in, have arguments with their friends, and experience insecurity in their friendships. This has led some researchers to argue that gender (i.e., being female) is perhaps more important than diagnostic status (i.e., being autistic) when thinking about how to effectively support autistic females in their social relationships (Sedgewick et al., 2019). Using developmental frameworks in interventions is also recommended to reflect the unique challenges experienced during the teenage years (Foggo & Webster, 2017; Tierney et al., 2016). The inclusion of social skills interventions for girls, and female-specific activities are considered important to help this population of pupils navigate the complexity of female friendships during adolescence (Cridland et al., 2014b; Tomlinson et al., 2022). However, it appears that such recommendations do not always translate into practice.

4.8. Experiences of support

In a survey of autistic women's (*n*=82) retrospective experiences of education in Australia, 77% reported that they did not feel that they received enough support to make friends and develop their social skills. The proportion of autistic women that indicated that they had received inadequate social support at school was significantly higher than the proportion of autistic men (Baldwin & Costley, 2016). Similar dissatisfaction was reported in a more recent study by Fowler and O'Connor (2021) in Ireland. Mothers of autistic daughters reported that the services offered to their daughters were inappropriate for meeting their needs. Reasons given by the mothers as to why they felt services were inappropriate included a tendency for service delivery and design to have a male bias, or to target younger autistic children. A lack of girl-specific support in educational settings was also a concern raised by mothers of autistic girls in England (Gray, Bownas, Hicks, Hutcheson-Galbraith & Harrison, 2021).

In an attempt to capture the support available for autistic females in schools, Gray et al. (2021) conducted a survey with fifty-three Special Educational Needs Co-Ordinators (SENCo) in one local authority in England. Respondents were from early years (*n*=10), primary school

(*n*=34) and secondary school (*n*=9) settings. In response to a question asking about what types of support settings would ordinarily put in place for autistic girls, 85% of participants' responses were grouped under the category 'generic ASD support'. In contrast, only 5% of participants' responses were considered 'girl specific support'. When asked about what help they felt they needed from the local authority to identify and support autistic girls, 83% of participants responded, 'strategies and intervention'. One limitation of this study, however, is that participants' responses were not reported with respect to the type of educational setting and so conclusions cannot be drawn about the support needs and opportunities for autistic girls at different stages of their school career. Details were also not given about the nature of the support provided and therefore, it is unclear whether respondents were referring to specific interventions or more general aspects of support in school for example, learning support assistants.

5. Interventions for Autistic Adolescents

In recognising the importance of social interaction and peer relationships for autistic adolescents, considerable attention has been given to how best to provide opportunities and support the social development of this population (Carter et al., 2014).

5.1 Cultural context of research

Most studies investigating social skill and friendship interventions for autistic adolescents derive from the United States. International research has also often focused on adapting interventions from America. Given that social skills are defined in the context of social and cultural variables (Radley & Dart, 2022), consideration of the cultural context of the research is important. For example, it might be considered that there are different cultural expectations for what constitutes appropriate social norms and behaviour in individualistic, Western societies, that may not be wholly appropriate for, sensitive to, or prioritised in collectivist cultures. In addition to possibly influencing what skills may be deemed beneficial to develop through intervention, varying cultural beliefs about the origin of autism and how it is viewed in society, may be associated with the availability of, decision-making around, and

approaches to interventions (Hebert & Koulouglioti, 2010; Kim, 2012). When thinking about why a significant proportion of the research is conducted in America, it might be helpful to consider the possible influence of biomedical models, the emphasis on individualism, research priorities and funding streams.

5.2. Types of interventions

Interventions that aim to promote social skills and friendships for autistic adolescents can be broadly categorised into two types: 1) explicit social skills teaching, and 2) implicit social skills teaching.

5.2.1 Explicit social skills teaching

Within the literature, explicitly teaching social skills was the most common type of intervention for promoting autistic adolescents' social development and friendships. Social skills programmes mostly followed a set curriculum and were delivered on a group basis. They generally focussed on teaching aspects of non-verbal and verbal communication, social interaction and social problem solving but varied in their specific content, duration, setting, delivery, and goals. This was largely because of differences in the frameworks and theories underpinning the interventions. There were also differences in the make-up of the social skills groups, with some interventions including autistic participants only (MacKay, Knott & Dunlop, 2007; Murphy, Radley & Helbig, 2018; Stitcher et al., 2010; Ko, Miller & Vernon, 2019), some involving non-autistic peers (Bauminger, 2002; Matthews et al, 2018; White, Koenig & Scahill, 2010), and others including concurrent parent groups (Laugeson, Frankel, Mogil & Dillon, 2009; Laugeson, Frankel, Gantman, Dillon & Mogil, 2012). Most of the social skills programmes were clinic or community based. However, online and virtual platforms have also recently been piloted as a means for delivering social skills interventions to autistic adolescents (Gwynette et al., 2017; Stitcher, Laffey, Galyen, & Herzog, 2014).

5.2.2. Implicit social skills teaching

Implicitly teaching social skills often involves capitalising on the specialised interests of autistic individuals and offering increased opportunities for them to engage with peers who share these interests. For example, LeGoff (2004) pioneered LEGO© play as a medium for social skills intervention for autistic youths in America, after noticing that LEGO© was inherently motivating for this population. Levy and Dunsmuir (2020) added to the research on LEGO© based interventions by exploring its impact on adolescents' social skills in the UK. Other research has incorporated autistic adolescents' special interests into school lunch time clubs in attempt to improve their engagement with peers (Koegel, Koegel & Schwartzman, 2013), or increased their peer networks by providing meaningful opportunities for pupils to interact with peers identified as having similar hobbies (Sreckovic, Hume & Able, 2017). Summer camp models have also been utilised (Kaboski et al., 2015). Other interventions that teach autistic adolescents social skills implicitly, use activities that are interactive in nature, such as acting and drama, as a context for promoting social development (Corbett et al., 2011, 2014, 2016, 2019; Lerner, Mikami & Levine, 2011). Another, more alternative approach involves modifying the social status of autistic individuals, for example by providing them with skills perceived as valuable by their peers (Chiang, Lee, Frey & McCormick, 2004).

5.3. Considerations in intervention content

5.3.1 Personalised goals

A minority of the social skills interventions that followed a set curriculum designed to address the global social communication and interaction needs of autistic participants, also included scope for identifying and working towards personally meaningful social objectives or targets (Afsharnejad et al., 2021; Jamison & Schuttler, 2017; Ko et al., 2019; Ko, Schuck, Jimenez-Muñoz, Penner-Baiden & Vernon, 2022; White et al., 2010). For example, White et al. (2010) used observational data and parent feedback to include two or three prosocial target behaviours and one or more problem behaviours into individual participants' intervention plans, which were then integrated within curriculum modules and revised throughout the course of the intervention, depending on progress. A similar approach was adopted by Ko et

al. (2019) whereby consensus for an individualised target behaviour was reached after autistic adolescents, their parents, and a clinician independently ranked from a list of possible skills, what they perceived to be the three most prominent social vulnerabilities. Participants were then taught self-management strategies to monitor their use of their target behaviour during intervention sessions. Another method used in interventions to support autistic adolescents to establish and monitor their progress towards personally meaningful social goals involved Goal Attainment Scaling, whereby participants were encouraged to reflect on their performance and the degree to which they achieved the expected level of progress in their chosen skills (Afsharnejad et al., 2021).

5.3.2 Cultural adaptations

The most extensively researched group-based social skills interventions developed in America have been adapted to reflect cultural differences in etiquette and societal customs for adolescents worldwide, including in Korea (Yoo et al., 2014; Hong et al., 2019), Israel (Rabin, Israel-Yaacov, Laugeson, Mor-Snir & Golan, 2018; Rabin, Laugeson, Mor-Snir, & Golan, 2021), Hong Kong (Shum et al., 2019), The Netherlands (Idris et al., 2020), Japan (Yamada et al., 2020), and Australia (Afsharnejad et al., 2021). The overall structure and delivery of the interventions tended to remain the same, but some aspects of the content were amended to be more culturally and linguistically relevant for adolescents growing up in different countries. Examples of cultural adaptations included the names of different peer groups, cliques, and crowds in school, social activities and social networking sites, and aspects of humour or jokes (Idris et al., 2020; Rabin et al., 2018; 2021; Shum et al., 2019; Yamada et al., 2020; Yoo et al., 2014). In Hong Kong, concurrent parenting sessions were also adapted to include role play and rehearsal exercises, as some Chinese parenting practices were not considered conducive to social coaching (Shum et al., 2019).

5.3.3. Gender-specific content

Of the interventions that explicitly taught autistic adolescents social skills via a set curriculum, only one was specifically tailored to meet the needs of female autistic adolescents (Jamison & Schuttler, 2017). Most interventions did not differentiate between genders and the same

social skills curriculum was delivered to both male and female autistic participants. When social skills were taught implicitly, any differentiation in intervention content was usually associated with the interests of individual participants as opposed to their gender per se (Koegel et al., 2013). However, it is perhaps worth noting that many of the studies exploring implicit social skills teaching included all male samples, meaning that there may have been fewer opportunities to vary the intervention content in response to the gender of participants (Chiang et al., 2004; Kaboski et al., 2015; Levy & Dunsmui, 2020; Sreckovic et al., 2017). A model of a social skills curriculum designed for autistic females is presented below.

The Girls Night Out Model

The Girls Night Out Model is a peer-mediated, group-based social skills and self-care curriculum specifically designed for autistic adolescent females (Jamison & Schuttler, 2017). Intervention sessions occur in age-appropriate community settings (e.g., fitness centre, salon) or at home (e.g., "getting ready" with friends prior to a social event), over the course of 12-16 weeks, with weekly 2-hour sessions. In the hope that the intervention would target socially valid behaviours related to the social norms of this population, female adolescents were involved in designing the curriculum. It focuses on three core areas:

1. *Relating to others* aims to address the heightened focus on conversation, relationship building and shared interests that occur during teenage female relationships. Concepts promoted in this aspect of the curriculum include making social plans and offering emotional support, including giving and receiving compliments.

2. *Self-care* focuses on building participants' independence and competence in completing self-care tasks, in attempt to increase their confidence and improve their self-perceptions. Areas targeted in this aspect of the curriculum include choosing appropriate clothing and body care and hygiene, both of which are tailored to individuals' needs and wants.

3. *Self-determination in social competence and self-perception* involves working with participants and their parents to encourage individual goal setting and monitoring, by eliciting personal strengths and areas for growth. Opportunities are then provided to practice meaningful social and self-care skills.

Preliminary evaluations of The Girls Night Out Model used parent and self-reported measures of social competence, self-perception, and quality of life, from five cohorts of participants (n=34) over a 4-year period, at baseline and 1-week post-intervention. Initial findings showed that participants' self-reporting of social competence and quality of life (which included social relationships) were significantly improved. However, there was inconsistency in parent and self-reported measures, with parents only reporting minimal or moderate improvements. The long-term maintenance of intervention effects has not yet been explored.

Whilst the Girls Night Out Model attempts to address individual needs through personalised goal setting and monitoring, it could be argued that a curriculum designed to promote social behaviours deemed valid by non-autistic female adolescents perhaps minimises autistic females' social experiences and needs. It might also be considered that such a curriculum is possibly inappropriate for autistic females who may choose not to conform with gender norms (Milner et al., 2019). Conversely, increasing autistic females understanding of gender expectations, be may beneficial as some autistic female adolescents express a desire to participate in social activities typical for their age and gender, and perceive adhering to social norms as important for experiencing a sense of belonging (Cook et al., 2018; Foggo & Webster, 2017; Myles et al., 2019; Sedgewick et al., 2019).

5.4. Gender differences in response to interventions

Whilst there is a plethora of research examining interventions that promote the development of social skills and friendships for autistic adolescents, very few studies specifically aim to explore differences in autistic males' and females' response to such interventions. Of the literature generated from the systematic search, only three studies investigated gender differences in autistic adolescents' response to intervention. All of these focussed on the effect of group-based, explicit social skills teaching as opposed to implicit social skills interventions. The only implicit social skills intervention to comment on gender differences was LeGoff et al. (2004), who reported differences in the way in which autistic males and females engaged in LEGO© play. However, given that exploring gender differences was not the aim of the research, this was not explored in detail.

Possible reasons for why gender differences have not been at the forefront of social skills intervention literature may relate to challenges in recruiting sufficient numbers of eligible female autistic participants, and suitably matching them on characteristics such as age, intelligence quotient, and language ability (Kaboski et al., 2015). Difficulty recruiting large samples of female autistic participants may also have implications for making statistically meaningful comparisons (Shefcyk, 2015). Moreover, it is important to acknowledge that interest in the unique presentation and needs of autistic females may be considered a relatively new development within autism research and therefore, there may not have been as much awareness of this previously. For example, it was only within the last decade that a greater focus on women and girls was identified as a research priority by key stakeholders in the field (Pellicano, Dinsmore & Charman, 2014).

5.4.1. Gender differences observed at baseline

The socialisation profiles of male and female autistic adolescents prior to intervention suggest that there may be some similarities and differences in their presentation and needs. For example, both McVey et al. (2017) and Ko et al. (2022) found no significant effects of gender on parent reported social skills as measured by the Social Responsiveness Scale and the Social Skills Improvement System, suggesting that social communication and interaction differences are perceived by parents to affect male and female autistic adolescents equally. However, Ko et al. (2022) did find a significant effect of gender on parental ratings of participants' social competency, with parents of autistic daughters reporting higher ratings of social competence relative to parents of autistic sons, which may reflect girls' engagement in masking behaviours. In terms of self-report measures, no gender differences were observed by McVey et al. (2017) in participants' ratings of their social skill knowledge and direct social contacts (i.e., hosted and invited get-togethers). However, Ko et al. (2022) found that female participants' perceptions of their social skills were lower than their male counterparts, which may suggest that girls perhaps have a greater awareness of social expectations or may be more self-critical and underestimate or be less confident in their use of social skills. Observational data collected at baseline during a conversation with a peer partner revealed no significant differences in autistic males' and females' social behaviour, including question asking, turn-taking, listening, facial expressions, and eye contact (Ko et al., 2022). Gender

differences were observed, however, in the amount of time spent alone or interacting with a group of peers. According to McMahon, Vismara and Solomon (2013) autistic males spent significantly less time interacting with a group of peers and more time alone, compared to autistic females prior to intervention.

5.4.2. Gender differences observed post-intervention

Post-intervention, the pattern of improvements for participants' social development were generally similar for male and female autistic adolescents. Parents of autistic sons and daughters both reported increases in their children's social skills after a period of intervention, with no significant gender differences observed (McVey et al., 2017; Ko et al., 2022). Self-reported measures of participants' social skills knowledge, direct social contacts, and observations of time spent interacting with a group of peers also increased over time, with no significant gender effects (McMahon et al., 2013; McVey et al., 2017). Increases in social competency and motivation were demonstrated for both autistic males and females, although the gains in females' self-reported social competency were larger, perhaps because there was greater room for improvement (Ko et al., 2022). Female participants were also observed to ask significantly more questions during a conversation with a peer partner relative to male participants, post-intervention (Ko et al., 2022). Taken together, it may be considered that these studies suggest that gender does not appear to be predictive of participants' responses to intervention, arguably lending some support to the effectiveness of explicitly taught, group-based interventions, where male and female autistic adolescents follow the same social skills curriculum.

5.4.3. Limitations of the research

Research exploring gender differences in autistic adolescents' responses to social skills intervention is in its infancy, and despite potentially promising results, it is important to acknowledge the possible limitations of the studies conducted to date. For example, McMahon et al. (2013) did not include a control group and therefore it is difficult to ascertain whether the increases in group interactions observed overtime can be attributed to intervention effects or to increased familiarity and time spent with other participants in a

supportive environment. Other possible shortcomings include the relatively small sample size of female to male participants, which may limit the generalisability of the findings (McVey et al., 2017; Ko et al., 2022). It might also be considered that important informants were missing from the studies because school staff and peer-reported measures were not included. This may mean that intervention effects may not extend to other settings, such as school (McMahon et al., 2013). The inclusion of school staff and peers may be helpful in gathering additional information about autistic adolescents' social and friendship skills because they can offer insight from a different context, and in relation to other pupils of the same age and gender.

6. <u>Relevance for Educational Psychologists</u>

The relevance of the research for EPs' practice is discussed in relation to the regulations and values that govern the profession, in addition to the core skills required.

6.1. Legislation and guidelines

The professional practice of EPs in the UK is overseen by several legal obligations and guidelines outlined by professional bodies including the British Psychological Society (BPS, 2017) and the Health and Care Professions Council (HCPC, 2015). In the context of the current literature review, it might be considered that some of the standards of proficiency stipulated by the HCPC are particularly relevant. This includes EPs being "aware of the impact of culture, equality and diversity on practice" and being "able to practice in a non-discriminatory manner" (HCPC, 2015, p.8-9). Given that autistic females often experience missed or late diagnosis, it might be considered that they face inequalities and discrimination in terms of timely recognition of their needs and access to appropriate support and intervention (Hull et al., 2020; Russell et al., 2022; Shattuck, et al., 2009). To enhance EPs' practice, it might therefore be suggested that EPs need to understand how gender, age and intellectual ability may impact female expressions and rates of autism diagnosis (Fombonne, 2009; Loomes et al., 2017; Russell et al., 2022; Shattuck et al., 2009). For example, by acknowledging that

autistic girls perhaps have a greater ability to mask any challenges they may experience (Cook et al., 2018; Dean et al., 2017; Hull et al., 2020; McMahon et al., 2013; Milner et al., 2019; Tierney et al., 2016; Tomlinson et al., 2022). Maintaining an ethical awareness and reflecting on potential gender biases they may hold as practitioners is necessary for EPs to uphold their standards of proficiency. It also ensures adherence to The Equality Act (2010), which protects against unfair treatment for nine characteristics; one of which is gender.

Most of the research generated by the systematic search of the literature focussing on social skills and friendship interventions for autistic adolescents originated from America. Acknowledging possible cultural differences, for example in terms of the context in which interventions took place (i.e., community and clinic settings) may have implications for EPs in the UK since there are likely to be factors associated with school systems (e.g., time, finances, expertise) that may impact the feasibility and implementation of such interventions (Gray et al., 2021; Morewood, Tomlinson & Bond, 2019). EPs may therefore need to work systemically and think together with school staff to consider how positive change might be facilitated for autistic girls via interventions in a school setting. The scant research exploring gender differences in response to social skills intervention also arguably holds importance for EPs in terms of their evidence-based practice as the impact of such interventions for the social development of female autistic adolescents specifically, remains largely unknown. (McMahon et al., 2013; McVey et al., 2017; Ko et al., 2022).

6.2. Professional values

According to the United Nations Convention on the Rights of the Child (UNCRC, 1990), every child has the right to an education that develops their personality, talents, and abilities. This notion is arguably central to the work of EPs, whose goal is to achieve effective inclusion and positive outcomes for all pupils (Beaver, 2011). However, research suggests that the education female autistic adolescents receive, to support them to develop their social and friendship skills, may be inadequate due to it often being based on understandings of a male phenotype of autism or targeting younger pupils (Baldwin & Costley, 2016; Fowler & O'Connor, 2021; Gray et al., 2021). Yet, there appears to be only one intervention within the literature that attempts to specifically target the needs of female autistic adolescents (Jamison & Schuttler, 2017).

Given that autistic females' experiences of support are often unsatisfactory (Baldwin & Costley, 2016; Fowler & O'Connor, 2021), EPs may wish to seek to positively impact service users' experiences by including autistic girls and their families in decisions regarding the support they receive. A collaborative, joint problem-solving approach to working, for example through consultation, may therefore be beneficial (Wagner, 2016). In addition to including service users in decision making, consultation allows EPs to explore the views different people may have of the situation (Ravenette, 2003; Wagner, 2016). This may be especially relevant when working with autistic girls as there may be differences in their own and their parents' perceptions of their social skills and competence (Ko et al., 2022). Consultation also provides EPs with an opportunity to offer individuals alternative ways of viewing behaviour (Ravenette, 2003), which, in the context of autistic girls may involve the concept of masking or camouflaging (Hull et al., 2020). Introducing this perspective may be helpful since autistic girls are often perceived to cope in social situations, despite research suggesting that maintaining friendships can be effortful and exhausting for this population (Cook et al., 2018; Cridland et al., 2014b; Foggo & Webster, 2017; Milner et al., 2019; Sedgewick et al., 2019; Tierney et al., 2016). Finally, given that some autistic girls may demonstrate some knowledge of the skills required to engage socially with their peers (Foggo & Webster, 2017; Ryan et al., 2021), consultation may be valuable for recognising individuals' strengths, gaining an understanding of, and building on the skills individuals have already developed (Wagner, 2016).

Another central value that EPs hold is ensuring that the views and feelings of children and young people are heard (BPS, 2017). Given that qualitative accounts of female autistic adolescents' experiences in school suggest that they often have a desire for friendship, it might be considered important that EPs advocate for this. Findings that suggest that high quality friendships are influential in the psychosocial adjustment of autistic and non-autistic adolescents, perhaps provide further motive for EPs to promote change in this area (Chang, Chen, Huang & Lin, 2019; Hiatt, et al., 2015; O'Connor et al., 2022; Whitehouse et al., 2009; You & Bellmore, 2012). However, in recognising that constructs of friendship may differ between individuals, EPs may want to further explore autistic females' personal meanings of friendship to ensure that positive change is initiated in the direction of individuals' desired goals (Kelly, 2003). This may have subsequent implications for monitoring change and evaluating progress as social objectives or targets will likely vary.

6.3. Core skills

When thinking about assessment and identifying needs, EPs may want to use their knowledge of the female phenotype of autism (Hull et al., 2020) and possible androcentric references of social communication and interaction (Dworzynski et al., 2012; Hull & Mandy, 2017; Kreiser & White, 2014) to raise awareness amongst professionals and families. Raising awareness of the influence of gender and developmental norms and expectations on pupils' social behaviours, friendships and conflicts might also be considered informative during the assessment process (e.g., Dean et al., 2017; Sedgewick et al., 2019; Tierney et al., 2016). Understanding developmental and gender frameworks in the context of autism may also have implications for EPs' formulations of pupils' presenting needs and behaviours. For example, it may be that EPs more readily interpret social communication and interaction needs in relation to the social landscapes of boys and girls by acknowledging that autistic girls may appear less socially isolated, and spend more time in a peer group, than their male counterparts (Dean et al., 2017; McMahon et al., 2013). Recognising that the challenges autistic females experience in social communication and interaction is often characterised by conflict in their friendships, and exacerbated by the transition from primary to secondary school is also important for EPs' formulations (Cook et al., 2018; Cridland et al., 2014b; Milner et al., 2019; Sedgewick et al., 2019; Ryan et al., 2021; Tierney et al., 2016).

Other literature discussed that may be relevant to EPs' practice, includes the association between autistic females' social experiences, potential masking behaviours, and their mental health needs (Cook et al., 2018; Tierney et al., 2016; Tomlinson et al., 2022). Considering how these factors may integrate and influence one another may support EPs to communicate a holistic overview of the pupil's experience. Given that formulations serve as a vehicle for change (BPS, 2017), this arguably has implications for implementing interventions and monitoring progress. Firstly, in terms of what skills may be deemed appropriate to develop to promote positive interactions and relations among female autistic pupils and their same age and gender peers. Secondly, in terms of evaluation and outcome measures. Research exploring gender differences in autistic adolescents' response to social skills intervention typically used self-report, parent-report, or behavioural measures of social competence (McMahon et al., 2013; McVey et al., 2017; Ko et al., 2022). However, EPs may want to reflect on how meaningful this is, because it may be considered that for female autistic adolescents,

progress may be better conceptualised in terms of the degree to which they successfully maintain and manage their friendships, or the severity of anxiety they experience.

7. Conclusions

The literature points to a possible female specific experience in relation to the social needs and challenges navigated by autistic adolescents in mainstream secondary school settings. This is currently understood in relation to their multiple identities: 1) they are a female, 2) they are an adolescent, and 3) they are autistic. However, a review of the literature found that most of the interventions for autistic adolescents, that aim to develop social skills and promote friendships, do not consider gender as an integral factor, for example in their curriculum content. This is perhaps surprising given that the influence of gendered norms and expectations on the social experiences and communication and interaction patterns of males and females is well established (Dean et al., 2017; Rose & Rudolph, 2006).

Research exploring possible gender differences in the responses of autistic adolescents to social skills interventions is in its infancy, with only three studies to this effect (McMahon et al., 2013; McVey et al., 2017; Ko et al., 2022). Whilst preliminary evidence suggests that autistic males and females may benefit similarly from said interventions, it is important to acknowledge the limitations of this research. For example, in terms of research design (e.g., control group), small sample sizes, and self- and parent-reported measures. In addition to school-reported measures being somewhat absent from research exploring changes in autistic adolescents' social communication and interaction skills after a period of intervention, the views of school staff also appear to be missing from research exploring the experiences of female autistic adolescents during their secondary school education. Understanding the perceptions of school staff in relation to the social communication and interaction needs of female autistic adolescents is arguably important as this will likely have implications in terms of what support is offered to female autistic adolescents at school.

Whilst it is recognised that capturing the voice of the autistic community is important, it can be argued that school staff may offer a different perspective and provide insight into the social

communication and interaction needs of autistic females based on their knowledge of, and familiarity with pupils in school. The awareness school staff have of the school culture and system may also be valuable for understanding how the needs of autistic females may be exacerbated or alleviated within this context. Moreover, since the support available to promote the social and friendship skills of autistic females in educational settings is perceived to be unsatisfactory, and a recent survey of SENCos in one local authority in England highlighted a need for more 'strategies and intervention' to support autistic girls (Baldwin & Costley, 2016; Fowler & O'Connor, 2021; Gray et al., 2021), it might be considered that further research in this area is warranted. The likelihood of promoting positive change for female autistic adolescents, for example through targeted interventions at school, arguably depends on the intention and ability of school staff to enact such change (Gameson & Rhydderch, 2017). Speaking to school staff about the possibility of delivering interventions specifically designed for autistic females may also highlight possible gaps in their knowledge and understanding and identify areas for staff development.

To the researcher's knowledge, perceptions of gender-specific needs and interventions in relation to the social skills and friendships of autistic adolescents, have not yet been investigated. Considering the findings of this literature review, the following questions may be helpful to explore:

1. Do school staff perceive there to be gender differences in the social communication and interaction needs of autistic adolescents in mainstream secondary schools?

2. What are the perceptions of school staff in relation to gender-specific interventions, for supporting female autistic adolescents to develop their social skills and peer relationships, in mainstream secondary schools?

8. <u>References</u>

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Gender-specific needs and interventions for autistic adolescents in mainstream secondary schools.

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1. Abstract

Research suggests that there may be qualitative differences in the presentation of autistic males and females, particularly within their social communication and interaction. This mirrors gender differences observed in the non-autistic population. However, interventions that aim to support autistic adolescents to develop their social skills and friendships, do not often consider gender as an integral factor. The current research aims to address limitations in previous research and explore the perceptions of school staff in relation to gender-specific needs and interventions for autistic adolescents. Semi-structured interviews were conducted with eight Additional Learning Needs (ALN) staff in mainstream secondary schools in Wales. A reflexive thematic analysis of the data generated five themes: 1) *Two sides of the same coin*, 2) *All that glitters is not gold*, 3) *Don't fix what's not broken*, 4) *A hard nut to crack*, and 5) *Made to measure*. Staff recognised that some support needs and experiences were unique to autistic girls and felt that there may be some potential value in interventions designed specifically for this population, for example that promoted positive wellbeing and sense of self and identity. However, value was also assigned to needs-led, person-centred approaches. Implications of the findings for the practice of Educational Psychologists (EPs) are discussed.

2. Introduction

Epidemiological studies estimate a male-to-female ratio of 4:1 in autism (Fombonne, 2009). This increases to approximately 10:1 for autistic individuals without intellectual disability and decreases to 2:1 for autistic individuals with intellectual disability (Fombonne, 2009; Loomes, Hull & Mandy, 2017). The female autism phenotype hypothesis offers a possible explanation for the gender diagnosis gap. It posits that females are less frequently diagnosed as autistic because the challenges they experience in the core characteristics of social communication and interaction, and restricted and repetitive patterns of behaviours, interests, or activities, may be qualitatively different to males (Hull, Petrides & Mandy, 2020). In addition to being associated with potential late or missed diagnosis, a female autism phenotype may also have significant implications in terms of appropriate intervention as knowledge about autism has mostly derived from research with male samples (Dworzynski, Ronald, Bolton, & Happé, 2012; Kreiser & White, 2014; Shefcyk, 2015; Thompson, Caruso & Ellerbeck, 2003). This is argued to be especially pertinent for social communication and interaction skills given that these are often defined in the context of social and cultural variables (Radley & Dart, 2022), and gender differences are observed in both the autistic and non-autistic population (Dean, Harwood & Kasari, 2017; Sedgewick, Hill & Pellicano, 2019). Since autistic females are suggested to superficially demonstrate better social skills than autistic males, it is plausible to assume that their needs in this area may be overlooked (Dean et al., 2017; Hull et al., 2020; Wood-Downie, Wong, Kovshoff, Cortese & Hadwin, 2021).

Adopting a developmental perspective towards intervention for autistic females has been recommended, based on research exploring the first-hand experiences of female autistic adolescents (Tierney, Burns & Kilbey, 2016). Qualitative accounts of autistic girls' experiences in mainstream secondary schools suggest that despite often being socially motivated and having a desire to be friends and interact with their non-autistic peers, they often experience challenges navigating the complexity of female adolescent relationships (Cridland, Jones, Caputi & Magee, 2014; Cook, Ogden & Winstone 2018; Foggo & Webser, 2017; Myles, Boyle & Richards, 2019; Tierney et al., 2016; Ryan, Coughlan, Maher, Vicario & Garvey, 2021). The transition from primary to secondary school is often reported to exacerbate social communication and interaction differences, due to developmental changes in social

expectations and norms (Myles et al., 2019; Tierney et al., 2016; Ryan et al., 2021). Whilst female autistic adolescents demonstrate some knowledge and understanding of developing friendships, particular areas of challenge during their teenage years include communicating in groups, managing conflict, maintaining relationships, and navigating social media (Cook et al., 2018; Foggo & Webster, 2017; Myles et al., 2019; Ryan et al., 2021; Sedgewick et al., 2019; Tierney et al., 2016; Tomlinson, Bond & Hebron, 2022). Poor mental health and wellbeing is also an experience associated with female autistic adolescents and is often understood in relation to possible masking behaviours (Cook et al., 2018; Tierney et al., 2016; Tomlinson et al., 2022). Given that high quality friendships are influential in the psychosocial adjustment of autistic and non-autistic adolescents (Chang, Chen, Huang & Lin, 2019; Hiatt, et al., 2015; O'Connor et al., 2022; Whitehouse et al., 2009; You & Bellmore, 2012), it could be argued that intervention to promote autistic females' social development may be beneficial.

In recognising the unique experiences associated with being: 1) female, 2) an adolescent, and 3) autistic, interventions tailored to meet the specific needs of this population may be warranted. However, very few interventions that aim to promote social skills and friendships for autistic adolescents consider gender as a relevant factor, for example in terms of their curriculum content, with only one intervention found within the literature to this effect (Jamison & Schuttler, 2017). Research exploring gender differences in participants' responses to social skills and friendship interventions is also scant (McMahon, Vismara & Solomon 2013; McVey et al., 2017; Ko, Schuck, Jimenez-Muñoz, Penner-Baiden & Vernon, 2022). Despite preliminary evidence suggesting that gender does not appear to be predictive of autistic participants' response to interventions (McMahon et al., 2013; McVey et al., 2017; Ko et al., 2022), research exploring autistic females' and/or their mothers' perspectives of the support available for autistic girls, capture thoughts and feelings of services being inadequate and inappropriate for meeting their unique needs (Baldwin & Costley, 2016; Fowler and O'Connor, 2021). A recent survey of Special Educational Needs Co-ordinators (SENCos) in one local authority in England also highlighted a need for more 'strategies and intervention' in educational settings to support autistic girls (Gray, Bownas, Hicks, Hutcheson-Galbraith & Harrison, 2021), suggesting that further research in this area may be worthwhile.

Whilst there is great merit in research capturing the voices of girls and women in the autistic community, it might be considered that the voice of other key players involved in supporting

this population is missing. Currently, very few studies have explored the perspective of school staff regarding the social experiences and needs of female autistic adolescents. To gain a holistic understanding of the experiences of autistic girls in a mainstream secondary school in England, Tomlinson et al. (2022) interviewed the school psychotherapist in addition to the girls themselves and their mothers. However, it could be argued that a school psychotherapist's perspective of the needs of autistic girls may be very different to classroom or support staff, because of the context in which they are familiar with the pupil (i.e., individualised therapeutic sessions). It might also be considered that very few schools in the UK have psychotherapists, limiting the generalisability of the findings. A second, questionnaire-based study targeted SENCos across a range of early years, primary and secondary school settings in an English local authority (Gray et al., 2021). One limitation of this methodological approach, however, was that the data collected were predominantly quantitative and therefore, it might be considered that there was minimal scope for in-depth analysis of the perspectives of these staff (McLeod, 2019). The research also did not differentiate between educational settings and so the views of secondary school staff in relation to the support needs of autistic adolescents specifically, are unclear.

Understanding the perceptions of school staff in relation to the social communication and interaction needs of female autistic adolescents is arguably important as this will likely have implications in terms of what support is offered to female autistic adolescents at school. In addition to offering a different perspective, school staff also have knowledge about the school culture and system, which may contribute towards understanding how the needs of autistic females may be exacerbated or alleviated within this context. It might also be considered that the likelihood of promoting positive change for female autistic adolescents, for example through targeted interventions at school, depends on the intention and ability of school staff to enact such change (Gameson & Rhydderch, 2017). Speaking to school staff about gender specific needs and interventions for autistic adolescents may also be helpful for identifying possible gaps in their knowledge and understanding, and for highlighting areas for staff development. Gaining the perceptions of staff may be especially relevant for EPs since they often have close working relationships and are involved in supporting schools to facilitate and monitor pupils' progress and response to interventions (British Psychological Society [BPS], 2017).

In acknowledging the limitations of previous studies and in attempt to contribute to a gap in the literature, the current research attempts to answer the following research questions:

1. Do staff perceive there to be gender differences in the social communication and interaction needs of autistic adolescents in mainstream secondary schools?

2. What are the perceptions of school staff in relation to gender-specific interventions, for supporting female autistic adolescents to develop their social skills and peer relationships in mainstream secondary schools?

2.1. A note on gender

The notion of gender is largely debated within the literature, with perspectives offered from biological, cognitive, developmental, and social theorists (Blakemore, Berenbaum, & Liben, 2008). It is beyond the scope of the current research to discuss these in depth. However, it is important to acknowledge how gender is being conceptualised.

The current research conceptualises gender as a characteristic influenced by socio-cultural roles, behaviours, and expectations, and posits that it is through reinforcement of, or affiliation with such norms, that individuals develop their gender identity (Blakemore, et al., 2008). The gender a person identifies with is considered to contribute towards the way in which they move, act, and express themselves in society, and is traditionally viewed in relation to being male or female (Blakemore et al., 2008). This positioning arguably compliments the notion that social competence is gender-specific, as it recognises that the social behaviour males and females display or engage with may differ to correspond and be deemed 'successful' within gender-related cultures and experiences (Rose-Krasnor, 1997).

In acknowledging that gender is not always synonymous with biological sex, the term 'female' is used in to refer to pupils who identify as female, regardless of their sex assigned at birth (Gentile, 1993). It should be noted that whilst the current research is concerned with exploring perceptions regarding the experiences and support needs associated with a female autistic identity, it recognises that not all gender identities align with the male/female dichotomy. However, it can be argued that a particular focus on autistic females is justified considering the female phenotype of autism hypothesis (Hull et al. (2020).

3. Method

3.1. Ontological and Epistemological Positions

This research adopted a critical realist ontology. The critical realist stance recognises that an independent reality exists, but our knowledge of reality is socially influenced, and therefore reality is only ever partially accessible (Braun & Clarke, 2013). Critical realism also positions knowledge as historically, socially, and culturally bound, meaning that our knowledge of reality can be considered transitive and subject to evolve and change (Bhaskar, 2011; Braun & Clarke, 2013). A critical realist ontology allows for the acceptance of the biological and cognitive underpinnings of autism as 'real', whilst recognising that they are perhaps unobservable and cannot be objectively measured. Such structures nevertheless exist and operate independently of our awareness or knowledge because there are observable behaviours that characterise autism, which individuals can experience and interpret (Bhaskar, 2011). A critical realist perspective also acknowledges that whilst autism has always been a reality, what we know to be 'true' about autism has changed over time, because of the discourses available to us. Similarly, this research recognises that in the social world, social rules are often non-physical and unobservable. However, a physical absence does not necessarily equate to a lack of existence because the effects of social expectations and norms within cultures can be observable, for example through people's behaviour (Haigh, Kemp, Bazeley & Haigh, 2019).

The epistemological position for this research was contextualism, which posits that no single method can access the truth because what is deemed truthful is context dependent and therefore always local and provisional (Braun & Clarke, 2013; Madill, Jordan & Shirley, 2000). A contextualist epistemology recognises that what a person knows to be 'true' is shaped by their interpretations of the world around them and is subject to change based on their encounters and observations (Madill et al., 2000). Adopting this epistemological approach to the research allows each participant to share their own version of reality and accepts this as a valid 'truth' derived from their personal experiences and circumstances (Madill et al., 2000).

3.2. Research Design

In keeping with the ontology and epistemology, the current research adopted a qualitative paradigm (Braun & Clarke, 2022). Given that the research questions aimed to explore participants' *perceptions* of gender-specific needs and interventions for autistic adolescents, the use of semi-structured interviews were considered an appropriate method of data collection (Braun & Clarke, 2013). To capture a range of experiences within the scale of this research, a sample of between six and ten interviews were sought (Braun & Clarke, 2013). A purposive approach to participant sampling was adopted since the aim was to gain further understanding about the topic by targeting people who could provide certain kinds of information (Braun & Clarke, 2013).

3.3. Recruitment and Inclusion Criteria

Recruitment of participants was initially sought from one Welsh consortia region. A focus on recruiting in Wales was adopted to compliment the researcher's doctoral training, fieldwork placements and future employment in this country. Gatekeeper consent was obtained from Directors of Local Education Authorities (LEAs; Appendix 2) and then Head Teachers of mainstream secondary schools within these LEAs (Appendix 3). Mainstream secondary schools were targeted due to the focus on autistic adolescents without co-occurring intellectual disability. This population of pupils was chosen as the ratio difference between genders for autistic individuals without intellectual disability is greater than autistic individuals with intellectual disability (Fombonne, 2009; Loomes et al., 2017). Consenting Head Teachers provided contact details for Additional Leaning Needs Co-ordinators (ALNCos), who were then contacted by the researcher and asked to share information about the project with Additional Learning Needs (ALN) staff alongside an electronic consent form (Appendices 4, 5, 6). ALN staff were defined as members of staff in school line managed by the ALNCo (e.g., teaching assistants, learning support assistants). This participant group was chosen due to their close working relationships with pupils and their potential role in identifying needs and delivering interventions.

Due to the original recruitment strategy resulting in poor numbers of consenting participants, a second phase of recruitment was employed. This involved extending the participant pool

to include ALNCos. ALNCos were chosen as part of the target sample because of their role in co-ordinating support and interventions for pupils with ALN, and their close working relationships with EPs. The geographical reach of the project was also broadened to include the remaining local authorities in Wales. Principal Educational Psychologists (PEPs) were contacted to provide gatekeeper consent and contact details for ALNCos (Appendix 7). PEPs were chosen as the gatekeeper because of their direct links with the doctoral programme at Cardiff University and ALNCos in schools. ALNCos were then contacted by the researcher with an invitation to participate, information about the project and an electronic consent form (Appendices 5, 6, 8). They were encouraged to share these with other ALN staff. ALN staff from other parts of the UK[1] were also invited to participate via a poster advertised on social media (Appendix 9). An overview of the recruitment process is presented in Figure 1.

Figure 1

Recruitment process

	Phase 1		Phase 2	
March – August 2022	Contacted directors of LEAs (N=6). Consent obtained (N=5)		Contacted PEPs (N=16). Consent obtained (N=6)	June – August 2022
March – November 2022	Contacted Head Teachers (N=42). Consent obtained (N=14).	Social media (N=0)	Contacted ALNCos (N=62).	September – November 2022
March – November 2022	Contacted ALNCos (N=14).		Participants recruited (N=8).	September – November 2022
June –September 2022	Participants recruited and interviewed (N=2).		Participants interviewed (N= 6) / Not eligible (N= 1) No response (N=1)	

Total number of participants interviewed (N=8)

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[1] Since no participants were recruited from England or Scotland, the terminology used reflects that used in Wales (i.e., Additional Learning Needs).

It was a requirement that participants had at least one autistic pupil known to them. Pupils were defined as autistic if they had a confirmed diagnosis of autism. A diagnosis of autism was specified in an attempt to provide some homogeneity for the pupil population in question. Whilst it is recognised that there is variability in the experiences and needs of autistic adolescents, it is also acknowledged that to receive a diagnosis of autism, a particular criteria and threshold must be met in the domain of social communication and interaction and restricted and repetitive patterns of behaviours, interests, or activities, (American Psychiatric Association [APA], 2013; World Health Organisation [WHO], 2022). Participants were not required to have experience delivering gender-specific interventions.

3.4. Participants

Consenting participants were contacted by the researcher to arrange a mutually convenient time for the interview. Interviews were arranged on a first come first served basis. Details of the participants are displayed in Table 1. Participation was voluntary and no incentives were given.

Table 1

Participant Characteristics

#	Role	Number of Years in Role	Local Authority
1	ALNCo	7 years	A
2	LSA	12 years	B
3	ALNCo	14 years	B
4	ALNCo	5 years	C
5	ALNCo	6 years	D
6	LSA	6 years	E
7	ALNCo	5 years	C
8	ALNCo	2 years	C

Note: Additional Learning Needs Co-ordinator (ALNCo), Learning Support Assistant (LSA).

3.5. Data Collection

One-to-one semi structured interviews were conducted with eight school staff (three male; five female). The interview schedule (Appendix 10) consisted of five open-ended questions with prompts and was designed to explore the perceptions of school staff in relation to the social experiences, challenges, and support needs of autistic pupils. Development of the interview schedule involved generating possible questions related to the topic of interest, considering the sequence and logical flow of said questions, and revising the wording to maximise rapport and the openness of participants' responses (Braun & Clarke, 2013). A semi-structured approach allowed for flexibility in the wording and order of questions in response to the participant's developing account (Braun & Clarke, 2013).

Due to the ongoing Covid-19 context and potential geographical reach of the research, interviews were held, and video recorded with the participant's consent, via Microsoft Teams. The interviews lasted between 37 and 61 minutes (average length = 48.5 minutes). There was additional time before the interviews for rapport building, reminding participants of their rights, clarifying terminology, and opportunities for questions. Participants were provided with a debrief sheet via email once the interview had ended (Appendix 11).

3.6. Data Analysis

The video-recordings of the interviews were transcribed, removing individual names and locations to ensure anonymity (Appendix 12). The transcripts were then analysed using the six recursive phases of Reflexive Thematic Analysis, as outlined by Braun and Clarke (2022; see Figure 2). An inductive approach to analysis was adopted, meaning that the code and theme development were driven by the data as opposed to being shaped by theory (Braun & Clarke, 2022). However, it is recognised that an inductive orientation to analysis is never 'pure' given that the researcher has their own social positioning and theoretical perspectives, which likely shape their mean making and engagement with the data (Braun & Clarke, 2022). Examples of the coding process and theme development are presented in Appendices 13, 14 and 15.

Figure 2

Six Recursive Phases of Reflexive Thematic Analysis (adapted from Braun & Clarke, 2022)

1 ➤ **Data familiarisation:** Read and re-read the data whilst making brief notes about any analytic ideas to gain deep familiarity with the content of the dataset.

2 ➤ **Coding:** Systematically work through the dataset. Label relevant data items with semantic or latent codes to succinctly summarise analytic ideas. Compile a list of code labels and the associated data items.

3 ➤ **Generating initial themes:** Begin to identify shared pattern meaning across the dataset by grouping codes that share a central concept into candidate themes. Chart potential patterned meanings in a thematic map.

4 ➤ **Developing and reviewing themes:** Assess the fit of initial themes by checking the viability, boundaries, diversity, and importance of each theme in relation to the full dataset.

5 ➤ **Refining, defining, and naming themes:** Refine the structure and flow of the analysis. Name each theme and write a brief synopsis.

6 ➤ **Writing up:** Finesse and finish the writing process. Use an analytic narrative with supporting data extracts to tell the reader a cohesive story about the dataset, that addresses the research question(s).

3.7. Validity of Qualitative Data

Yardley's (2015) criteria for assessing validity in qualitative research was used to demonstrate trustworthiness. Attempts to address each of the four principles: 1) Sensitivity to context, 2) Commitment and rigour, 3) Coherence and transparency, and 4) Impact and importance, are outlined in Appendix 16.

3.8. Ethical Considerations

Ethical approval was granted by Cardiff University School of Psychology Ethics Committee. The research was undertaken in accordance with the BPS Code of Ethics and Conduct (BPS, 2017) and the Health and Care Professionals Council Standards of Conduct, Performance and Ethics (Health and Care Professionals Council [HCPC], 2016). A summary of the key ethical considerations and how they were addressed is presented in Appendix 17 and includes information related to: informed consent, confidentiality and anonymity, right to withdraw, risk of harm, debriefing participants, data protection, and the research topic.

4. Analysis

Analysis of the data generated five themes: 1) *Two sides of the same coin*, 2) *All that glitters is not gold*, 3) *Don't fix what isn't broken*, 4) *A hard nut to crack*, and 5) *Made to measure*. The thematic map presented below captures a visual representation of the themes, sub-themes, and relationships between them.

Figure 3

Thematic Map
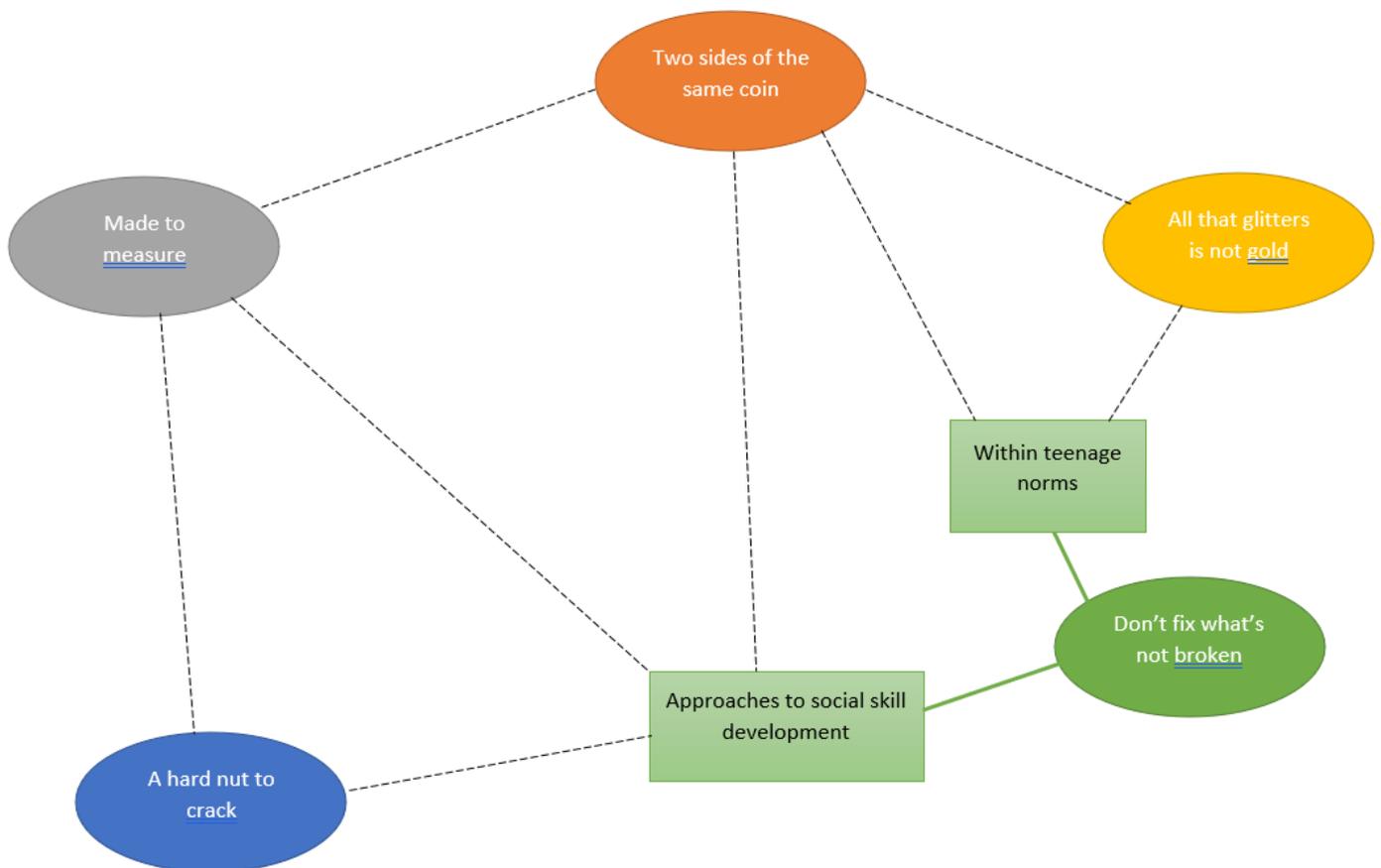
Note: Each coloured circle represents one of the five themes generated from the thematic analysis. Rectangles linked by bold lines to a circle, represent sub-themes. Dashed lines denote a relationship between themes.

4.1. Theme 1: Two sides of the same coin

This theme reflects the notion that whilst there are some core similarities in the social needs and experiences of autistic adolescents in mainstream secondary school, there are also observable differences between autistic males and females.

The social communication and interaction difficulties that staff perceived autistic adolescents to experience, regardless of their gender, might be considered characteristic of autism and included having a literal interpretation of language, misunderstanding the intentions of others, displaying socially inappropriate behaviour for the context, and being direct in their approach. Despite often having a desire for friendship, differences in social communication and interaction were perceived to contribute towards possible challenges in peer relationships, meaning that autistic adolescents were often on the periphery of groups and sometimes viewed as outsiders:

> "*I suppose one of the first things that we notice, and this is not gender specific, um is a difficulty with making and keeping friends… so there's a, there's an element of desperately wanting to make the friends, but not knowing how to… the way that they are interacting with others is not seen as appropriate or um conducive to a good relationship, if you like, amongst the others…there will be an element of conversations being lost in translation and um misunderstandings, that can very often result in, in friction, really*" (P6)

Commonalities were also evident in the types of social activities deemed particularly challenging or anxiety provoking for autistic adolescents. This included navigating social media or online communication, group work, and unstructured times during the school day. It was suggested that some autistic adolescents gravitate towards adults as they are perceived to be more predictable and easier to engage. Others choose situations or environments that are perhaps considered to have fewer social expectations, including spending time with fellow autistic pupils.

Despite recognising that autistic males and females may share some experiences and needs, staff also described gender differences in relation to social communication and interaction. For example, autistic girls were often characterised as having very intense friendships and were perhaps perceived as being more dependent on their peer relationships than their male

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counterparts. It might be considered that the social environments within which males and females operate, contribute towards the behavioural presentation of autistic adolescents because whereas girls' interactions tend to be less structured, boys' interactions often centre around games or sports:

> *"I've seen a lot of it with girls, they really do crave this special friend or being accepted in a small group of friends, and uh boys can be a lot more independent than that. It doesn't mean they, they don't want it, but … I've not yet had a boy say, oh I really want a friend, you know. Because usually they, they'll kick ball, or something"* (P6)

Conflict with their peers was another area of difference between autistic adolescents that was observed by staff. Unlike autistic boys who were perceived to be more exposed to overt bullying behaviours or directly involved in physical altercations, autistic girls were perceived to struggle to negotiate disagreements or falling outs with their friends, which sometimes resulted in temporary isolation from, or more permanent breakdowns in their relationships:

> *"…they (autistic girls) will often have some relationship problems which will then um sort of cause them to go off by themselves at break times and lunch times, and then perhaps after a week or two weeks, then they'll integrate back in with their friendships."* (P8)

4.2. Theme 2: All that glitters is not gold

This theme captures the idea that although some autistic girls appear to manage relatively well on the surface, closer assessment may reveal internalising needs.

It might be considered that teenage girls are generally quite receptive and susceptible to social influence (e.g., trends). Such social norms might be perceived as favourable for some autistic girls because it makes it easier for them to blend into a group and go unnoticed: *"Girls can kind of copy each other, can't they, and I think that's quite normal, and it's not weird for a girl to copy somebody's sense of dress or pop groups that they like."* (P5). Similarly, shy girl stereotypes may mean that female autistic adolescents *"…just kind of present as quite shy young ladies"* (P3).

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In addition to the possibility that the social landscape of adolescent females is conducive to concealing autistic girls' needs, staff also perceived autistic girls' awareness of their differences and concerns about how they are viewed by their peers, to perhaps motivate them to fit in. Many staff perceived autistic girls to hide any challenges they may experience in their social communication and interaction quite successfully and often associated them as having a friendship group. However, when autistic girls encountered conflict in these relationships, the experience was perceived by staff to be intense and all-consuming, and to have a significant impact on their emotional wellbeing: *"…obviously you understand the upset, the distress that it's caused but then you've got that mindset of right, but I can't move beyond this right now"* (P2).

The prevalence of poor mental health and wellbeing within the female autistic adolescent population was prominent within the data. Withdrawal and internalising needs, particularly anxiety and self-harming behaviours were often what brought the girls to the attention of staff. There was an understanding that perhaps autistic girls blamed themselves when their peer relationships failed: "*No matter what the, what the situation is, it's that self-doubt. That I'm getting this wrong."* (P2).

4.3. Theme 3: Don't fix what's not broken

This theme has two sub-themes: a) Within teenage norms, and b) Approaches to social skill development. It alludes to the concept that because autistic girls' social experiences appear relatively manageable and their coping strategies and current interventions seem to work well, there is no need for any change to occur.

4.3a. Within teenage norms

The increasing social and academic demands as pupils progress through their school career, was perceived by staff to be a source of stress for all pupils, regardless of their diagnostic status. This, coupled with the onset of puberty, was felt to contribute towards some of the challenges experienced by autistic adolescents. There was also an understanding that changes or breakdowns in friendships were not unique to autistic girls, but instead were a usual teenage experience, particularly amongst females:

"To be honest with you, I don't think girls' friendships do run smoothly, even yeah, without autism…like every other girl group, they all kind of every so often argue about boys and stuff…They're the best of friends one moment and then just can't stand each other [laughter] and can't look at each other. And then they're friends again. It's just, yeah. It's just how girls are." (P5)

Similarly, the stereotype that teenage girls can be hormonal and highly emotional was judged by some staff to perhaps cloud autistic girls' underlying needs. Since autistic girls often responded similarly to their peers (e.g., crying) or developed coping strategies to manage their interactions (e.g., masking), the severity of their needs was perhaps not perceived to be as great as pupils with externalising behaviours, and therefore was less likely to be prioritised or to meet the threshold for direct input or support:

"…you've gotta do it with a boy who's throwing tables around, tables and chairs around the classroom because there's an, there's an, there's an urgent need there. But if I've got, if I've got, um say, for example, a young lady who's got a diagnosis of autism and is academically on track, um you know, actually is navigating the friendship issue relatively well, it's very difficult then to kind of justify pushing resource, a limited, limited resource within that area." (P4)

It might, therefore, be considered that staff perceived autistic girls' behaviour to mostly fall within the range of expected teenage norms, and to not be a priority for support within schools' limited resources.

4.3b. Approaches to social skill development

Some staff recognised the importance of social skill development for autistic adolescents' holistic growth, wellbeing, and preparedness for life after school. Common aspects of social skill development were identified and perceived by staff to be beneficial for autistic adolescents, regardless of their gender. These largely consisted of skills related to verbal and non-verbal communication, and relationship building. Staff provided an insight into the various approaches currently used within schools, which included both explicit and implicit teaching of social skills and preventative and reactive action from adults. Whilst staff

acknowledged that there may be individual differences in response to intervention, there was an understanding that universal social skill development programmes and strategies were generally sufficient for both boys and girls: *"…there's very little differentiation as far as, based on gender then. I'm, you know, unless we're missing a trick, it seems to work."* (P1)

4.4. Theme 4: A hard nut to crack

This theme portrays the predicament that even if there was an identified need for a gender-specific intervention for female autistic adolescents, several considerations would need to be afforded that may affect its implementation in practice.

Within staff's accounts, some support needs were considered particularly relevant for autistic girls. This included adult mediation to resolve conflict (e.g., restorative conversations, reflection) and interventions to promote positive wellbeing and manage anxiety, whether that be within the school or via external, specialist agencies (e.g., Child and Adolescent Mental Health Services). Staff also identified several areas of development that they felt may be especially beneficial for autistic girls, based on their understanding of their needs and experiences in school: *"I suppose in terms of the skills development, the girls have to, or need to develop a little bit more resilience"* (P3), *"Even from um just a safety, self-esteem and sort of confidence building point of view"* (P2). There was also the idea that autistic girls may be helped by learning to understand, accept and celebrate their individuality and differences: *"…you have to let your guard down at some stage and, and be you and accept who you are."* (P5).

Some staff believed that there are different levels of social skills, and that the social needs and goals of autistic boys and girls may differ as the social environments and interactions within which adolescents participate in, often vary by nature of their gender:

> *"…how a boy responds and how a girl responds, neurotypically speaking, is very different, isn't it, to each other and I think that needs almost to be carried over in terms of our non-neurotypical children, in the sense that you know, the things that the girls are concerned about socially are very different to what the boys are concerned about.*

And the things that the girls wanna be able to do socially are very different to what the boys want to be able to do socially." (P3)

However, staff alluded to there being several challenges to implementing gender-specific support for autistic adolescents. For example, difficulties related to the timely identification of possible autistic behaviours often resulted in girls receiving a diagnosis later in their school career, once their differences became more prominent. Staff considered this to have implications, firstly in terms of schools having enough autistic girls to run a female-specific intervention, but also in terms of early identification of needs and potentially missing pupils who may benefit from the support. Consideration may also need to be given to the content and group dynamics of gender-specific interventions. Staff acknowledged that whilst there is perhaps increasing numbers and greater awareness of autistic girls, their needs are perhaps less understood. Although autistic girls were considered to have some similarities in need, staff also recognised that there is likely to be individual differences and variation within this population:

"So, one of our previous pupils really struggled with oversexualized language um towards, towards men and peers and teachers as well. So, something like that would be very, very beneficial for, for that girl…Um another student it might be, you know how to focus on developing relationships and maintaining them, um, rather than sort of having relationship breakdowns." (P8)

Exploration of gender identity was perceived by staff to be a shared experience amongst many autistic adolescents. Interpretations offered by staff as to why gender variance was often associated with autistic adolescents, particularly females, included feeling different to their non-autistic peers but not knowing why, or how to make sense of it:

"…the pupils feel in terms of identity, that they're different and need a way to fit in and they see that as the reason they're not fitting in because they've identified as a different gender. So, I don't know whether it's that sense of belonging and um if they fit in this way, well, that will kind of offset something somewhere else kind of thing… looking at those alternative ways to fit in with a different, you know, acknowledging you are different, but not knowing how you're different, then. Perhaps." (P7)

For this reason, some staff wondered whether the concept of gender-specific interventions in education was perhaps outdated: *"I suppose that has an effect then on, on the provision that we put in place for ASD children 'cause we kind have to establish what gender are you identifying as today"* (P1). Some staff also felt that it was important to highlight the responsibility for others to have a greater understanding and awareness of the challenges autistic adolescents may experience, in addition to perhaps having direct interventions available for autistic girls: *"I'd love to see them (autistic girls) being brought out and being sort of assisted, but I'd also really love to see anybody learning a little bit more about autism"* (P5).

4.5. Theme 5: Made to measure

This theme suggests that when it comes to social skills interventions for autistic adolescents, diagnosis and gender do not matter. What does matter, however, is that the intervention has a positive impact for the individual.

Staff perceived there to be a broad spectrum of social communication and interaction needs within the autistic population in mainstream secondary schools, pertaining to different intervention requirements. It was also recognised that autistic adolescents may have needs related to other diagnoses, their learning, home environment, or gender identity, and therefore viewing the young person holistically, as an adolescent outside of the autistic label, was important:

> *"…autism tends to not stand alone either. You know, some of them got learning difficulties, some of them have got sort of the behaviour difficulties. You know, it's very rarely do you just get, I mean, what is just a straightforward autistic child? They don't exist. Because they're still human beings with other things going on aren't they so, yeah."* (P1)

There was an emphasis that interventions should be needs-led and an understanding that gender, although possibly a relevant factor in terms of the behavioural presentation of autistic adolescents, might be less meaningful when it comes to the support that is put in place. Perhaps for this reason, and the perception that some non-autistic pupils might also benefit from support to develop their social communication and interaction skills, person-centred approaches to planning intervention were favoured amongst staff.

The evidence base, and measurable impact of interventions held great value for staff and was perhaps perceived as one of the most important factors: *"…hypothetically, yes, we would go for any intervention you know, but we would need for it to have been trialled, I suppose. And, and that there's a genuine worth, you know, that it works I suppose."* (P6). This arguably has implications for the possibility of gender-specific interventions for promoting social skills and peer relationships among female autistic adolescents.

5. Discussion

This research sought to explore the perceptions of staff in relation to gender-specific needs and interventions for autistic adolescents in mainstream secondary schools, via semi-structured interviews. Findings from the thematic analysis are discussed in relation to each research question. Implications for EP practice, the strengths and limitations of the research, and possible areas for future research are considered.

5.1. RQ1: Do staff perceive there to be gender differences in the social communication and interaction needs of autistic adolescents in mainstream secondary schools?

From their experiences of working with autistic adolescents, staff gave examples of several aspects of social communication and interaction that they perceived to be a core behavioural feature of autism, regardless of gender. Similarities in the types of social activities that were perceived to be particularly challenging and anxiety-provoking for autistic adolescents were also evident in staff's accounts and included group work, unstructured times during the school day, and social media. This somewhat reflects previous research which identified communicating in groups and navigating social media as areas of challenge experienced by female autistic adolescents (Foggo & Webster, 2017; Myles et al., 2019; Ryan et al., 2021; Tierney et al., 2016; Tomlinson et al., 2022). However, the current research suggests that such experiences may also be relevant to male autistic adolescents.

Another similarity observed by staff was that both autistic males and females were perceived to want friends. However, it may be considered that the basis for friendships differed between genders. Interactions amongst female adolescents, including those with a diagnosis of autism, were generally characterised as being unstructured. In contrast, male adolescents were perceived by staff to more likely engage in structured games or sports. This arguably supports and adds to previous research by Dean et al. (2017) which highlighted gender differences in the social behaviours and activities of children at primary school. However, unlike Dean et al. (2017) who found that autistic boys most often spent time alone, staff in the current research reported that some male autistic adolescents participated in team games (e.g., football) or shared interests (e.g., computer games) with their peers. Staff

generally associated female autistic adolescents to have a friendship group in school; reflecting previous findings that suggest that autistic girls tend to spend more time in a group with their peers (Dean et al., 2017; McMahon et al., 2013). Autistic girls were considered to have a greater desire to fit in and staff wondered whether this stemmed from autistic girls' awareness of their differences and concerns about how they are perceived by others. Previous research which suggests that females tend to receive greater emotional provisions from their friendships (e.g., security, acceptance, validation etc.) and be more sensitive to their status amongst peers, relative to males (Rose & Rudolph, 2006), may help explain autistic girls' motivations for wanting to be socially included in school. Other research which found that wanting to fit in was an experience shared by female adolescents, regardless of whether they were autistic or not, may also be relevant (Sedgewick et al., 2019), as it suggests that reputational concerns are something most female adolescents' experience. This is consistent with literature that highlights adolescence as a period where a person's self-concept is influenced by peers' opinions (Sebastian, Burnett, Blakemore, 2008), and with research that suggests that female autistic adolescents construct belonging in relation to external validation and acceptance from peers (Brennan De Vine, 2022).

Staff perceived the behavioural manifestation of social communication and interaction needs to differ amongst male and female autistic adolescents. Shy girl and hormonal stereotypes (e.g., demonstrating extremes of emotion when upset,) and experiences considered 'typical' for female teenagers (e.g., friendship breakdowns, copying trends), meant that the extent of autistic girls' social communication and interaction needs, and masking efforts, often went unnoticed. However, unlike their non-autistic peers, autistic girls were characterised by staff to have more trouble negotiating disagreements within their relationships. This sometimes led to autistic girls becoming isolated from the group and is synonymous with findings from previous research which identified managing conflict and difficulty maintaining relationships as something female autistic adolescents experience (Cook et al., 2018; Foggo & Webser, 2017; Ryan et al., 2021; Sedgewick et al., 2019; Tomlinson et al., 2022). Poor wellbeing and internalising needs were also felt by staff to be a common experience amongst autistic females; something which is consistently reported within the literature (Cook et al., 2018; Tierney et al., 2016; Tomlinson et al., 2022). In addition to possibly being linked to exhaustive efforts to camouflage their autistic traits (Cook et al., 2018; Tierney et al., 2016; Tomlinson et

al., 2022), it might be considered that feelings of loneliness and social exclusion, which may result from challenges maintaining friendships, contribute towards autistic girls' mental health and wellbeing needs (Cresswell, Hinch & Cage, 2019). The relationship between the basis of females' self-construal's being tied to their interpersonal relationships, and the impact interpersonal challenges may have on mental health, may also be helpful for aiding understanding (Cross & Madson, 1997).

Staff from the current research perceived autistic girls to experience their friendships intensely and felt that when conflict was encountered in their relationships, it was all-consuming. It is possible that this may be understood in relation to the perception that, despite often being associated with a peer group, autistic girls can be over-reliant on, and perhaps entirely invested in one peer and corresponds with previous research which found that autistic girls often demonstrated a preference for having one or two close friendships (Myles et al., 2019; Sedgewick et al., 2019). This is perhaps in contrast with male autistic adolescents, who were perceived by staff to be more independent and less reliant on their peer relationships. According to Sedgewick et al. (2019), whilst both autistic and non-autistic girls place importance on having a small number of close friends, the social network of non-autistic girls tends to include a wider friendship group. Having fewer friends in their social network perhaps explains why autistic girls experience conflict to have such a devasting impact. The perception that autistic girls blame themselves for any difficulties they encounter in their peer relationships may also be considered to exacerbate the negative affect they experience, because if an individual attributes failure to causes located within themselves, then this can lead to poor self-concept and self-esteem (Brennan De Vine, 2022). According to Ybrandt (2008), adolescent females with a negative self-concept are at increased risk for internalising behaviours (e.g., depression, anxiety, withdrawal, and somatic complaints). This may contribute to understanding the prevalence of poor mental health and wellbeing within the female autistic adolescent population.

5.2. RQ2: What are the perceptions of school staff in relation to gender-specific interventions for supporting female autistic adolescents to develop their social skills and peer relationships in mainstream secondary schools?

In recognising possible gender differences in the social experiences of adolescents at school, some staff suggested that the social needs and goals of autistic males and females may vary. For example, it was felt that autistic girls perhaps need to achieve a different level of social competence from autistic males, to successfully engage in social conversations with their non-autistic female peers. This may be understood in relation to the concept of judge-specificity in social competence, which posits that an individual's behaviour in social situations is evaluated against and must be coherent with the characteristics of, and benchmarks set by, the peer group (Dirks, Treat & Weersing, 2007). However, interestingly, the types of skills that staff felt autistic pupils may benefit from to support them in their interactions with their peers tended to be the same. This perhaps reflects staff's perceptions that there are some core social communication and interaction differences that characterise autistic pupils, regardless of their gender.

Current approaches to social and friendship skill development, that do not differentiate between male and female pupils, were generally perceived by staff to work well for autistic adolescents. Whilst this may conflict with parents' and autistic women's views about the appropriateness and adequacy of the support available for autistic females (Baldwin & Costley, 2016; Fowler and O'Connor, 2021), such findings might be considered to mirror research which suggests that autistic males and females respond similarly to social skills interventions (McMahon et al., 2013; McVey et al., 2017; Ko et al., 2022). For this reason, it could be argued that staff do not currently perceive there to be a need for gender-specific interventions to support female autistic adolescents to develop their social skills and peer relationships. Moreover, if autistic girls' social difficulties are not perceived to be a priority by staff or are considered less severe relative to other peers' externalising or behavioural needs, then it is unlikely that schools will allocate resources in this area.

However, the current practices of school staff suggest that there are some areas of development that may be particularly pertinent for female autistic adolescents, including their self-esteem, resilience, and confidence. For this reason, if there was to be any value in

interventions designed specifically for female autistic adolescents, a focus on promoting their self-perceptions and emotional wellbeing, as opposed to social skills per se, may be more appropriate. This may be especially relevant given that autistic females' perceptions of their own social skills have been found to be lower than their male counterparts (Ko et al, 2022), and there is an association between autistic adolescents' perceptions of their social functioning and anxiety (Bellini, 2004). It might also be helpful to consider research that suggests that positive personal autistic identity, which is associated with increased self-esteem and wellbeing, is related to more time elapsed since diagnosis (Corden, Brewer & Cage, 2021). Since autistic girls often receive their diagnosis later than males (Hull et al., 2020; Russell et al., 2022; Shattuck, et al., 2009), this may have implications for their satisfaction and understanding of their autistic identity, and consequently their self-esteem and wellbeing.

Despite recognising that some needs were more characteristic of autistic girls, the current research suggests that gender was often an irrelevant factor for staff when thinking about interventions for autistic adolescents. Instead, person-centred, needs-led approaches were emphasised. Whilst this might reflect staff's awareness of individual differences within the female autistic population, it may also be that that staff's emphasis on individual needs is a consequence of the focus on person centred practice in the current Additional Learning Needs reform in Wales, under The Additional Learning Needs and Education Tribunal (Wales) Act 2018.

It might also be that because gender identity was observed by staff to be something which some autistic pupils are exploring, consideration of gender-specific interventions may not be at the forefront of schools' thinking. Views from staff mirror findings from Cooper, Smith and Russell (2018), which suggest that variation in the expression of gender is prevalent in the autistic population, particularly females. Whilst some staff interpreted this in terms of pupils' having difficulty understanding what it means to be different, perhaps owing to girls' often late diagnosis (Hull et al., 2020; Russell et al., 2022; Shattuck, et al., 2009), it might be helpful to consider alternative explanations. For example, Cooper et al. (2018) suggest that there may be an association between challenges experienced in social communication and interaction and gender variance. They propose that because gender variant and autistic individuals are arguably stigmatised groups in society, this may contribute towards potential social

challenges. However, it might also be that low affiliation with a gender group arises from poor knowledge and understanding of, or freedom from, gendered social norms, perhaps leading to greater confusion with gender identity. The latter arguably echoes autistic girls' experiences of not always understanding or fitting in with gender expectations, for example in terms of their appearance, interests, and communicative styles (Foggo & Webster, 2017; Milner, McIntosh, Colvert & Happé, 2019; Tierney et al., 2016). This could have implications for the potential value of gender-specific interventions because adherence to social norms is perceived by some autistic girls as important for experiencing a sense of belonging and acceptance in school (Myles et al., 2019).

5.3. Summary

The current research suggests that whilst there are some commonalities in the underlying social communication and interaction needs of autistic adolescents, these may manifest in different behavioural presentations for males and females, owing to possible gender differences in the social experiences and environments of pupils in school. Autistic girls were often understood to mask any challenges they may experience in their peer interactions and perceived to function within what might be considered the normative continuum of behaviour for female adolescents. Despite staff not perceiving there to be a need for gender-specific social skills interventions in school, and assigning value to needs-led, person-centred approaches, it could be argued that staff recognised that some support needs and experiences were unique to autistic girls. It was acknowledged that there might be some potential value in interventions specifically designed for this population, for example that promoted positive wellbeing and sense of self and identity. However, there are several challenges associated with implementing female-specific interventions for autistic pupils in mainstream secondary schools, irrespective of the content, including allocation of limited resources, appropriate group dynamics, timely identification of needs and respecting different gender identities.

5.4. Implications for EP practice

5.4.1 Assessment and identification

Assessment and identification of needs is a core competency of EPs (BPS, 2017). Therefore, having an awareness that autistic girls may go unnoticed or be overlooked because their behaviours do not appear to significantly differ to their non-autistic female peers is important. In addition to using this knowledge for assessment purposes, it may be beneficial for EPs to communicate the role that gendered, developmental norms may have in concealing autistic girls' needs to raise awareness and promote understanding amongst school staff and families. The theory of intersectionality may be helpful for EPs to apply in this context as it considers the interaction of female autistic adolescents' multiple identities to result in their qualitatively unique experience and the barriers they may encounter (e.g., diagnosis). This allows for female autistic adolescents' needs to be recognised and understood in relation to them as whole individuals, as opposed to viewing each aspect of their identity in isolation (Saxe, 2017). Doing so might mean that autistic girls are identified earlier, which in turn has implications for timelier and perhaps more appropriate intervention.

5.4.2. Psychologically informed intervention

    5.4.2.1 Promoting belonging

Belonging is often conceptualised as a feeling achieved through happy, safe, and stable interpersonal relationships. It is theorised to be one of the key motivations amongst humans, and is associated with a range of positive emotional, cognitive, behavioural and wellbeing outcomes (Baumeister & Leary, 1995). Consequently, a lack of belonging is suggested to relate to poorer outcomes and psychological adjustment (Baumeister & Leary, 1995). In recognising the challenges female autistic adolescents are reported to experience in their interpersonal relationships at school, and the possible impact conflict and social isolation may have on individuals' sense of belonging, it might be considered that there is a role for EPs in championing the importance of belonging and promoting interventions to this effect. In addition to thinking with schools about how they can foster connectedness and build relationships amongst peers in the wider school community, offering a space for female

autistic adolescents to come together may be beneficial. According to Crompton et al., (2020) autistic-led social opportunities enable a sense of belonging through enjoyment, increased understanding, and being able to express their authentic autistic self. Such autistic spaces are also suggested to provide social support to autistic individuals in environments where they may be a social minority. This may be considered especially powerful for female autistic adolescents given that they are often underrepresented in mainstream secondary schools and may attempt to fit in and conceal their differences, for example through masking behaviours. In recognising staff's concerns that autistic girls' needs may not be prioritised for support, and possible challenges associated with limited resources and appropriate group dynamics, EPs may want to encourage schools to consider adopting a cluster model to this approach to intervention, whereby autistic pupils from different settings gather.

5.4.2.2 Developing a positive autistic identity

Psychological theories regarding social identity suggest that affiliation and connection with a group is associated with positive outcomes, including increased self-esteem and wellbeing (Haslam, Jetten, Postmes & Haslam, 2009). Whilst autistic individuals may receive group membership based on a shared diagnosis, this does not necessarily equate to a positive group identity, given that such membership may be associated with stigma (Turnock, Langley & Jones, 2022). However, it is suggested that when a person perceives their autistic identity positively, it serves as a protective mechanism for poor mental health (e.g., anxiety and depression), via improved collective and personal self-esteem (Cooper, Smith & Russell, 2017). Corden et al., (2021) further this by reporting that greater time elapsed since diagnosis is associated with greater satisfaction with autistic identity. In recognising that autistic females often receive their diagnosis later then autistic males (Russell et al., 2022) and in acknowledging the prevalence of internalising needs amongst this population, it might be considered that providing opportunities for autistic females to develop and positively define their autistic identities is especially important. EPs may wish to draw on this theory by sign-posting autistic females to support and/or advocacy groups, encouraging families to seek post-diagnostic support, working with schools to reduce potential stigma associated with autism, and using strength-based discourses of autism in their practice.

5.4.2.3 Developing a positive self-concept

Self-concept can be characterised as a collection of beliefs about oneself (Sebastian et al., 2008). Whilst a positive self-concept can serve as a protective factor for internalising and externalising behaviours, a negative self-concept can increase the risk (Ybrandt, 2008). Adolescence is considered a critical period for developing self-concept and is shaped, in part, through interactions with others; particularly peers (Sebastian et al., 2008). When thinking about some of the challenges female autistic adolescents may experience in their peer interactions, it is perhaps important to consider research which suggests that females' self-construal's are often dependent upon their interpersonal relationships (Cross & Madson, 1997). EPs may want to draw on interpersonal theories of self-concept in their practice and work with schools to think about how to foster positive relationships amongst female pupils as a possible means for enhancing self-concept, and thus psychological outcomes. Increasing the quality and quantity of direct contact between autistic and non-autistic peers may be a means to facilitate this (Turnock et al., 2022).

Recognising the influence peers' evaluative judgements can have on adolescents' self-concept is perhaps especially helpful in the context of female autistic adolescents, as staff perceived autistic girls to be conscious of their differences and concerned about how others viewed them. Given that autistic differences can be perceived negatively by non-autistic adolescents and motivate autistic individuals to engage in camouflaging behaviours (Humphrey & Lewis, 2008), it may be that increasing knowledge and understanding of autism is an important step for increasing acceptance and reducing possible stigma (Turnock et al., 2022). EPs may have a role in challenging pupils' perceptions of 'normal', raising awareness of, and encouraging the celebration of diversity, for example through training and psychoeducation. It might be considered that a valuable contribution can be made to the wellbeing of autistic girls by promoting their self-concept through increased feelings of acceptance at school (Pijl & Frostad, 2010; Ybrandt, 2008).

Theories of attribution may also be helpful to consider in relation to self-concept. These theories suggest that perceptions of causality, made from an individual's inferences of an event or behaviour, can impact future experiences and adjustment (Weiner, 1986; 1992). When individuals ascribe failure, for example in their interpersonal relationships, to internal

causes (e.g., ability, personality), as opposed to external causes (e.g., situation, others), this can result in lower self-esteem and self-worth (Weiner, 1986; 1992). This is arguably relevant for the current research as staff perceived autistic girls to blame themselves for the challenges they experience in their peer relationships. In recognising the relationship between characterological self-blame (i.e., beliefs that negative events occur as a direct result of one's own personal characteristics) and anxiety, depression, and loneliness (Graham & Juvonen, 1998; Janoff-Bulman, 1979), it might be considered that supporting autistic girls to reframe their attributions is worthwhile. In addition to drawing on their knowledge of cognitive-based interventions, EPs may want to encourage schools to adopt restorative practices to support pupils to understand the impact of conflict on others, and to learn conflict resolution strategies (Lodi et al., 2022). Teaching female autistic adolescents to practice self-compassion and be kind to themselves, regardless of their perceived failures (Neff, 2011), is another possible implication for EP practice.

5.4.3. Multi-agency working

Collaborative working with health professionals may also be beneficial. Like models of consultation which draw on social constructionist theories and deem individuals' knowledge to be constructed through the interactions they have with others (Burr, 2015; Wagner, 2016), it might be considered that having psychologically informed conversations with school staff and health professionals is an intervention in and of itself, for facilitating change in the way in which autistic girls' experiences are conceptualised. In recognising both the social and internalising needs characteristic of female autistic adolescents' experiences, EPs may want to consider adopting a two-pronged approach to intervention, that targets both wellbeing and social development.

5.4.4. Person-centred practice

Person-centred approaches to intervention were highlighted by staff as important. This ethos arguably aligns with EPs' values and role in ensuring that pupils' views and feelings are heard (BPS, 2017). When thinking about the context of the current research and autistic girls' social

and emotional development, it might be considered that EPs could use their skills in this area to support school staff to identify and work towards goals that are personally meaningful for pupils. In addition to empowering and giving ownership to young people, listening to autistic girls' perceptions of their needs, and involving them in target setting may be considered beneficial for increasing outcomes as participation in goal setting is thought to be associated with change (Prochaska & DiClemente, 1986).

5.4.5. Evaluation

Evaluation of progress is another area in which the current research may have implications for EP practice (BPS, 2017). EPs may want to explore with schools, different methods for monitoring the impact of social skills and friendship interventions for their autistic adolescents. This arguably adheres to schools' and EPs' needs to participate in evidence-based practice, whilst also offering possible research opportunities within the local authority for exploring male and female autistic pupils' responses to intervention. Increasing knowledge in this area, even on a small-scale, arguably contributes to a gap in the literature, and may also be considered beneficial for informing local practice.

5.5. Strengths and Limitations

The current research responds to calls for more research to focus on autistic females and autistic adolescents (Pellicano, Dinsmore & Charman, 2014). It addresses some of the limitations of previous research and contributes to the literature by gaining the perceptions of staff in relation to gender-specific needs and interventions for autistic adolescents; something which has not previously been explored. By interviewing staff from mainstream secondary schools, it might be considered that the findings are contextualised to real-life settings. This is arguably a strength given that interventions recommended and/or facilitated by EPs are largely school based (BPS, n.d). Finally, given that the majority of previous research exploring the needs and experiences of autistic females has derived from the girls themselves and/or their mothers (e.g., Cook et al., 2018; Cridland et al., 2014; Foggo & Webster, 2017, Myles et al., 2019; Ryan et al., 2021; Tierney et al., 2016; Tomlinson et al., 2022), it might be

considered that the inclusion of school staff is a strength as it offers a new and different perspective.

In terms of the limitations of the current research, participants were not asked to disclose any personal relationships they had with autism (e.g., autistic relative). This may influence the findings as it is possible that participants were familiar with autistic individuals outside the school context, and this may have shaped their narratives. Another possible limitation is that it is difficult to ascertain whether the responses of school staff were based on their first-hand experiences of working with autistic adolescents, or whether they were recapitulating what they may have learned, for example, in autism training. It is also important to acknowledge the potential motivation of school staff for participating in the research and consider how these may have influenced the way in which they responded to questions. Despite there being no incentives for participation, it is plausible that schools may have perceived the research as an opportunity to seek additional training and/or access to an intervention for autistic females. Finally, in discussing autistic pupils as a collective, the researcher recognises that there are nuances in autistic individuals' experiences that are not accounted for.

5.6. Future Research

Reflexive thematic analysis encourages the researcher to reflect on their personal dispositions and consider how this may influence their understanding of and engagement with the data (Braun & Clarke, 2022). In recognising how gender may be associated with certain lived experiences (e.g., being an adolescent female) or political views (e.g., feminism), it might be interesting to consider how the gender of participants may shape their narratives. For example, it may be that female staff are perhaps more attuned to the social needs and experiences of female autistic adolescents than male staff, owing to their own personal experience of being an adolescent female. This may have implications, for example, in terms of identification and implementation of support for autistic girls, and for highlighting possible training needs for male staff.

Within autism research, there is increasing pressure to enable the voices of service-users in decisions regarding the support they receive (Long, Panese, Ferguson, Hamill & Miller, 2017).

Future research may therefore want to adopt an action research framework (Altrichter, Kemmis, McTaggart & Zuber-Skerritt, 2002), whereby female autistic adolescents are involved in the planning and design of a female-specific intervention (e.g., structure and content). Evaluating the outcomes for female autistic adolescents after a period of participating in said intervention, and using the data to inform any revisions would be valuable. Inclusion of autistic female adolescents in the construction of a female-specific intervention would likely mean that it is more relevant to their lived experience.

5.7. Conclusions

Staff perceive female autistic adolescents to have some unique experiences in their social communication and interaction, and emotional wellbeing and mental health, relative to male autistic adolescents. This therefore implies that, as a collective cohort, they may benefit from differential support. However, challenges associated with implementing female-specific interventions in schools, and discourses that promote a needs-led approach, suggest that holistic consideration of the individual's circumstances and needs is of the upmost importance. Such findings arguably have implications for the assessment, formulation, intervention, and evaluation practices of EPs.

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Gender-specific needs and interventions for autistic adolescents in mainstream secondary schools.

Part 3: Major Research Reflective Account
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1. Overview

This critical appraisal is written in the first person to reflect the active role I had in the process and development of the research (Webb, 1992). It intends to offer a reflective and reflexive account of the decisions made throughout various stages of the research journey, including the development of the research questions, conducting the literature review, ontological and epistemological considerations, data collection and analysis, and possible ethical issues. Consideration is also given to the contributions the current research makes to knowledge, in relation to literature, future research, and professional practice. Dissemination of the research findings is also discussed.

2. Part A: Critical account of the development of the research practitioner

2.1. Developing the rationale and research questions

Undertaking a placement year at the Centre for Research in Autism and Education (CRAE) during my undergraduate studies was instrumental in shaping my interest in autism, particularly autistic girls. Choosing to focus on this topic for one of my academic assignments in the first year of the doctoral programme further highlighted to me the inequalities autistic girls may experience from possible gender and cultural biases. It was during my reading for this assignment that I learned about The Girls Night Out model, a social skills and self-care curriculum for autistic girls (Jamison & Schuttler, 2015; 2017). I found the concept of a gender-specific intervention for promoting social development fascinating as it was novel and unfamiliar. Much of the recent literature exploring gender differences in autism has seemingly focussed on the identification, behavioural presentation and needs of autistic females, but research investigating how autistic females respond to, and can be best supported through intervention, has perhaps received less attention.

In my second-year fieldwork placement, I encountered several adolescent females who presented as extremely anxious and experienced challenges within their friendship and peer groups. They often had a diagnosis of autism or were awaiting assessment from the Neurodevelopmental Team and were receiving support, either from school or Child and Adolescent Mental Health Services (CAMHS) for their internalising needs. Despite reporting

challenges in their interpersonal relationships, very few were involved in interventions that specifically targeted their social skill development. Knowing that The Girls Night Out model had been designed with this population in mind (Jamison & Schuttler, 2015; 2017), I was curious to find out what school staff thought about the notion of gender-specific social skills interventions for autistic adolescents. The potential controversy surrounding gender-specific interventions, particularly within school environments which may seek to promote inclusion for a range of gender identities, further increased my interest in this area.

Conversations during thesis planning discussions were helpful for encouraging me to reflect on my initial research questions. It was suggested that before exploring the perceptions of school staff in relation to gender-specific interventions, it might be important to first unpick whether school staff perceive there to be any gender differences in the social communication and interaction needs of autistic adolescents. I was grateful that this was highlighted as it made me become more aware of the biases that I have as a researcher, for example, in terms of the knowledge that I hold. It made me think about how I perhaps assumed that what I have learned from the literature around possible gender differences in the presentation of autism, is the same as that experienced by school staff in their setting. Yet, it is possible that school staff may not have been aware of or may not have perceived there to be gender differences in autism, which would perhaps have implications for exploring their perspectives of gender-specific interventions for this population of pupils. This experience may be understood in relation to constructivist theories of knowledge, which posit that individuals' understanding of phenomena is shaped by their own experiences and perceptions of events (Narayan, Rodriguez, Araujo, Shaqlaih & Moss, 2013).

Obtaining feedback at the early stages of the research development was also helpful for reflecting on the terminology I was using and why. Consideration was given to the implications of focussing on girls diagnosed as autistic, as opposed to girls who do not have a diagnosis but who may experience social communication and interaction needs. Whilst recognising that a diagnosis is not necessarily required to access social skills interventions in schools, for me, specifically concentrating on autistic girls was important because of the wider experiences associated with being an autistic girl, including possible masking behaviours and internalising needs (Hull, Petrides & Mandy, 2020). I was also mindful that possible androcentric biases in knowledge, diagnosis, and intervention for autistic individuals

(Dworzynski, Ronald, Bolton & Happé, 2012; Hull & Mandy, 2017; Kreiser & White, 2014) may not extend to or be pertinent for the experiences of non-autistic girls who have social communication and interaction needs.

2.2. Literature review

Something which I grappled with during the research process was understanding the various types and approaches towards literature reviews (Grant & Booth, 2009). I initially wanted to adopt a narrative style as presenting a broad perspective of the research on autism and girls in relation to their social development and friendships felt appropriate (Green, Johnson & Adams, 2006). However, given that part of the literature review was to focus on interventions, I also considered the possibility of conducting a systematic review to answer questions pertaining to the effectiveness of social skills interventions for autistic males and females (Green et al., 2006). Discussing this dilemma with my supervisors and thinking together about what I wanted to find out from the literature, was helpful for getting me to refine the objective and purpose of my review. After lots of indecisiveness and some careful deliberation, I decided that my intention was not to arrive at a comprehensive understanding of the state of the research investigating social skills interventions, but rather to learn more about whether consideration is given to the role of gender in the presentation, needs and support available to autistic adolescents. Since I was going to use the literature to build up a picture of the 'problem' and present a plausible truth, a narrative style review was adopted (Greenhalgh, Thorne, & Malterud, 2018). I was aware that some critics associate narrative reviews with bias, and so I employed a systematic approach to searching the literature, by using explicit search terms and inclusion and exclusion criteria, in attempt to mitigate this (Siddaway, Wood & Hedges, 2019).

In the narrative literature review, I wanted to cover research pertaining to autism, adolescence, gender, social development, and interventions. However, I found it extremely challenging to structure the review in a way that coherently linked all these concepts together. It was difficult and overwhelming to navigate the sheer volume of literature generated in relation to these concepts as they might be considered fields of interest in their own right. One of my supervisors likened it to having several main characters in a play and

told me, it was up to me as the playwriter to choose how the characters interact and to decide on the story I wanted to tell. One of the best pieces of advice I received when trying to negotiate this was to choose one headline. Given that my idea for the research was sparked by my interest and experiences with autism; autism was the lens through which the review was written.

Exploring the autism literature was arduous and refining my search terms and inclusion and exclusion criteria was a time-consuming process. I am mindful that by not including additional terms alongside 'intervention' and 'programme' in my systematic search (see Appendix 1), that I have perhaps not captured all the available literature in this area. For example, research generated by the term 'training'. However, since a narrative approach to the literature review was adopted and the intention was not to provide a synthesis of all the available evidence, it might be argued that this is less problematic (Booth, Sutton, Clowes & Martyn-St James 2021; Siddaway et al., 2019). When thinking about why I did not include 'training' as a search term, it may be helpful to acknowledge and explore my own personal construct of 'training' (Kelly, 2003). I associate 'training' with reward-based or behaviourist approaches to skill development, like those often used with animals, and I wonder if applying this term in the context of interventions for autistic individuals perhaps felt uncomfortable as 'social skills training' may be considered to focus more on modifying social behaviour, rather than promoting social understanding. However, I recognise that my conceptualisation of 'social skills training' may be different to other researchers, and it is possible that inclusion of this search term may have generated additional literature that is not included in the current review. Although I sought advice with regards to the process of completing a systematic search, if I were to carry out the literature review again, I would discuss my search terms in supervision. This may help me to be more consciously aware of the constructs I hold, provide an opportunity to gain a different perspective, and possibly reframe and challenge my thinking as to why I might choose certain search terms over others.

2.3. Ontology and epistemology

The literature points to possible inequalities in diagnosis and intervention for autistic females as historically, autism research tended to derive from all male samples (Shefcyk, 2015;

Thompson, Caruso & Ellerbeck, 2003). Given that gender-specific support for developing social skills and friendships may enhance female autistic adolescents' lives, it might be argued that the focus of the current research aligned with feminist objectives (Kiguwa, 2019). Feminist theories towards ontology and epistemology were therefore considered. However, from reading around this area, I learned that research on gender is not necessarily synonymous with feminist approaches to research (Kiguwa, 2019). Whilst I wanted to use the term 'gender' to reflect the social and cultural characteristics associated with being male or female (Gentile, 1993), I did not choose to analyse gender as an organising structure, embedded within socio-political contexts (Kiguwa, 2019). This was because autism, rather than gender, was the lens through which the research was viewed. A feminist-orientation to ontology and epistemology was therefore deemed inappropriate.

Other theoretical positions considered included positivism, social constructionism, and critical realism. Positivist approaches to the research were discounted because adopting this approach would mean conceptualising autism as a stable construct that can be objectively and numerically measured (Michell, 2003). Whilst recognising that having a diagnostic criterion for autism may compliment positivism, it can be argued that because there is currently no biomarker for autism, and diagnostic procedures predominantly rely on clinical judgement, there is an element of subjectivity involved (National Institute for Health and Care Excellence, 2017). In stark contrast to this, adopting a social constructionist approach would mean conceptualising autism as a product of language and discourse (Burr, 2015). Whilst recognising that time and culture play a role in shaping knowledge about autism, for example in relation to the labels and diagnostic criterion used (American Psychiatric Association [APA], 2013; World Health Organisation [WHO], 2022), and evolving theories about the origin of autism (Fombonne, 2003), it could be argued that a social constructionist approach does not perceive autism to be a real thing that exists outside of the constructions generated by people (Burr, 2015). For me, critical realism was the most appropriate theoretical position to adopt as it acknowledges both the objective reality of autism as an individual difference, and the subjective influence of the socio-historical context in the generation of knowledge about autism (Bhaskar, 2011).

Given that a critical realist stance recognises that reality is only ever partially accessible, it arguably compliments a contextualist epistemological approach. Contextualism posits that no

single method can access the truth because what is deemed truthful is context dependent and therefore always local and provisional (Braun & Clarke, 2013; Madill, Jordan & Shirley, 2000). This allowed participants' own versions of reality, based on their experiences of the autistic pupils known to them in school, to be accepted as valid (Madill et al., 2000).

2.4. Methodological and design considerations

In keeping with the critical realist ontology and contextualist epistemology, semi-structured interviews were chosen as the method of data collection. Semi-structured interviews often rely on rapport between the interviewer and interviewee, and I was mindful of how this may be affected by my decision to conduct the interviews virtually (Willig, 2013). However, given that school staff have become more familiar with online working since the Covid-19 pandemic, I was hopeful that this method of interview would not be off-putting for potential participants. Instead, it might be considered that conducting interviews via Microsoft Teams had several advantages including being less time consuming, having inbuilt recording and transcribing functions, and not being limited by geography.

When developing my interview schedule, I was encouraged to think about how the interview questions which referred to 'males' and 'females' could be phrased to recognise that some autistic pupils may not be cisgendered (Cooper, Smith & Russell, 2018). It was decided that it would be helpful to provide a caveat within the interview schedule explaining that within the context of the current research the term 'female' would be used to refer to pupils who identify as girls, regardless of their biological sex (see Appendix 10). However, I recognise that by trying to be inclusive of individuals who identify as male or female, individuals who do not identify as either gender may be simultaneously excluded. When thinking about the possible implications of gender-specific interventions for non-binary or gender fluid autistic adolescents, it may be helpful to consider interventions designed specifically for autistic females to add to the range of social skills interventions offered to autistic adolescents in school, rather than as a replacement. This means that autistic adolescents who do not identify as female, including those who identify as non-binary or gender fluid, can still have their needs met via traditional social skills interventions that do not differentiate based on gender. However, it might be considered that the availability of female-specific interventions allows

for the unique challenges associated with being a female autistic adolescent to be respected (Carpenter, Happe & Egerton, 2019; Hebron & Bond, 2019).

Whilst I foresaw and made amendments to try and reduce the linguistic variability associated with terminology related to 'males' and 'females', I perhaps naïvely, did not anticipate the multiple ways in which participants would interpret the term 'gender-specific interventions' (Willig, 2013). During the interviews, I found that some of the conversations with participants centred around autistic adolescents' gender identity, perhaps because the participants and I had a different understanding of the concept, or perhaps because this is something that school staff were experiencing in their settings. Whilst semi-structured interviews provided scope for participants to raise issues that had not been anticipated, and for me to clarify what I meant by 'gender-specific interventions' (Braun & Clarke, 2013), if I were to do this research again, I would explain the concept of 'gender-specific interventions' as part of my interview schedule. In hindsight, the term 'female-specific interventions' may have been more accurate, and less ambiguous for participants to understand. Piloting the interview schedule may have been helpful for foreshadowing potential 'problems' and for providing an opportunity to make informed changes to refine and develop the wording of the questions (Busetto, Wick & Gumbinger, 2020; Kallio, Pietilä, Johnson & Kangasniemi, 2016).

I initially sought teaching/learning support assistants as participants for the research because of the close working relationships they have with pupils and their involvement in delivering interventions. However, because the interviews took place during working hours, I wanted to gain permission from Head Teachers and Additional Learning Needs Co-ordinators (ALNCos) to ensure that they would be happy to release consenting participants from their classroom responsibilities. I also initially obtained gatekeeper consent from Directors of Local Education Authorities (LEAs) before contacting Head Teachers. Recruiting this way proved to be unsuccessful and after approximately three months of trying I only had two participants. When thinking about why this recruitment method was ineffective, it was helpful to reflect on the chain of gatekeepers and whether, in trying to be thorough in my approach, I had perhaps unintentionally created barriers for myself. This prompted me to revise and resubmit my ethics application to extend the participant pool to include ALNCos and to change my gatekeeper to Principal Educational Psychologists (PEPs). One advantage of including ALNCos was that because their role does not tend to involve directly supporting pupils in the

classroom, they perhaps had more flexibility to participate in the research. ALNCos were deemed appropriate participants because of their role in co-ordinating support and interventions for pupils with Additional Leaning Needs (ALN), and because of their close working relationships with Educational Psychologists (EPs).

A poster advertising the research was also shared on social media (see Appendix 9). This was circulated in attempt to increase the potential participant pool by advertising the research more widely than Wales. Whilst recognising that there may be differences in the educational systems and legislation across the UK in relation to additional learning needs (Additional Learning Needs and Education Tribunal (Wales) Act, 2018; Children and Families Act, 2014; The Education (Additional Support for Learning) (Scotland) Act, 2004), it might be considered that because the current research aimed to explore the perceptions of staff as opposed to their practice, the geographical placement of participants was not central to the findings. Moreover, it could be argued that because autistic girls share a diagnostic label, there is likely to be a degree of similarity in their needs, regardless of where in the UK they attend mainstream secondary school (APA, 2013; WHO, 2022). This approach also arguably aligned with the contextualist epistemology of the research which allowed for the 'truth' to be deemed as context dependent (Madill et al., 2000).

Advertising the research on social media was perceived to have several benefits, including being more time effective. However, recruiting this way for the current research proved unsuccessful. Upon reflection, I question how appropriate social media was for recruiting participants to interview, because unlike questionnaire measures which can be easily adapted and conveniently accessed online, anyone interested in participating was asked to contact the researcher for further information (e.g., Participant Information Sheet, Consent Form). It might be considered that this made the process more laboursome for potential participants and as a result they were perhaps less likely to follow through with it. Whilst the poster was shared with relevant professional groups on social media, it might be considered that these were perhaps too generic. In hindsight, UK-wide recruitment of staff may have been more lucrative if groups with an active intertest in autism were targeted (e.g., National Autistic Society). I also wondered whether challenges recruiting this way were perhaps related to a limited 'presence' on social media prior to conducting the research. It may have been

beneficial to begin to network and have more engagement on social media in the earlier stages of the doctorate to establish connections with appropriate professionals in advance.

2.5. Data collection, analysis, and interpretation

Something that was particularly challenging during the data collection process, was trying to encourage participants to speak about what might have been considered as taken for granted knowledge. Perhaps owing to their ALN roles, their working relationships with autistic adolescents and my profession and interest in the subject, it is possible that assumptions were made about the level of knowledge we both held. I felt that I had to sometimes ask naïve questions to encourage staff to talk about the needs of, and support for, autistic adolescents and worried about how this affected their perceptions of me, for example in terms of my competency. Upon reflection, I wonder if participants' perceptions of my competency mattered to me, as competence is one of the core ethical principles for the practice and conduct of psychologists (British Psychological Society, 2018), and as a Trainee Educational Psychologist (TEP), a certain skill set, and level of knowledge may be expected. However, it could be argued that my concerns about participants' perceptions of my competency were appropriate, as it perhaps meant that the power distribution in the interviewer-interviewee relationship was less hierarchical, and therefore more conducive to the co-production of knowledge; something which qualitative researchers aspire to (Karnieli-Miller, Strier & Pessach, 2009). Learning that avoiding being the 'expert' is a challenge even experienced qualitative researchers contend with, was helpful for making sense of this experience (Braun & Clarke, 2013).

Braun and Clarke (2013; 2022) emphasise understanding the subjective and active role of the researcher as essential in Reflexive Thematic Analysis. Thinking about my ideological assumptions (e.g., feminism), social identities (e.g., neurotypical, cisgender female), and training and experience (e.g., CRAE, TEP) was important for recognising how the collection and interpretation of data may be influenced. Whilst qualitative paradigms do not consider the active role of the researcher as a limitation, it is interesting to think about how I may have implicitly and explicitly controlled the data produced (Braun & Clarke, 2013; 2022). Semi-structured interviews allowed for flexibility and unplanned questions to be asked, and with

hindsight I can see how I was perhaps drawn to further explore certain aspects of a participant's developing account; either because of its relevance to the research questions, or possibly because it resonated with the literature that I had immersed myself in. Transcribing the data provided a novel opportunity for me to observe myself as an interviewer as the interviews were video recorded. I became aware of how my non-verbal communication (e.g., facial expressions) may have unintentionally conveyed my level of agreement with participants' perspectives, and possibly reinforced or encouraged them to continue their narrative in a particular direction.

Throughout the doctoral training, and even in my undergraduate studies, I have had multiple opportunities to engage with thematic analysis. My confidence and approach towards this method of analysis has perhaps been my biggest development as a researcher. On reflection, I can see that my initial understanding and use of thematic analysis in previous research projects was very surface level and perhaps offered more of a description of the data, as opposed to an interpretation or analysis of the data. Through practice and some trial and error, I have learned the techniques that work well for me at each of the analytic stages. I think this greatly benefitted me during the current research as I felt somewhat comfortable and familiar with the process. The dataset for this research was the largest I had worked with and still led to challenges, but I felt more equipped and secure in the tools used. I would encourage anyone who adopts Reflexive Thematic Analysis to not be concerned about the 'correct way' of doing things, but to try multiple methods for familiarising yourself with the data (e.g., bullet points, images, written prose), coding the data (e.g., using a software like Qualtrics, using the comment function on Microsoft Word, manually highlighting and labelling printed transcripts), and developing initial themes (e.g., electronically or via paper and post-it notes), and to trust your own judgement and the process.

2.6. Ethical considerations

Braun and Clarke (2013) encourage qualitative researchers to think about possible ethical implications of research topics and questions. As a neurotypical researcher, I was aware that I had limited access to, and understanding of, the social experiences of autistic females. Something which I thought about at length throughout the research process was whether, by

focussing on interventions that aim to promote social skills and friendships, I was reinforcing neurotypical social norms as optimal. The notion that the research may not resonate with or be deemed unethical by some of the autistic community was uncomfortable. However, it might be considered that social and friendship development falls within the category of 'developing skills to manage in day-to-day life', which was identified as a research priority by autistic adults and parents (Pellicano, Dinsmore & Charman, 2014). With more time, I would have liked to have sought the views of members from the autistic community to explore how much support there might be for the research. This may have involved adopting a participatory research framework, whereby the community that are the subject of the research (e.g., autistic females) are given some control of the research agenda and process (Fletcher-Watson et al., 2019).

3. <u>Part B: Contribution to knowledge and dissemination</u>

3.1. Contribution to the literature

Historically, much of the funding for autism research in the UK was awarded for research that focussed on biology, brain, and cognition (56%). This was in stark contrast to the research priorities of stakeholders within the autism community, who highlighted autism across the lifespan and autistic women and girls, alongside other topics, as being important (Pellicano et al., 2014). Given that the current research adopts a gendered, developmental lens towards interventions that aim to promote social skill and friendship development for autistic adolescents, it might be considered that it adds to an area of the literature that may have been previously underserved.

The literature review points to a possible female specific experience in relation to the social needs and challenges navigated by autistic adolescents in mainstream secondary schools. This is often characterised by conflict in their friendships and exacerbated by the transition from primary to secondary school (Cook, Ogden & Winstone, 2018; Cridland, Jones, Caputi & Magee, 2014; Milner, McIntosh, Colvert & Happé, 2019; Sedgewick, Hill & Pellicano, 2019; Ryan, Coughlan, Maher, Vicario & Garvey 2021; Tierney, Burns & Kilbey, 2016). Research suggests that the education female autistic adolescents receive, to support them to develop

their social and friendship skills, is perceived by autistic women and mothers of autistic daughters to be inadequate due to it often being based on understandings of a male phenotype of autism or targeting younger pupils (Baldwin & Costley, 2016; Fowler & O'Connor, 2021; Gray, Bownas, Hicks, Hutcheson-Galbraith & Harrison, 2021). An association between autistic females' social experiences, potential masking behaviours, and their mental health needs was also highlighted within the literature (Cook et al., 2018; Tierney et al., 2016; Tomlinson, Bond & Hebron, 2022).

A review of the literature found that most of the interventions for autistic adolescents, that aim to develop social skills and promote friendships, do not consider gender as an integral factor. There appears to be only one intervention within the literature that attempts to specifically target the needs of female autistic adolescents (Jamison & Schuttler, 2017), and only three studies that have explored possible gender differences in the responses of autistic adolescents to social skills interventions (McMahon, Vismara & Solomon, 2013; McVey et al., 2017; Ko, Schuck, Jimenez-Muñoz, Penner-Baiden, & Vernon, 2022). This demonstrates that research in this area is scant and suggests that the impact of such interventions for the social development of female autistic adolescents specifically, remains largely unknown (McMahon et al., 2013; McVey et al., 2017; Ko et al., 2022).

The current empirical research contributes to the literature by exploring the perceptions of ALN staff in relation to possible gender-specific needs and interventions for autistic adolescents in mainstream secondary schools. Participants were a key professional group involved in identifying and supporting the needs of female autistic adolescents, whose voices were previously missing from research. In addition to offering a new and different perspective, capturing the views of staff helped to triangulate findings generated from previous research with autistic female and parent participants (e.g., Cook et al., 2018; Cridland et al., 2014; Foggo & Webster, 2017, Milner et al. 2019; Myles, Boyle & Richards, 2019; Ryan et al., 2021; Tierney, Burns & Kilbey 2016; Tomlinson et al., 2022). Encouragingly, findings from the empirical study echoed those of previous research, in terms of acknowledging the challenges female autistic adolescents may experience in their social communication and interaction. This is reassuring as it suggests that ALN staff are aware of the difficulties some autistic girls may experience, for example within their interpersonal relationships at school, and that there is perhaps consistency in the knowledge and

understanding of autistic females' needs amongst families and ALN staff in mainstream secondary schools in Wales.

A novel finding from the empirical study was the perception that the extent of female autistic adolescents' needs in school is perhaps clouded by gender and developmental stereotypes. The notion that female adolescents' friendships can be turbulent, coincide with pubescent and hormonal changes, and associated with extreme displays of emotion, means that the challenges autistic girls may encounter navigating their interpersonal relationships and managing conflict may be perceived as typical for their demographic and not always considered a manifestation of underlying social communication and interaction needs. Similarly, the idea that following and copying trends is common practice for adolescent females, may mean that the efforts autistic girls go to, to mask or camouflage their differences can go unnoticed. Recognising that the presentation of autistic girls may somewhat mirror the expected continuum of behaviour for female adolescents, may contribute towards understanding why female autistic adolescents often experience late diagnosis (Russell et al., 2022; Shattuck et al., 2009).

The perceptions staff held that approaches to social skills interventions in mainstream secondary schools appear to be appropriate and effective for both male and female autistic adolescents, add to the literature by suggesting that staff do not perceive there to be a need for gender-specific *social skills* interventions. However, staff recognised that autistic girls experience unique challenges related to their self-esteem, resilience, and confidence, and promoting female autistic adolescents' emotional wellbeing and sense of self and identity, through targeted intervention was considered beneficial; a novel finding from the empirical study. Discussing autistic girls' presentation and needs in relation to their self-concept (Cross & Madson, 1997; Sebastian, Burnett & Blakemore, 2008; Ybrandt, 2008), autistic identity (Corden, Brewer & Cage, 2021), social exclusion (Cresswell, Hinch & Cage, 2019) and self-perceptions of social functioning (Bellini, 2004; Bellini, 2006), is another way in which the current research contributes to the literature.

Other findings from the empirical study that contribute to the literature are the challenges staff perceived in relation to implementing gender-specific interventions for autistic adolescents in school. These included timely identification of autistic girls' needs, prioritising needs within school's limited resources, having appropriate group dynamics, respecting

autistic adolescents' different gender identities, and recognising and responding to autistic girls' individual needs.

3.2. Contribution to further research

Exploring whether consideration is given to the role of gender in both the content and outcomes of social skills and friendship interventions for autistic adolescents, highlighted that research in this area is very much in its infancy. Very few studies identified as relevant for the literature review explicitly sought to examine gender differences in autistic adolescents' response to social skills interventions, and for those studies that did, it might be considered that there were several limitations (McMahon et al., 2013; McVey et al., 2017; Ko et al., 2022). Additional research in this area may therefore be warranted to aid understanding of the effectiveness of social skills interventions for both male and female autistic adolescents.

Future research may also want to pilot or more thoroughly investigate gender-specific interventions, like the Girls Night Out model (Jamison & Schuttler, 2015; 2017), for example by utilising a randomised controlled trial design, to contribute towards an evidence-base. Adopting an action research framework (Altrichter, Kemmis, McTaggart & Zuber-Skerritt, 2002), whereby female autistic adolescents are involved in the planning and design of a female-specific intervention, evaluating the outcomes after a period of implementation, and using the data to inform any revisions would also be a valuable contribution to research.

The prevalence of poor mental health and wellbeing within the female autistic adolescent population was prominent within the literature and staff's accounts. In recognising that internalising needs characterise some autistic females, and in considering research that suggests an association between anxiety and self-perceptions of social functioning (Bellini 2004; 2006) and poor self-concept (Cross & Madson, 1997), future research may want to explore the impact of social skills interventions on autistic girls' mental health and wellbeing. For example, alleviation of anxiety and more positive perceptions of self. Whilst some research has investigated the effects of social skills interventions on anxiety in samples of autistic adolescents (Hill et al., 2017; McVey et al., 2016; Schohl et al., 2014), there may be scope for future research to look at gender differences within this.

Previous research that gathered parents and autistic women's experiences of support for autistic females highlighted their dissatisfaction with existing services and interventions (Baldwin & Costley, 2016; Fowler and O'Connor, 2021). However, to the researcher's knowledge, the current research is the first to explore *perceptions* of gender-specific interventions for female autistic adolescents. ALN staff were identified as a relevant participant group for the current research due to their knowledge and understanding of the school system as a context for facilitating interventions and for potentially exacerbating or alleviating autistic girls' needs. However, future research may want to build on this by exploring other stakeholders' perspectives of gender-specific interventions for female autistic adolescents, by including members from the autistic community, for example, autistic girls themselves and/or their parents. This was not explored in the current research as it was felt that learning about staff's understanding of autistic girls' needs, exploring their intention and ability to promote change through gender-specific interventions, and identifying possible opportunities for professional development was an important first step.

3.3. Dissemination of findings

Participants will be provided with a summary of the research findings. This will include a synopsis of the literature review and empirical research. By offering a summary of the findings in an accessible format, I hope that education professionals will consider the relevance of the research for their domain and practice. At the very least, I hope that the findings serve as a discussion point and spark conversations between professionals. Similarly to how new knowledge and understanding is generated through the interviewer-interviewee interaction (Willig, 2013) and narratives and constructions can be reframed through consultation (Ravenette, 2003; Wagner 2016), talking about possible gender differences in the experiences and needs of autistic adolescents, may start to expand people's thinking and lead to consideration and review of existing interventions in schools. It might also be considered that as future alumni of the Doctorate in Educational Psychology at Cardiff University, there may be the possibility to follow in previous trainees' steps by sharing my thesis findings with other cohorts, for example through forums such as mini conferences.

When I begin my role as an EP in a local authority in September, I intend to engage in discussions with my colleagues to consider how the knowledge produced through this research can be applied at a local level. For example, it may be that there is scope to design and deliver training that highlights possible gender differences in the presentation of autism, and the notion that the social landscape and stereotypes associated with females, particularly during adolescence, can be conducive to concealing autistic girls' needs. There may also be opportunities to work collaboratively with schools in a research capacity to evaluate the effectiveness of the social skills interventions they currently use for supporting both male and female autistic adolescents.

Publication of the research is also important to consider in terms of its reach and impact. The current findings are likely to be valuable for a range of professionals including EPs, ALNCos, support staff, advisory teachers, and mental health colleagues. Members from the autistic community might also be interested to learn about the considerations afforded to the role of gender in social skills and friendship interventions, and the perceptions of ALN staff in relation to whether there is a need for and capacity to offer gender-specific interventions in schools. In thinking about appropriate sources of publication and the intended audience, it may be that various methods of publication are required. For example, an academic article in a relevant peer-reviewed journal such as *Educational Psychology in Practice, Autism* or the *Journal of Autism and Developmental Disabilities* would likely be accessible for EPs. An opinion piece/position paper might also be a possibility. In contrast, a blog or contribution to a newsletter via an autism support or community group may be helpful for disseminating the research to autistic individuals and their families.

3.4. Contribution to professional practice

The literature review points to a possible female specific experience in relation to the social needs and challenges navigated by autistic adolescents in mainstream secondary schools. EPs therefore need to understand how gender and age can impact female expressions and rates of autism diagnosis and maintain an ethical awareness in their practice by reflecting on potential biases or stereotypes they may hold.

Given that autistic females' experiences of support are often considered unsatisfactory (Baldwin & Costley, 2016; Fowler & O'Connor, 2021), EPs may wish to enhance their practice and seek to positively impact service users' experiences by including autistic girls and their families in decisions regarding the support they receive.

Research exploring gender differences in response to social skills and friendship interventions is scant. This may have implications for EPs' evidence-based practice as it might be considered that the impact of such interventions for the social development of female autistic adolescents specifically, remains largely unknown. Highlighting this may contribute to the professional practice of EPs' by encouraging them to think about the appropriateness of said interventions for autistic girls. It also places an importance on the need to monitor and evaluate autistic girls' progress for ensuring that any intervention implemented is sufficient for meeting their social communication and interaction needs.

Findings from the empirical research study suggest that school staff perceive social and internalising needs to be characteristic of female autistic adolescents' experiences. EPs may want to consider the implications this might have in terms of approaches to intervention. Liaising with mental health colleagues and advisory teachers might be beneficial for adopting a collaborative, multi-agency approach that views autistic girls as holistic individuals, rather than perceiving social and internalising needs as separate, and responding to them in isolation.

The importance of adopting person-centred approaches was also emphasised in findings from the empirical study. Therefore, interventions should target goals that are identified as personally meaningful and purposeful for autistic girls, and evaluation may involve monitoring autistic girls' progress against these targets.

Finally, the empirical research highlighted potential barriers to implementing interventions specifically for autistic girls in school. One such barrier was the underrepresentation of autistic girls in a single mainstream secondary school setting. This finding may contribute to professional practice by encouraging EPs and schools to think more creatively about how they might pool resources together, for example by adopting a cluster model to intervention.

4. Concluding Reflections

Reflecting on the research process has provided several areas for learning. Firstly, I have been encouraged to think about and consider the possible implications of adopting certain terminology and have come to recognise the importance of language for creating a shared understanding between myself as the researcher, the participants, and any readers of the research. Secondly, the challenges I experienced during the recruitment process, although frustrating at the time, have made me more aware of the potential impact decisions regarding participant sample, gatekeeper consent and methods of recruitment can have on the course of the research. Finally, and perhaps most rewardingly, I have learned about myself; mostly in terms of the skills and knowledge I have or need to continue to develop, and the biases and values I hold, which may contribute to my practice as both a researcher and psychologist. The findings from this thesis arguably contribute to knowledge, both in terms of literature and professional practice, and with the appropriate dissemination, will hopefully increase the recognition of female autistic adolescents' needs and enhance the support available for their holistic development in mainstream secondary schools.

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Appendices

Appendix 1: Details of the Systematic Literature Search

Table 1

Search terms.

Search Terms			
Autis* OR 'Autism Spectrum Disorders' adj4 w/4 NEAR/4 n4 4 child* OR teen* OR adolescen* OR young person OR young people OR youth OR CYP	Boy* Girl* Male* Female* Sex difference* Gender difference*	Social communication* Social interaction* Social behaviour* Social behavior* Social* competen* Social* skill* Friend* Peer* adj3 w/3 NEAR/3 n3 3 (interact* OR relation* OR engag*)	Intervention* Program*

Table 2

Search strings used in each database.

Database	Search String
Scopus	(TITLE-ABS-KEY (autis* W/4 (child* OR teen* OR adolescen* OR "young person" OR "young people" OR youth OR cyp)) AND TITLE-ABS-KEY (boy* OR girl* OR male* OR female* OR "sex difference*" OR "gender difference*") AND TITLE-ABS-KEY ("social communication*" OR "social interaction*" OR "social behaviour*" OR "social behavior*" OR "social* competen*" OR "social* skill*" OR friend* OR peer* W/3 (interact* OR relation* OR engag*)) AND TITLE-ABS KEY (intervention* OR program*))
Web of science	Autis* NEAR/4 (child* OR teen* OR adolescen* OR "young person" OR "young people" OR youth OR cyp) (Topic) AND boy* OR girl* OR male* OR female* OR "gender difference*" OR "sex difference*" (Topic) AND "Social communication*" OR "Social interaction*" OR "Social behaviour*" OR "Social behavior*" OR "Social* competen*" OR "Social* skill*" OR Friend* OR Peer* NEAR/3 (interact* OR relation* OR engag*) (Topic) AND intervention* OR program* (Topic)
BEI	(Autis* n4 (child* OR teen* OR adolescen* OR young person OR young people OR youth OR cyp)) AND (boy* OR girl* OR male* OR female* OR "sex difference*" OR "gender difference*") AND ("Social communication*" OR "Social interaction*" OR "Social behaviour*" OR "Social behavior*" OR "Social* competen*" OR "Social* skill*" OR Friend* OR Peer* n3 (interact* OR relation* OR engag*)) AND (intervention* OR program*)
ERIC	(Autis* n4 (child* OR teen* OR adolescen* OR young person OR young people OR youth OR cyp)) AND (boy* OR girl* OR male* OR female* OR "sex difference*" OR "gender difference*") AND ("Social communication*" OR "Social interaction*" OR "Social behaviour*" OR "Social behavior*" OR "Social* competen*" OR "Social* skill*" OR Friend* OR Peer* n3 (interact* OR relation* OR engag*)) AND (intervention* OR program*)
ASSIA	noft(Autis* 4 (child* OR teen* OR adolescen* OR "young person" OR "young people" OR youth OR cyp)) AND noft(boy* OR girl* OR male* OR female* OR "sex difference*" OR "gender difference*") AND noft("Social communication*" OR "Social interaction*" OR "Social behaviour*" OR "Social behavior*" OR "Social* competen*" OR "Social* skill*" OR Friend* OR Peer* 3 (interact* OR relation* OR engag*)) AND noft(intervention* OR program*)

Table 3

Inclusion and exclusion criteria.

	Inclusion criteria	Exclusion criteria	Rationale
Participant sample	Adolescent participants (11-18 years)	Adult participants (<18 years) Child participants (<11 years)	Consistent with the age of pupils in secondary school education.
	Diagnosis of autism	Autistic traits Co-morbid diagnosis as part of the participant inclusion criteria (e.g., anxiety diagnoses, disruptive behaviour disorder).	Diagnosis requires a baseline threshold for difficulties in social communication and interaction (APA, 2013). Interventions for adolescents with co-morbid diagnoses may target different areas of need.
	Autism without intellectual disability (i.e., IQ >70)	Autism with intellectual disability (i.e., IQ <70)	Gender differences are most stark for autistic individuals without intellectual disability (Fombonne, 2009; Loomes et al., 2017).
Intervention type	Primary focus on developing: • Global social communication and interaction skills, or • Social functioning, or • Peer relationships and friendships As evident by outcomes measures.	Primary focus on developing: • Executive functioning skills • Anxiety • Motor skills • Repetitive and restricted behaviours • Functional life skills • Isolated social-cognitive skills (e.g., emotion recognition, joint attention, eye gaze)	In line with the aims of the literature review.
Source	Peer reviewed journal articles	Meta-analyses, literature reviews, position pieces, feasibility studies, dissertations, book chapters, open access papers.	In line with the aims of the literature review. Quality assurance.
Language	English	Any language other than English	The researcher's first language is English.

Table 4

Number of 'hits' generated from each database.

Database	Number of hits
PsycInfo	1038
Scopus	779
Web of Science	258
BEI	21
ERIC	144
ASSIA	60

Table 5

Screening the literature.

Steps in screening process	Number of hits discarded	Number of hits remaining
Generate literature from databases	N/A	2300
Electronically remove duplicates	522	1778
Manually remove duplicates	47	1731
Discard upon title and abstract (against inclusion and exclusion criteria)	1596	135
Discard upon further scrutiny (against inclusion and exclusion criteria)	101	**34**

Appendix 2: Gatekeeper Email (Directors of Local Education Authorities)

Dear [Director's name],

I am a Trainee Educational Psychologist on the Doctorate in Educational Psychology at Cardiff University. As part of my doctoral training, I am carrying out a doctoral thesis on Additional Learning Needs (ALN) staff's perceptions of gender-specific needs and interventions, in relation to the social competence and peer relationships of autistic females, in mainstream secondary schools. The research is being supervised by a tutor on the doctoral training programme, Dr Rachael Hayes.

I am writing to ask for your **permission to contact Head Teachers of mainstream secondary schools within the local authority, to obtain their consent to recruit staff from their ALN teams, for participation in the research**. Staff are defined as members of the ALN team if they are line managed by the Additional Learning Needs Co-ordinator (ALNCo). For example, teaching assistants and/or learning support assistants.

ALN staff have been chosen as the target sample due to their close working relationship with pupils and their potential role in identifying needs and delivering interventions. I hope to gain their perceptions by conducting online semi-structured interviews, which will last no longer than one hour. It is hoped that this project will increase understanding of whether ALN staff in secondary schools perceive there to be a need for, see any value in, or have capacity to offer gender-specific interventions for female autistic pupils. This may subsequently have implications for Educational Psychologists, for example, in terms of the recommendations and support they provide to schools and pupils.

Please note that for Welsh medium schools, the interviews will be conducted in English. There will be a maximum of 10 participants, determined on a first-come-first-served basis. Further information about the research project can be found in the 'Participant Information Sheet' attached.

If you consent to me contacting the Head Teachers of mainstream secondary schools in the local authority, to obtain permission to recruit ALN staff for participation in the research, I ask that you please respond to this email as confirmation.

Upon completion of the research report, all participating schools and the Local Education Authority will be provided with a summary of the findings if they so wish. It should be noted that no identifiable information or personal views will be included in the analysis.

Many thanks in advance for your consideration of this project. Please let me know if you have any questions or require any additional information.

Regards,
Katy Warren

Katy Warren (Researcher)	Dr Rachael Hayes (Research Supervisor)
School of Psychology,	School of Psychology,
Cardiff University,	Cardiff University,
WarrenKN@cardiff.ac.uk	hayesr4@cardiff.ac.uk

Appendix 3: Gatekeeper Email (Head Teachers)

Dear [Head Teacher's name],

I am a Trainee Educational Psychologist on the Doctorate in Educational Psychology at Cardiff University. As part of my doctoral training, I am carrying out a doctoral thesis on Additional Learning Needs (ALN) staff's perceptions of gender-specific needs and interventions, in relation to the social competence and peer relationships of autistic females, in mainstream secondary schools. The research is being supervised by a tutor on the doctoral training programme, Dr Rachael Hayes.

I am writing to ask for your **permission to recruit staff from the ALN team in your school, for participation in the research**. Staff are defined as members of the ALN team if they are line managed by the Additional Learning Needs Co-ordinator (ALNCo). For example, teaching assistants and/or learning support assistants.

ALN staff have been chosen as the target sample due to their close working relationship with pupils and their potential role in identifying needs and delivering interventions. I hope to gain their perceptions by conducting online semi-structured interviews, which will last no longer than one hour. It is hoped that this project will increase understanding of whether ALN staff in secondary schools perceive there to be a need for, see any value in, or have capacity to offer gender-specific interventions for female autistic pupils. This may subsequently have implications for Educational Psychologists, for example, in terms of the recommendations and support they provide to schools and pupils.

Please note that for Welsh medium schools, the interviews will be conducted in English. There will be a maximum of 10 participants, determined on a first-come-first-served basis. Further information about the research project can be found in the 'Participant Information Sheet' attached.

If you consent to the recruitment of ALN staff in your school, I ask that you please respond to this email as confirmation and include the <u>name and email address of the Additional Learning Needs Co-ordinator.</u>

Upon completion of the research report, all participating schools will be provided with a summary of the findings if they so wish. It should be noted that no identifiable information or personal views will be included in the analysis.

Many thanks in advance for your consideration of this project. Please let me know if you have any questions or require any additional information.

Regards,
Katy Warren

Katy Warren (Researcher)	Dr Rachael Hayes (Research Supervisor)
School of Psychology,	School of Psychology,
Cardiff University,	Cardiff University,
WarrenKN@cardiff.ac.uk	hayesr4@cardiff.ac.uk

Appendix 4: Phase 1 Invitation to Participate (via ALNCOs)

Dear [ALNCo's name],

I am a Trainee Educational Psychologist on the Doctorate in Educational Psychology at Cardiff University. As part of my doctoral training, I am carrying out a doctoral thesis on Additional Learning Needs (ALN) staff's perceptions of gender-specific needs and interventions, in relation to the social competence and peer relationships of autistic females, in mainstream secondary schools. The research is being supervised by a tutor on the doctoral training programme, Dr Rachael Hayes.

I have had permission from the Head Teacher to **recruit staff from the ALN team in your school, for participation in the research.** Staff are defined as members of the ALN team if they are line managed by the Additional Learning Needs Co-ordinator (ALNCo). For example, teaching assistants and/or learning support assistants. Given that the research aims to explore ALN staff's perceptions of gender-specific needs and interventions for autistic adolescents, **it is a requirement that participants have experience of working with <u>at least one</u> autistic pupil in mainstream secondary school.**

I ask that you please forward this email to the staff in your team, to invite them to participate in the research. Anyone interested in taking part will need to read the 'Participant Information Sheet' attached and complete the Consent Form via this link: Consent Form

ALN staff have been chosen as the target sample due to their close working relationship with pupils and their potential role in identifying needs and delivering interventions. I hope to gain their perceptions by conducting online semi-structured interviews, which will last no longer than one hour. It is hoped that this project will increase understanding of whether ALN staff in secondary schools perceive there to be a need for, see any value in, or have capacity to offer gender-specific interventions for female autistic pupils. This may subsequently have implications for Educational Psychologists, for example, in terms of the recommendations and support they provide to schools and pupils.

Please note that for Welsh medium schools, the interviews will be conducted in English. There will be a maximum of 10 participants, determined on a first-come-first-served basis.

Upon completion of the research report, all participating schools will be provided with a summary of the findings if they so wish. It should be noted that no identifiable information or personal views will be included in the analysis.

Many thanks in advance for your consideration of this project. Please let me know if you have any questions or require any additional information.

Regards,
Katy Warren

Katy Warren (Researcher)	Dr Rachael Hayes (Research Supervisor)
School of Psychology,	School of Psychology,
Cardiff University,	Cardiff University,
WarrenKN@cardiff.ac.uk	hayesr4@cardiff.ac.uk

PARTICIPANT INFORMATION SHEET

'Supporting female autistic adolescents to develop their social competence and peer relationships: An exploration of staff's perceptions of gender-specific needs and interventions in mainstream secondary schools.'

You are being invited to take part in some research. Before you decide whether to participate (participation is entirely voluntary), it is important for you to understand why the research is being conducted and what it will involve. Please read the following information carefully.

What is the purpose of the research?

The literature points to a possible need for gender-specific interventions to meet the unique social communication and interaction needs of autistic[2] females (Baldwin & Costley, 2016; Cook et al., 2018; Cridland et al., 2014; Foggo & Webster, 2017; Fowler & O'Connor, 2021; Jamison & Schuttler, 2015; Sedgewick, Hill & Pellicano, 2019; Soloman, Miller, Taylor, Hinshaw & Carter, 2012). Such interventions are argued to be particularly favourable for female autistic adolescents because the social challenges they experience are especially complex (Carter et al., 2014; Foggo & Webster, 2017; Morewood et al., 2019). Whilst evidence-informed gender-specific interventions for autistic females have been developed in recent years (e.g., Jamison & Schuttler, 2017), it is unclear whether secondary schools perceive there to be a need for, see any value in, or have capacity to offer these to their female autistic pupils, to support them to develop their social competence and peer relationships (Gray et al., 2021; Morewood et al., 2019). This research, therefore, attempts to address the following research questions:

1. Do staff perceive there to be gender differences in the social communication and interaction needs of autistic adolescents in mainstream secondary schools?

2. What are staff's perceptions of gender-specific interventions, for supporting female autistic adolescents to develop their social competence and peer relationships, in mainstream secondary schools?

It has three aims:

1. To understand whether staff perceive there to be a *need* for gender-specific interventions, to support autistic females to develop their social competence and peer relationships, in mainstream secondary schools.
2. To understand whether staff perceive gender-specific interventions to have any *value* for supporting autistic females to develop their social competence and peer relationships, in mainstream secondary schools.
3. To understand whether staff perceive mainstream secondary schools to have the *capacity* to offer gender-specific interventions for female autistic adolescents, to support them to develop their social competence and peer relationships.

---

[2] Individuals are defined as autistic if they have a confirmed diagnosis of autism

Who is carrying out the research?

The research is being conducted by Katy Warren, a trainee educational psychologist on the Doctorate in Educational Psychology at Cardiff University. The research is being supervised by Dr Rachael Hayes, who is a university tutor on this programme. This research has been approved by Cardiff University's School of Psychology Research Ethics Committee.

What happens if I agree to take part?

There will be a maximum of ten participants, determined on a first-come-first-served basis. If you provide informed consent to participate in this research, and you are one of the first ten respondents, then you will be invited to take part in an online one-to-one semi-structured interview with the researcher about gender-specific needs and intervention, in relation to the social competence and peer relationships of autistic females, in mainstream secondary schools. This will take no longer than 1 hour. The online interview will be held via Microsoft Teams and will be video recorded for transcription purposes (you will have the option of turning your camera off). Your personal details (name, contact details and workplace) will remain confidential, with your anonymity ensured throughout the publication of this research. No identifiable information or personal views will be communicated to your employer. You do not have to answer all the questions and you can choose to stop the interview or have a break at any time.

Are there any risks associated with taking part?

The research has been approved by Cardiff University's School of Psychology Research Ethics Committee. There are no anticipated significant risks associated with participation.

Is participation voluntary and what if I wish to later withdraw?

Your participation is entirely voluntary, and you do not have to participate if you do not want to. If you decide to participate, but then wish to withdraw from the study, then you are free to withdraw at any time up until the point of data anonymisation (two weeks following the interview). You can withdraw up until this point without giving a reason and without penalty.

What will happen to the information I provide?

An analysis of the research data will form part of the research report. Upon completion of the study, the report may be presented to interested parties and published in scientific journals and related media. Please note that all information presented in any reports or publications will be anonymous and unidentifiable.

Data Protection and Confidentiality

Your data will be processed in accordance with the Data Protection Act 2018; the General Data Protection Regulation 2016 (GDPR) and Cardiff University's Data Protection Policy (2018). All information collected about you will be kept confidential and will not be shared unless there is reason for concern. For example, for reasons of safeguarding, requirements of the law, and public protection.

Your personal data will only be viewed by the researcher and their supervisor. Where necessary, your personal data may also be made available to auditors, as detailed within Cardiff University's 'Research Participants Data Protection Notice':
[Research participants data protection notice - Public information - Cardiff University](#)

Both personal and research data will be stored on a password encrypted computer file via the researcher's Cardiff University online, Intranet portal. Your consent information will be kept separately from your responses (research data) to minimise risk in the event of a data breach. Research data will be anonymised as quickly as possible after data collection so that you cannot be identified, and your privacy is protected. You will not be able to withdraw your data after this point of anonymisation. Therefore, if at the end of the interview you decide to have your data withdrawn, please let the researcher know as soon as possible (within two weeks).

The researcher will take full responsibility for destroying all collected research data and personal data in line with Cardiff University's 'Records Management Policy' (2020). The recording of the interview will be destroyed immediately following the transcription of the data. The transcript data will be held electronically and destroyed on March 31st, 2028, which is in line with Cardiff University's 'Research Record Retention Schedules'.

Data Protection Privacy Notice

The data controller for this project will be Cardiff University. The University Data Protection Officer provides oversight of university activities involving the processing of personal data and can be contacted via the University Secretary's Office (see below). Your personal data will be processed for the purposes outlined in this information sheet. Standard ethical procedures will involve you providing your consent to participate in this study by completing the consent form that has been provided to you.

The legal basis for collecting your personal data is based on informed consent and in line with the General Data Protection Regulation 2016 (GDPR) principles. The purpose for obtaining your personal data is because you meet the participant inclusion criteria.

How long will my information be held?

Your personal data and the research data will be held until March 31st, 2028, which is in line with Cardiff University's 'Research Record Retention Schedules'. The recording of the interview will be destroyed immediately following its transcription.

What are my rights?

You have a right to access your personal information, to object to the processing of your personal information, to rectify, to erase, to restrict and to port your personal information. Please visit Cardiff University's Data Protection webpages for further information in relation to your rights.

Any requests or objections should be made in writing to the University Data Protection Officer:

Data Protection Officer,
Compliance and Risk, University Secretary's Office.
Cardiff University,
Friary House,
Greyfriars Road,
Cardiff,
CF10 3AE
Email: inforequest@cardiff.ac.uk

How to make a complaint?

If you are unhappy with the way in which your personal data has been processed, you may in the first instance contact the University Data Protection Officer using the contact details above. You can also contact the secretary of the Ethics Committee within the school of Psychology via the details below: -

Secretary of the Ethics Committee
School of Psychology
Cardiff University
Tower Building
Park Place
Cardiff
CF10 3AT
Tel: 029 2087 0360
Email: psychethics@cardiff.ac.uk
If you remain dissatisfied, then you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at: -

Information Commissioner's Office – Wales,
2nd Floor, Churchill House,
Churchill Way,
Cardiff,
CF10 2HH
Email: wales@ico.org.uk

What if I have other questions?
If you have further questions about this study, please do not hesitate to contact us:

Researcher:	**Research Supervisor:**
Katy Warren	Dr Rachael Hayes
Trainee Educational Psychologist,	Research Supervisor,
School of Psychology,	School of Psychology,
Cardiff University,	Cardiff University,
WarrenKN@cardiff.ac.uk	hayesr4@cardiff.ac.uk

Appendix 6: Electronic Participant Consent Form

Accessed via Microsoft Forms:
https://forms.office.com/Pages/ResponsePage.aspx?id=MEu3vWiVVki9vwZ1l3j8vOeKbx9LDwFAn YKzmeVBcrhUNTNKUkRaVlVRQkJGWDRQNkw1VEpYTlRNWC4u

Informed consent needs to be obtained for your participation in the research. Please read the participant information sheet which has been sent to you, before carefully answering the statements below.

1. Participant name.
2. Name of school.
3. What is your role in your school?
4. How long have you been in this role?
5. I know of at least one autistic pupil in mainstream secondary school. Pupils are defined as autistic if they have a confirmed diagnosis of autism - Yes/No
6. I have read and understand the terms of the participant information sheet - Yes/No
7. I understand that by participating in this project I consent to having an online semi-structured interview with the researcher, about the gender-specific needs of and interventions for supporting autistic females - Yes/No
8. I understand and consent to the interview being recorded for transcription purposes – Yes/No
9. I understand that I do not have to answer all questions if I choose not to and can end the interview or request a break at any time - Yes/No
10. I understand that my participation is entirely voluntary and that I have the right to withdraw from the research up until the point when the data has been transcribed (2 weeks after the interview) - Yes/No
11. I understand that my personal data will not be included in the transcription of the data to protect my anonymity - Yes/No
12. I understand and give consent for the data to be held in line with data protection procedures held by Cardiff University as outlined in the participant information sheet - Yes/No
13. I understand that I can contact the researcher at any time via the details provided in the participant information sheet with any questions that I may have - Yes/No
14. I understand and consent to my participation in the research conducted by Katy Warren, School of Psychology, Cardiff University, supervised by Dr Rachael Hayes - Yes/No
15. Please provide contact details for the researcher to arrange a time and date for the interview.

Appendix 7: Gatekeeper Letter (Principal Educational Psychologists)

Dear [PEP's name],

I am a Trainee Educational Psychologist on the Doctorate in Educational Psychology at Cardiff University. As part of my doctoral training, I am carrying out a doctoral thesis on Additional Learning Needs (ALN) staff's perceptions of gender-specific needs and interventions, in relation to the social competence and peer relationships of autistic females, in mainstream secondary schools. The research is being supervised by a tutor on the doctoral training programme, Dr Rachael Hayes.

I am writing to ask for your **permission to contact Additional Learning Needs Co-ordinators** (**ALNCos) in mainstream secondary schools within the local authority.** Firstly, to invite them to participate in the research, and secondly to ask them to disseminate the invitation to staff in the ALN team. Staff in the ALN team are defined as members of staff, line managed by the ALNCo. For example, teaching assistants and/or learning support assistants. I would also welcome **opportunities to publicise the research to ALN staff via relevant <u>online forums</u> in the local authority** (e.g., ELSA supervision/training, ALNET implementation sessions).

ALNCos have been chosen as part of the target sample because of their role in co-ordinating support and interventions for pupils with ALN, and because of their close working relationships with Educational Psychologists. Staff in the ALN team have also been chosen as part of the target sample due to their close working relationships with pupils and their potential role in identifying needs and delivering interventions. I hope to gain staff's perceptions by conducting online semi-structured interviews, which will last no longer than one hour. It is hoped that this project will increase understanding of whether ALN staff in secondary schools perceive there to be a need for, see any value in, or have capacity to offer gender-specific interventions for female autistic pupils. This may subsequently have implications for Educational Psychologists, for example, in terms of the recommendations and support they provide to schools and pupils.

Please note that for Welsh medium schools, the interviews will be conducted in English. There will be a maximum of 10 participants, determined on a first-come-first-served basis. Further information about the research project can be found in the 'Participant Information Sheet' attached.

If you consent to me contacting the ALNCos of mainstream secondary schools in the local authority, to invite them to participate in the research and to ask them to disseminate the invitation to staff in the ALN team, I ask that you please respond to this email as confirmation with ALNCos' email addresses. **If you consent to me publicising the research to ALN staff via relevant <u>online forums</u> in the local authority, I ask that you please share the relevant time and dates with me.**

Upon completion of the research report, all participating schools and the Local Education Authority will be provided with a summary of the findings if they so wish. It should be noted that no identifiable information or personal views will be included in the analysis.

Many thanks in advance for your consideration of this project. Please let me know if you have any questions or require any additional information.

Regards,
Katy Warren

Katy Warren (Researcher)	Dr Rachael Hayes (Research Supervisor)
School of Psychology,	School of Psychology,
Cardiff University,	Cardiff University,
WarrenKN@cardiff.ac.uk	hayesr4@cardiff.ac.uk

Appendix 8: Phase 2 Invitation to Participate (via ALNCOs)

Dear [ALNCo's name],

I am a Trainee Educational Psychologist on the Doctorate in Educational Psychology at Cardiff University. As part of my doctoral training, I am carrying out a doctoral thesis on Additional Learning Needs (ALN) staff's perceptions of gender-specific needs and interventions, in relation to the social competence and peer relationships of autistic females, in mainstream secondary schools. The research is being supervised by a tutor on the doctoral training programme, Dr Rachael Hayes.

I have had permission from the Principal Educational Psychologist **to invite you to participate in the research and to recruit staff from the ALN team in your school.** Staff are defined as members of the ALN team if they are line managed by the Additional Learning Needs Co-ordinator (ALNCo). For example, teaching assistants and/or learning support assistants. Given that the research aims to explore ALN staff's perceptions of gender-specific needs and interventions for autistic adolescents, **it is a requirement that participants have at least one autistic pupil known to them in mainstream secondary school.** Pupils are defined as autistic if they have a confirmed diagnosis of autism. **Participants do not have experience delivering gender-specific interventions** to take part in the research.

I ask that you please forward this email to the staff in your team, to invite them to participate in the research. Anyone interested in taking part will need to read the 'Participant Information Sheet' attached and complete the Consent Form via this link: Consent Form

ALNCos have been chosen as part of the target sample because of their role in co-ordinating support and interventions for pupils with ALN, and because of their close working relationships with Educational Psychologists. Staff in the ALN team have also been chosen as part of the target sample due to their close working relationships with pupils and their potential role in identifying needs and delivering interventions. I hope to gain staff's perceptions by conducting online semi-structured interviews, which will last no longer than one hour. It is hoped that this project will increase understanding of whether ALN staff in secondary schools perceive there to be a need for, see any value in, or have capacity to offer gender-specific interventions for female autistic pupils. This may subsequently have implications for Educational Psychologists, for example, in terms of the recommendations and support they provide to schools and pupils.

Please note that for Welsh medium schools, the interviews will be conducted in English. There will be a maximum of 10 participants, determined on a first-come-first-served basis.

Upon completion of the research report, all participating schools will be provided with a summary of the findings if they so wish. It should be noted that no identifiable information or personal views will be included in the analysis.

Many thanks in advance for your consideration of this project. Please let me know if you have any questions or require any additional information.

Regards,
Katy Warren

Katy Warren (Researcher)   Dr Rachael Hayes (Research Supervisor)
School of Psychology,   School of Psychology,
Cardiff University,   Cardiff University,
WarrenKN@cardiff.ac.uk   hayesr4@cardiff.ac.uk

Staff's perceptions of gender-specific needs and interventions for autistic females in mainstream secondary schools in the UK.

Call for participants!

I am recruiting <u>ALN/SEN/ASN staff in mainstream secondary schools in the UK</u> for a study exploring staff's perceptions of gender-specific needs and interventions for autistic females.

To take part in the study, participants <u>must</u>:

1. Manage or be part of an ALN/SEN/ASN team in a mainstream secondary school in the UK (e.g., **teaching assistant, learning support officer**).
2. Have at least one autistic pupil in mainstream secondary school known to them. Pupils are defined as autistic if they have a confirmed diagnosis of autism.

Participants <u>do not</u> have to have experience delivering gender-specific interventions.

What's involved?

An online semi-structured interview (via Microsoft Teams), which will last no longer than one hour. If you are interested in taking part, please read the Participant Information Sheet and complete the Consent Form.

Want more information?

Katy Warren (Researcher)
School of Psychology,
Cardiff University,
WarrenKN@cardiff.ac.uk

Dr Rachael Hayes (Research Supervisor)
School of Psychology,
Cardiff University,
hayesr4@cardiff.ac.uk

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Appendix 10: Interview Schedule

<u>Welcome</u>
- Participants will be thanked for participating in the research and will be asked if they have read and fully understood the 'Participant Information Sheet' (see Appendix 6).
- They will be reminded of their right to withdraw (without reason or penalty) from the research at any point within the interview.
- Participants will also be reminded that they can turn their camera off, do not have to answer all the questions and can choose to end the interview or take a break at any time.
- The participants will be given the opportunity to ask any questions prior to starting the recording of the interview.

<u>Overview of the topic</u>
- The participants will be reminded of the research questions and aims, as detailed within the 'Participant Information Sheet' (see Appendix 6).
- Participants will be informed of the use of the term 'female' in the context of the interview (see caveat below).

It is recognised that, within the autistic population, rates of gender variance (i.e., the expression of gender characteristics that are not stereotypically associated with one's assigned sex at birth) are higher than what has been reported for the typically developing population (Cooper, Smith & Russell, 2018). In the context of this interview, the term 'female' is used to refer to autistic pupils who identify as girls, regardless of their biological sex. Autistic pupils are defined as pupils with a confirmed diagnosis of autism.

<u>Interview questions</u>

1. Can you tell me about the social communication and interaction needs that you perceive autistic pupils in mainstream secondary school to experience?
   - In the classroom (e.g., with teachers and peers)
   - During break and lunch times

2. Do you consider autistic adolescents to have different social experiences according to their identified gender? Please explain.
   - Why might this be?
   - Who might they spend time with?
   - How might they spend their time?
   - When might they spend time with peers? (e.g., free-time, clubs etc.)
   - What challenges might they experience?

3. Can you tell me about what type of support you perceive autistic adolescents may benefit from, to promote their social competence and peer relationships, in mainstream secondary school?
   - What skills might they need support to develop?
   - Is this the same for pupils on the autistic spectrum, regardless of their identified gender?

4. Do you think gender-specific interventions have the potential to offer female autistic adolescents something different to generic interventions currently available in mainstream secondary schools, for promoting social competence and peer relationships? Please explain.

5. What factors might need to be considered to support the implementation of gender-specific interventions for promoting social competence and peer relationships among female autistic pupils in secondary schools?

Prompts / Probes
- Follow up probes - Why? / How?
- Expansive probes - Can you give me an example of this please?
- Expansive probes - Can you tell me more about…please?
- Confirmatory probes - Can I just check that I have understood correctly…?
- Deliberate use of pausing for the respondent to say more.
- Further unanticipated prompts / probes if required.

Closing Statement
- Participants will be thanked for their participation in the research and will be given the opportunity to ask any questions that they might have.
- Participants will then be provided with a copy of the debrief sheet via email (see Appendix 10).

DEBRIEF SHEET

'Supporting female autistic adolescents to develop their social competence and peer relationships: An exploration of staff's perceptions of gender-specific needs and interventions in mainstream secondary schools.'

Thank you for participating in the research. The time that you have given is really appreciated.

The present study was conducted with three aims:

1. To understand whether staff perceive there to be a *need* for gender-specific interventions, to support autistic females to develop their social competence and peer relationships, in mainstream secondary schools.
2. To understand whether staff perceive gender-specific interventions to have any *value* for supporting autistic females to develop their social competence and peer relationships, in mainstream secondary schools.
3. To understand whether staff perceive mainstream secondary schools to have the *capacity* to offer gender-specific interventions for female autistic adolescents, to support them to develop their social competence and peer relationships.

The data was collected via one-to-one semi-structured interviews with staff from Additional Learning Needs/Special Educational Needs/Additional Support Needs teams in mainstream secondary schools in the UK and will be transcribed and analysed by the researcher to help identify any themes.

Upon completion of the research report, all participants will be provided with a summary of the findings if they so wish. No identifiable information or personal views will be included in the analysis.

Please note that you have the right to withdraw your information from the research without explanations, up until the point of data transcription (two weeks after the interview). At this point, all data will be anonymised. Data will be kept in accordance with Data Protection Procedures held by Cardiff University.

If you feel that you have been affected by participating in this research, please seek advice from:

- Samaritans: www.samaritans.org
- Mind: www.mind.org.uk
- National Autistic Society: https://www.autism.org.uk/

I would again like to thank you for your participation. If you have any questions or further comments regarding this study, please do not hesitate to get in contact via the details below:

Researcher:
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Should you wish to make a complaint about the research, please see the information below:

The Secretary,
School Research Ethics Committee,
School of Psychology,
Cardiff University,
Park Place,
CF10 3AT
Email: psychethics@cardiff.ac.uk
Tel: +44 (0) 029208 70707

Cardiff University is the Data Controller and is committed to respecting and protecting your personal data in accordance with your expectations and Data Protection legislation. The University has a Data Protection Officer who can be contacted at inforequest@cardiff.ac.uk. Further information about Data Protection, including your rights and details about how to contact the Information Commissioner's Office should you wish to complain, can be found at the following:
https://intranet.cardiff.ac.uk/staff/supporting-your-work/manage-use-and-protect-data/data-protection

Appendix 12: Interview Excerpt

KW

It sounds really lovely. Um and just thinking back to then um so I know you were talking about how you used a set invention previously before like Talk About and then you had this sort of naturalistic sort of game playing um sort of scenario. In terms of the skills that you think boys and girls with autism need to develop, do you think they're the same in terms of their social communication and interaction?

P3

Umm, it's really difficult to say because from the experience we've had here, I think girls present very differently to boys, but I think how you approach that is really individualistic um and what works for one will not work for the other and vice versa. I don't know whether that actually you know, is a gender thing, or whether that is an individual thing. You know, they they do present really differently. The girls present with more kind of anxiety, stress um but in in terms of skills, I I suppose in terms of the skills development, the girls have to or need to develop a little bit more resilience, I suppose. Whereas some of the boys, and not all of them, but some of the boys are quite resilient really, because I don't think they've got that kind of thought of, how will I look, how will I be seen by others, they'll they'll just go and do it and they, you know. You know, we got one boy in Year 7 who said we can I take my cuddly toy to lessons, and we had to talk through, OK well alright, why do you want to do that? OK. What do you think other pupils would say. And he was still absolutely fine. OK. You know, we we've talked about it, we've explained it and he he was fine. And he's done it. And, you know, some of the other kids have looked at him and gone, why' have you got a cuddly toy with you? But it's self-soothing and he's happy. Whereas the girl in Year 8 has, she calls him square, you know those where, you can buy them for new-born babies, they're like a square of like a nice material, and then they've got, like, a bear on a corner. She's got one of those that she keeps in her bag, and she will come here, come into my office, close the door and then get square out and and kind of self soothe for a bit and then put it back. She won't let other people see it, so, you know she she wants to use it, but she is definitely more aware of how that would look than the boys. So, it's, but again, I think it is very individual rather than gender based.

KW

OK. Thank you. Um and then thinking hypothetically then about gender specific interventions around sort of social communication, peer relationships, do you think um female specific interventions, is there is there potential for them? Do you think they'd have any value or or not?

P3

Yes, I, to be honest, I was thinking about, I was thinking about this um because of the girls that we've got and I think they do, because actually how a boy responds and how a girl responds, neurotypically speaking, is very different, isn't it, to each other and I think that needs almost to be carried over in terms of our non-neurotypical children, in the sense that you know, the things that the girls are concerned about socially are very different to what the boys are concerned about. And the things that the girls wanna be able to do socially are very different to what the boys want to be able to do socially. So, I think, you know, a gender specific kind of intervention, if you've got the numbers to be able to kind of deliver and develop that, would actually have some impact, you know. With our young ladies,

they are different side of the year groups. They're not, they haven't got the same interests. They present very differently. So, OK, do you put them together and do an intervention, because this is what I was thinking about driving home last night. Do you do it and see how it goes? But they are so different from each other, then you wonder whether actually the skill development they need is very different. But actually, is it more about, for them, yes there is a skills development, a social skills development program, gender specific, but is it more about that kind of going back to that concept of like circle of friends, you know where they're at the middle of it and you build around them gender wise, because we have done, I remember doing Talk About probably about just pre-covid, and I did it with a girl and two boys, and it, I wouldn't, it was im-, it was impactful in the sense that the kids really liked the sessions and one boy particularly would talk more in the sessions than others. But in terms of long-term impacts, I don't think it had any, because what we needed to kind of focus on for the boys' development was very different from what we needed to focus on for her. And very often she would sit there and go, yeah, but I I know. I I can do that. But I I would never say that to someone. Whereas the boys, it was like, yeah, this is, you know, so I do, I actually, I do see the benefit in in it.

KW
So just to sort of just to um check I've understood this right. So, from your perspective then the the broad skills that they need, sometimes you feel that the girls, perhaps you were saying in, in that example, she felt that she knew how to do certain things, but perhaps the the context in which they use those skills as a boy and as a girl relating to their same gender peers is perhaps different. Is that what you're saying?

P3
Yes. Yeah, yeah, yeah, yeah, yeah.

Appendix 13: Code Development

KW

OK. Thank you. Um and then thinking hypothetically then about gender specific interventions around sort of social communication, peer relationships, do you think um female specific interventions, is there is there potential for them? Do you think they'd have any value or or not?

P3

Yes, I, to be honest, I was thinking about, I was thinking about this um because of the girls that we've got and I think they do, because actually how a boy responds and how a girl responds, neurotypically speaking, is very different, isn't it, to each other and I think that needs almost to be carried over in terms of our non-neurotypical children, in the sense that you know, the things that the girls are concerned about socially are very different to what the boys are concerned about. And the things that the girls wanna be able to do socially are very different to what the boys want to be able to do socially. So, I think, you know, a gender specific kind of intervention, if you've got the numbers to be able to kind of deliver and develop that, would actually have some impact, you know. With our young ladies, they are different side of the year groups. They're not, they haven't got the same interests. They present very differently. So, OK, do you put them together and do an intervention, because this is what I was thinking about driving home last night. Do you do it and see how it goes? But they are so different from each other, then you wonder whether actually the skill development they need is very different. But actually, is it more about, for them, yes there is a skills development, a social skills development program, gender specific, but is it more about that kind of going back to that concept of like circle of friends, you know where they're at the middle of it and you build around them gender wise, because we have done, I remember doing Talk About probably about just pre- covid, and I did it with a girl and two boys, and it, I wouldn't, it was im-, it was impactful in the sense that the kids really liked the sessions and one boy particularly would talk more in the sessions than others. But in terms of long-term impacts, I don't think it had any, because what we needed to kind of focus on for the boys' development was very different from what we needed to focus on for her. And very often she would sit there and go, yeah, but I I know. I I can do that. But I I would never say that to someone. Whereas the boys, it was like, yeah, this is, you know, so I do, I actually, I do see the benefit in in it.

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So just to sort of just to um check I've understood this right. So, from your perspective then the the the broad skills that they need, sometimes you feel that the girls, perhaps you were saying in, in that example, she felt that she knew how to do certain things, but perhaps the the context in which they use those skills as a boy and as a girl relating to their same gender peers is perhaps different. Is that what you're saying?

P3

Yes. Yeah, yeah, yeah, yeah, yeah.

Appendix 14: Coding Example

Code	Data Extracts
Autistic girls may be over-reliant on one friend	"…they focus on one person and that becomes their really good friend and then there's a lot of pressure on that friendship and the other person can't cope with that" (P4) "… the girls in particular…they're putting too much on their friends… they've got one friend. They haven't got room for other friends. That's the friend. So therefore, when there's an issue with that, then, then you start seeing meltdown type situations because…they've invested all their time in one person. Um and that can be quite difficult. Both for the pupil with autism but also the friend…" (P4) "…they tend to be very much with the same person all the time" (P5) "…my daughter's friend who is diagnosed as autistic and tends to be very close to my daughter, but also um doesn't like her bothering with other people. She's very much, she needs to have her and doesn't like when she's talking to other people. She becomes quite insecure about that. She needs to have that kind of attachment to my daughter, which is quite difficult for her really. It's difficult for my daughter because she can't talk to anyone because her friend doesn't like that, that she can converse with other people." (P5) "She has that one friend, and she sits in the one place and her friend is with her. And that's how she wants it. And she's happy enough like that. But yeah, it can be quite, it's um quite full on, isn't it?" (P5) "The friendships are a bit more intense, maybe. That they're a little bit more concentrated on being with somebody." (P5) "They tend to crave one special friendship." (P6)
Poor mental health and wellbeing associated with autistic girls	"There's obviously an issue with friendships and understanding of relationships, which then causes major anxiety. Um so then we deal with anxiety um and that's the first thing we see." (P1) "…the link with sort of mental health issues and the autistic adolescent female as well…that seems to be quite linked. That seems to be quite prevalent in the adolescent autistic females we have in school" (P2) "…there definitely seems to be um a higher prevalence of mental health intervention amongst our autistic adolescent females than there is in the other population" (P2) "…there'd be a lot of anxiety. There may be more instances of self-harming and there may be um that idea that a minor setback is a catastrophe … But probably the anxiety and self-harming are things that we would be seeing. Quite regularly, yes." (P2)

	"…she's got a significant anxiety disorder that goes with her autism" (P3)
	"The girls present with more kind of anxiety, stress…" (P3)
	"I think you notice the anxiety coming through a lot more as well with the girls." (P5)
	"I've even gone to the point where they've started self-harming or, or having a low mood or something because, and, and it'll come out that way, rather than being so completely obvious." (P6)
	"… I'd say definitely with the girls, we see more of the mental health concerns. More of the self-harm. Um definitely you know, in terms of CAMHS involvement." (P7)
	"…what we tend to find is just so much anxiety around, around things. And being unable to maybe effectively express how they're feeling and just keeping those emotions within themselves, rather than speaking to somebody." (P7)
	"…I suppose it's the anxiety around the pressures that they, that they're feeling. I think. Academically as much as anything, you know, in terms of the academic and, and the expectations really, just feeling overburdened with things." (P7)
	"I'm just thinking of two or three quite prominent examples where they received a diagnosis in like Year 10…So, we have them at the stage where they're self-harming then etcetera." (P7)
Gender identity development among autistic pupils	"We've got a lot of gender confusion amongst our ASD children" (P1)
	"…the biggest thing we're facing at the minute is, is um it's not specifically how to deal with males and females. It's males and females not understanding what gender is" (P1)
	"…there's so much confusion around you know, knowing what gender is" (P1)
	"But I think that's the biggest observation we've made with autistic children. We've seen a lot more confusion around their own personal gender." (P1)
	"I personally found that a lot of the girls I work with, all with autism, are very confused about their gender. [KW: OK]. So, a lot of them identify as male… maybe dress more male or identify as a male…Not so much with boys though, but definitely with the girls." (P5)
	"I would suggest that the girls who have autism in the school um are more likely to uh, be nonbinary… There's probably one, um one boy, if I can say that, who is non binary. Um out of maybe 10 or 12 um autistic pupils. Um and I'd probably say out of the six or seven autistic girls we have; I would say perhaps half of them associate as nonbinary." (P8)
	"…we've got a couple of pupils who are identifying as the opposite gender… And that's, that's particularly the girls then. Um, you know, trans girls, etcetera… girls identifying as male rather than the other around." (P7)

	"I suppose that has effect then on, on the provision that we put in place for ASD children 'cause we kind have to establish what gender are you identifying as today" (P1)
Later Identification of autism in girls	"...the highest number of children that I put on the ASD pathway are female. Because I think most of the um the males have been sorted out in primary school" (P1) "...that's been the huge difference, just the numbers have crept up over the years. And the amount of females that are being identified while adolescents that haven't had that diagnosis beforehand. Whereas a lot of the boys that would come in, males that would come in, would possibly have had that diagnosis sooner." (P2) "...we seem to pick up on girls quite late in school as well. Because they've just hidden. And that that would be an issue. But they need an intervention, as early as possible really, to be able to make the most of being in school." (P5) "...there's been a pattern of sort of, girls, um, thinking about neurodiverse girls, they seem to be older, in us getting to that point where, you know, we've, we, we have those conversations around, you know, what are they finding really difficult" (P6) "...because the girls receive a later diagnosis" (P7) "Especially when they come up to do GCSEs, and they start, you see them start flag a little bit, that's when you kind of pick them up." (P5) "I'm just thinking of two or three quite prominent examples where they received a diagnosis in like Year 10" (P7)
Girls' interactions are less structured	"I think it's harder for girls to be part of something because there's less, it seems to be opportunities...I suppose it's because of the way society is now that the opportunity for girls is, is less about um tasks and activities, it's more about lifestyle. It's more about, you know, watching television, Love Island (laughter). It's about social media." (P1) "I tend to see them just hanging out, I guess. They play on their phones usually these days don't they, and they sit in a group and yeah, they're pretty much on their phone. They tend to like to do Tic Toks and stuff ...they like to be on their phones and snapchatting. They do a lot of taking pictures of themselves and sending it to people." (P5) "...if a small group or a special friendship is possible, then we'll often find that they'll (autistic girls) use that time walking. Not necessarily pacing, but you know, it's almost like taking a turn around the room, as they did in the 1800s. You know, just having a walk and talk with friends" (P6) "Girls, the girls will just sit down. [Laughter]. You don't see them, you know, they'll, they'll either be sitting down outside or in the dining hall." (P7)

Appendix 15: Theme Development
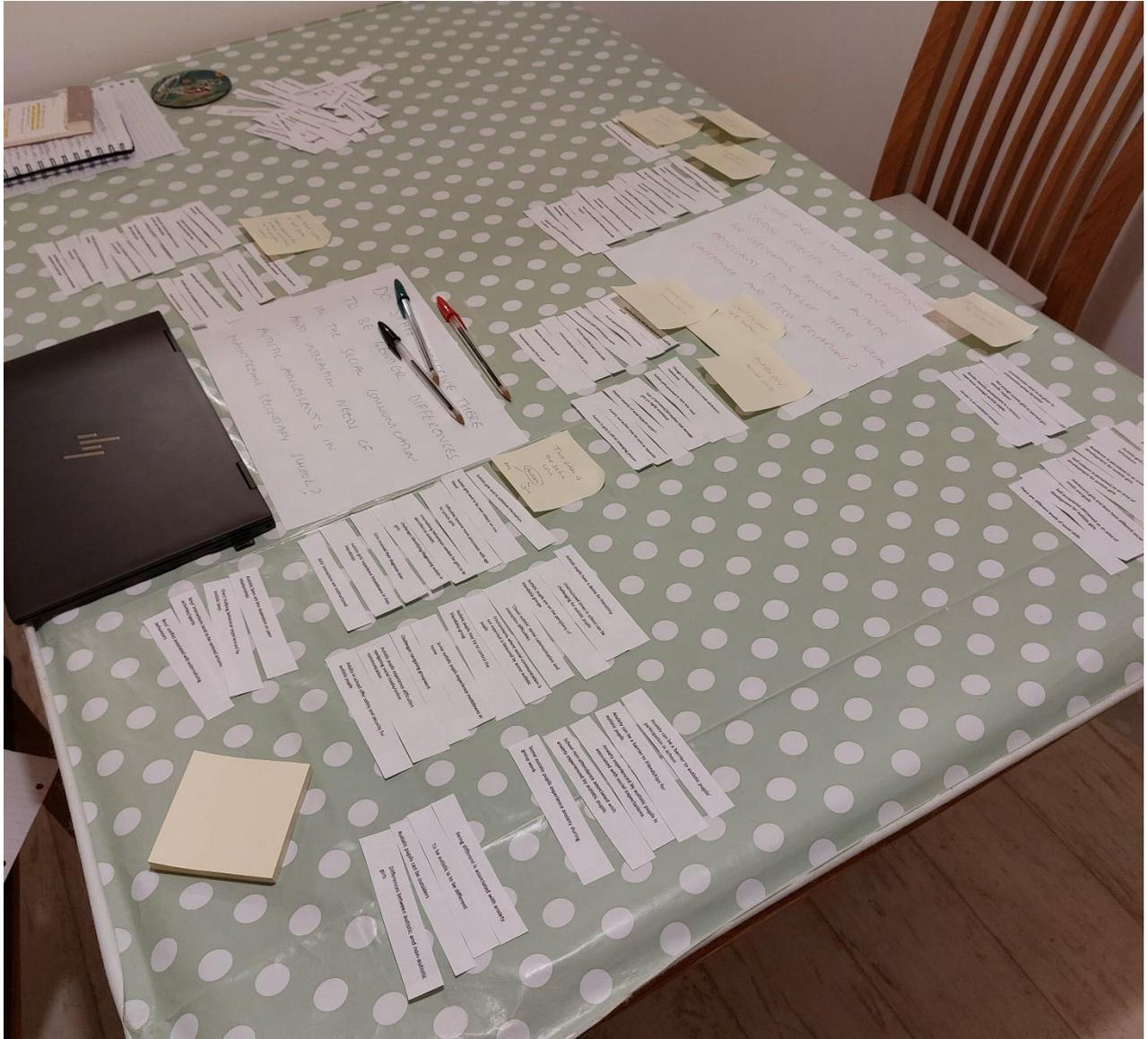
Appendix 16: Validity and Trustworthiness of Qualitative Data

The application of Yardley's (2015) principles for assessing validity and trustworthiness in the current research are presented in below:

Principle	Considerations
Sensitivity to context	• Ethical approval was granted by Cardiff University Ethics Committee. • The research was situated within the existing theoretical and empirical literature. • The research questions addressed gaps in the literature and contributed towards current understanding. • The use of open-ended questions in the semi-structured interviews allowed participants to talk freely about what is important to them. • The researcher reflected on how their characteristics may impact participants' engagement in the interviews (p. 93-94). • The researcher acknowledged their ideological and societal positions (p. 93-94) and maintained sensitivity to the data by adopting an inductive approach to analysis and keeping a research journal. Extracts from the research journal are included in Appendix 18.
Commitment and rigour	• The researcher engaged with supervision throughout the research process. • Guidelines for using Reflexive Thematic Analysis were followed (Braun & Clarke, 2022). • The researcher demonstrated in-depth engagement with the topic (e.g., Part 1).
Coherence and transparency	• The research design was considered in relation to the ontological and epistemological position adopted. • Examples of the coding process and theme development are presented in Appendices 13, 14 and 15. • Part 3 provides a reflective and reflexive commentary of the researcher's journey, including the decisions made throughout the research process. • A research journal (see Appendix 18 for extracts) was used to ensure reflexivity throughout the research process, in addition to regular supervision sessions.
Impact and importance	• To the researcher's knowledge, this is the first study to explore perceptions of gender-specific interventions for autistic adolescents. • Practical implications of the research for EPs are discussed. • Contributions to future research are considered.

Appendix 17: Ethical Considerations

Ethical Consideration	How this was addressed
Informed consent	Participants were contacted and provided with a 'Participant Information Sheet' (see Appendix 6) detailing the research aims, rationale, method and contact details for the researcher and university. Participation was voluntary and participants were required to provide their informed consent by completing an electronic 'Consent Form' (see Appendix 8). Verbal consent was also obtained at the beginning of the interviews after checking that participants had understood the nature of the research.
Confidentiality and anonymity	The online interviews were video recorded using the Microsoft Teams function and participants had the option of turning their camera off. All recordings were stored on a password protected device and destroyed immediately after transcription. Individual names and schools were not included during the transcribing process to ensure anonymity. Information shared during the interview was not discussed outside the context of the research project to maintain confidentiality.
Right to withdraw	Participants were made aware of their right to withdraw in the 'Participant Information Sheet' (Appendix 6). Participants were also required to answer a statement about their awareness of their right to withdraw in the electronic 'Consent Form' (Appendix 8). Participants were reminded of their right to withdraw prior to the start of the interview and after the interview via the 'Debrief Sheet' (Appendix 10).
Risk of harm	The research did not intend, nor did it anticipate, causing distress or psychological harm to its participants. A risk assessment was conducted and approved. Risk assessment ID: 1641211449_3411. The researcher was available for questions during and after the interview and was contactable thereafter.
Debriefing	Participants were emailed a 'Debrief Sheet' at the end of the interview (Appendix 10).
General Protection Regulations (GDPR)	Data was kept in accordance with Data Protection Procedures held by Cardiff University.
Research topic	By focussing on interventions that aim to develop social skills and peer relationships, it might be implied that autistic females require 'fixing'. As such, some autistic individuals and advocates who align with the neurodiversity movement and celebrate differences within the population, may deem this research unethical (O'Reilly et al.,

	2020). However, it can be argued that celebrating neurodiversity does not necessarily negate the need for, and the potential advantages of interventions (O'Reilly et al., 2020), including those that support autistic individuals to develop their social skills and peer relationships. It feels important to emphasise that the goal of such interventions (and this research), is not to eradicate autism, but to support female autistic adolescents to manage and engage with the social complexities of secondary school and the wider social world.

Appendix 18: Extracts from Research Journal

Thought I heard the word 'compensate' and asked the participant about this. I was mistaken – are my ears pricked to hear/alerted to key words I've read in the literature? Important that I use participants words not my own.

Picking up on threads of the conversation using active listening - am I biased in terms of what I remember/am drawn to? What would be the impact of writing pointers down? How would this affect the interaction? My listening?

Found it difficult as I didn't always agree with what was being said. Is this the case or was it because I found it difficult to build rapport. Why did I find it difficult to build rapport? Perhaps the research is a priority for me but it's not necessarily for participants.

Frustrating reading interview transcripts and wishing I'd unpicked certain things more!

Always needing to refocus to make sure themes are relevant to the research questions, not just representative of data/codes that I personally find interesting.

Surprisingly enjoying generating and naming themes. Nice to get creative (e.g., using proverbs). Using imagery/doodles is helpful.