REVIEW PAPER

Experiences of Friendships for Individuals on the Autism Spectrum: A Scoping Review

Melissa H. Black[1,2] · Rebecca Kuzminski[1] · Jing Wang[1] · Jessica Ang[1] · Cheryl Lee[1] · Siti Hafidzuddin[1] · Sarah McGarry[1,2]

Abstract

Friendships are vital to mental health and well-being. Understanding autistic individuals' lived experiences of friendship is necessary to support friendship development. A scoping review exploring autistic individuals' experiences of friendship was undertaken to understand their perspectives of friendship. Electronic database and manual reference searches identified twenty-two studies exploring autistic perspectives of friendship. Results were synthesised using a meta-ethnographic approach across the lifespan. Findings highlight the common and unique experiences of friendship among autistic individuals. While autistic individuals defined friendship based on homophily and propinquity, similar to non-autistic individuals, unique challenges including friendship insecurity, monotropism and efforts to conform to neurotypical social norms, leading to anxiety, were experienced by autistic individuals.

Keywords Peer relationships · Loneliness · Friendship · Friends · Qualitative

Friendship plays an important role across the lifespan. It is a specific form of peer relationship, which is voluntary and reciprocal, involving concerns of each friend for the well-being of the other (Hartup, 1996; Helm, 2010). In neurotypical populations, it involves concepts of companionship, intimacy, affection and mutual assistance (Bukowski & Sippola, 2005) and is underpinned by concepts of propinquity and homophily, with propinquity referring to proximity and homophily describing the phenomenon through which individuals tend to form social relationships with those who are similar to them (McPherson et al., 2001). Compared with non-friend relations, friendships are characterised by more intense social activity, more frequent conflict resolution and more effective task performance (Newcomb & Bagwell, 1995). Friendship is facilitated by a series of positive and negative experiences that young people have with their peers (Rubin et al., 2015). These processes are linked to peer effects on multiple outcomes including behaviour, mental health, school performance and self-perceptions (Rubin et al., 2015).

The importance of peer relationships stems from a fundamental human need for social connection (Mazurek, 2014). Friendships are complex as they interconnect with other developmental processes such as developing social and communication skills (Durkin & Conti-Ramsden, 2007; Hartup, 1996). Whilst social skills are required to form quality friendships, the two concepts have distinct and measurable, individual outcomes (Hartup, 1996). During childhood, friendship provides the opportunities to practice communication, cooperation and conflict resolution, while facilitating emotional experiences such as companionship and intimacy (Bukowski et al., 1994). The importance of friendship increases after the transition to adolescence, with adolescents beginning to spend more time with their peers and less time with their parents and siblings (Larson et al., 1996). During early adulthood, friendship serves as an important model for forming other relationships, such as romantic relationships (Reitz et al., 2014). Later in life, close peer relationships become important supports as older adults face age-related losses (Reitz et al., 2014). Across the lifespan, a lack of social connection and belonging can result in negative impacts on physical health and psychological well-being (Mazurek, 2014), including reduced

✉ Melissa H. Black
   Melissa.black@curtin.edu.au

1   Curtin School of Allied Health, Curtin University, GPO Box U1987, Perth, WA, Australia

2   EnAble Institute, Curtin University, Perth, WA, Australia

self-esteem (Davis et al., 1992), increased feelings of loneliness (Mazurek, 2014), increased depression (Wei et al., 2005) and anxiety (Cacioppo et al., 2006), and decreased perceived quality of life (Stillman et al., 2009).

Autistic individuals may experience challenges in peer relationships at all ages. Autistic children and adolescents may struggle with making friends and experience peer bullying (Schroeder et al., 2014), in turn, impacting the formation of their self-identity, and the transition to adulthood (Browning et al., 2009; Cresswell et al., 2019). These interpersonal challenges can persist or exacerbate in adulthood (Seltzer et al., 2004), with some studies reporting that only a small proportion of autistic adults have friends (Billstedt et al., 2011; Engström et al., 2003; Howlin et al., 2004), and are significantly more lonely than neurotypical populations (Ee et al., 2019). This suggests that the challenges of friendship experienced by autistic individuals may cascade or compound as they transition across the various developmental stages. For autistic individuals, strong friendships may be a protective factor against the negative impacts of social difficulties (Mazurek, 2014). Friendships and peer support could reduce perceived loneliness and depression (Bauminger et al., 2004), promote peer acceptance (Rotheram-Fuller et al., 2010) and increase self-worth in autistic individuals (Whitehouse et al., 2009).

On the whole, studies have previously explored friendship through objective quantitative means (Kasari et al., 2011) or from the perspectives of parents, siblings, teachers or health professionals (e.g., Church et al., 2000; Portway & Johnson, 2003). Quantitative studies have predominately focused on measuring outcomes such as quality, frequency and duration of peer interaction (Bauminger-Zviely et al., 2014), loneliness (Locke et al., 2010), reciprocal friendship, acceptance and rejection (Chamberlain et al., 2007; Rotheram-Fuller et al., 2010). Whilst these studies are important to provide an understanding of friendship, qualitative research can build upon these findings to gain an in-depth understanding of why these phenomena occur and how the individual may feel about these issues. Research has begun to focus on the subjective experience of friendship, taking into account the expert voices of autistic individuals (O'Day & Killeen, 2002). The perspectives of autistic individuals are important in developing a greater understanding of friendships among this population. Increased understanding has the potential to facilitate the development of targeted services aimed at meeting the needs of autistic individuals (Haertl et al., 2013). While there is a growing number of qualitative studies exploring friendship in autism, their ability to inform a broader understanding are limited by the inherent nature of qualitative studies, namely small sample sizes, homogenous populations and variations in topics explored. The objective of this scoping review was to explore and synthesise research examining the subjective experiences of friendships from the perspective of autistic individuals across the lifespan. This has the potential to inform a more robust understanding of friendship in autistic individuals. Specifically, the research question was, how do autistic individuals define and experience friendship?

Method

Design

A meta-ethnographic method developed by Noblit and Hare (1988) and refined by Atkins et al. (2008) was used to synthesise the results from individual qualitative studies to form an understanding of the subjective experience of friendship among autistic individuals. As described further in the "Collating, Summarizing, and Reporting of the Results" section below, meta-ethnography is an inductive interpretative approach to integrating qualitative findings to develop meaning and understanding that may not be generated by individual studies alone (Noblit & Hare, 1988). A meta-ethnographic method was selected due to its unique ability to maintain the voices and lived experiences of autistic participants, described in individual studies while allowing for a higher order level of analysis and interpretation (Atkins et al., 2008; Noblit & Hare, 1988).

Search Strategy

Five electronic databases were searched for studies published from the earliest records to August 2020: MEDLINE (1946), EMBASE (1974), PsycINFO (1860), Cumulative Index of Nursing and Allied Health Literature (CINAHL, 1937), and Web of Science (1972). Keywords and MeSH were combined and used for each database search. Keywords were grouped into three categories: (1) autis* or "high-functioning autism" or Asperger or ASD; (2) friend* or "peer relation*" and (3) qualitative or "lived experience" or phenomenolog* or ethnograph* or biograph* or autobiograph* or "grounded theory" or narrative or interview. MeSH terms were exploded, truncated and adjusted to comply with different databases. A librarian with expertise in health science assisted in developing, refining and executing the searches. Manual searches were conducted on Google Scholar and all reference lists of retrieved articles to identify additional literature meeting inclusion criteria.

Studies Selection

Studies were deemed eligible for inclusion if they were (1) full-text peer-reviewed journal articles written in English; (2) the participants had a primary diagnosis of autism; (3) were qualitative design and focused on the first-hand or

subjective experiences of friendship of autistic individuals and (4) examined experiences of friendship including with other autistic or neurodiverse individuals and with neurotypical individuals. Articles were excluded if they (1) contained only quantitative data or (2) focused on interventions or therapy. No limits were placed on the presence of co-occurring conditions, the methodological quality of the articles or the age of participants, with studies across the lifespan included.

Assessment of Methodological Quality

Two reviewers independently appraised the quality of each article using the Standard Quality Assessment Criteria for Evaluating Primary Research Papers (Kmet et al., 2004). This quality assessment form consists of a 10-item checklist for qualitative studies, with studies evaluated on criteria including (1) description of question/objective, (2) study design, (3) study context, (4) connection to theoretical framework/body of knowledge, (5) sampling strategy, (6) data collection methods, (7) data analysis, (8) verification procedures, (9) conclusions and (10) reflexivity. Reviewers were provided with guidelines and instructions for undertaking a research quality assessment. The quality of assessed research was defined as strong (score of $> 80\%$), good (70–80%), adequate (50–70%) or limited ($< 50\%$) (Lee et al., 2008). Any disparities between reviewers were resolved through discussion, with 100% agreement achieved.

Charting the Data

Data were extracted and charted into a spreadsheet under the following pre-defined headings: (a) author, year, country; (b) sample characteristics; (c) qualities; (d) data collection; (e) data analysis and (f) authors' themes.

Collating, Summarising and Reporting the Results

In accordance with the meta-ethnographic approach developed by Noblit and Hare (1988) and refined by Atkins et al. (2008), one author initially read each study multiple times to identify key concepts and themes. These main concepts and themes were then compared across studies to explore relationships from concepts and themes between studies; these phases were discussed with the authorship team to reach consensus prior to commencing the subsequent stages. Translation of the findings was then conducted, defined as the process in which "interpretations of one study are translated into the interpretation of another" (Noblit et al., 1988. Pg. 31). In this translation, key concepts identified from the first two studies were compared to form the first translation. Then, the findings from the third study are compared with the first translation to develop the second translation. This

process is repeated until all studies are analysed, thus obtaining the final translation. This process was undertaken by one author and discussed with the authorship team. The final translation is synthesised through assembling and categorising themes based on the similarity in meaning. Two authors performed the final translation, engaging in extensive discussion to achieve consensus on the final translation, which was reported back to the authorship team for discussion. The study's authors consisted of researchers with expertise in the field of autism from both a research perspective and a clinical perspective. Three authors are occupational therapists, and three authors are occupational therapy students.

Results

Search Results

Electronic searches located a total of 568 articles using the key terms (Fig. 1) with an additional seven articles identified through other sources (Google Scholar). After removing the duplicates, 352 articles remained and were reviewed at the title and abstract level, resulting in 258 articles that did not meet the inclusion criteria. The full texts of the remaining 94 articles were reviewed, and 22 were found to meet inclusion criteria. Articles were excluded at full-text review due to (1) only using quantitative study design; (2) they did not explore experiences of friendship; (3) were related to an intervention or (4) qualitative data from eligible participants could not be isolated. No additional articles were found through a manual search of the references.

Study Characteristics

The majority of studies originated from the UK ($n = 13$), followed by the USA ($n = 6$), Australia ($n = 2$) and Japan ($n = 1$) (see Table 1). The articles were predominantly published between 2010 and 2020 ($n = 18$), reflecting the emerging nature of this field. Many of the studies employed qualitative methods ($n = 19$), with the remaining three studies adopting a mixed-method approach. These three articles were included as the qualitative data of each study met the inclusion criteria. Data collection and analysis approaches varied between the articles. Most studies used semi-structured interviews ($n = 17$) and thematic analysis ($n = 15$). All the included articles are of strong quality ($> 80\%$).

Participant Characteristics

A total of 252 participants were included in the studies, among whom 108 were males, 142 were females and two were gender non-binary. Six of the studies used a female-only sample, four investigated only males, eleven used a

Fig. 1 PRISMA flowchart
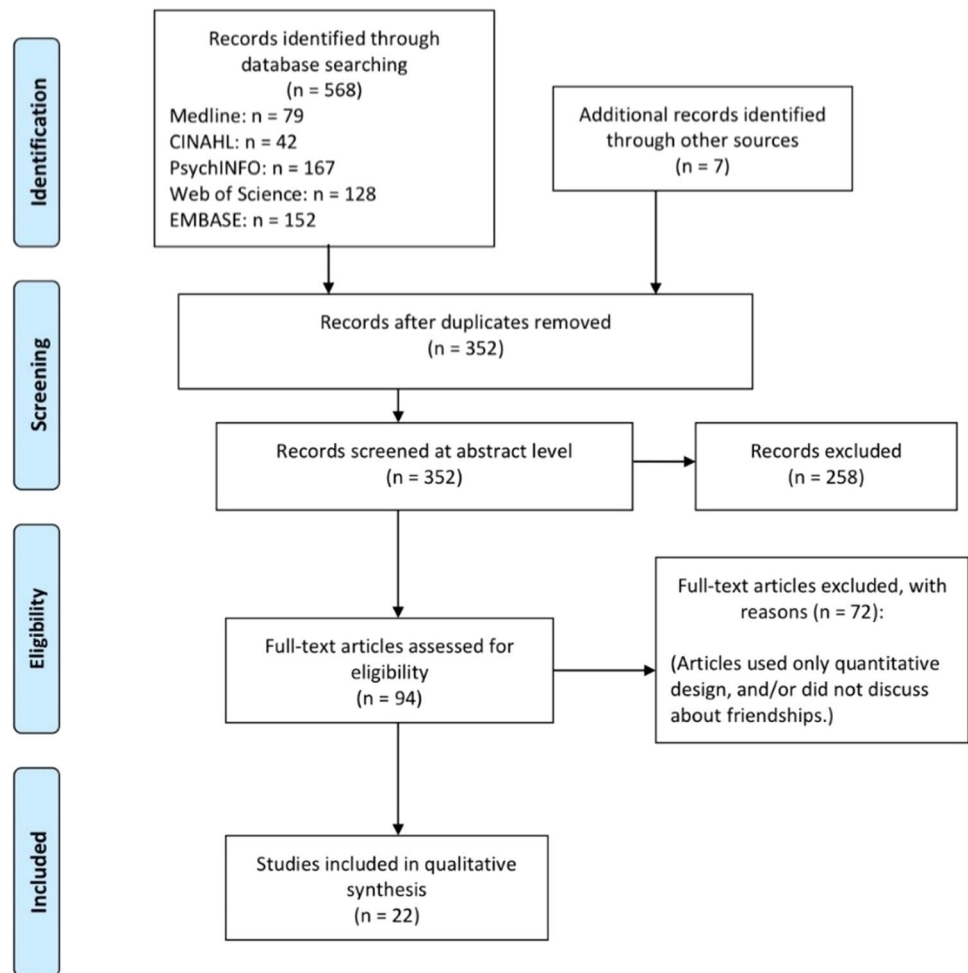
sample of both males and females, and the remaining one study sampled various gender including males, females and non-binary people (Table 2). All participants had a formal diagnosis of autism or Asperger syndrome, with one participant reported to have a co-occurring learning disability. Most studies focused on adolescents (*n* = 14, one study recruited secondary students although did not specify the age range), followed by adults (*n* = 4) and children (*n* = 2); one study recruited both adolescents and adult participants, and another study did not specify the age range of the participants.

Meta-ethnographic Results

The meta-ethnographic analysis resulted in 14 themes arranged under two major headings: (1) autistic meanings of friendship and (2) autistic experiences of friendship (Fig. 2).

Autistic Meanings of Friendship

The theme 'Autistic meaning of friendship' describes the definitions used by autistic individuals to describe

friendships and their formation. This theme is comprised of five sub-themes including (1) "They would always look after me", (2) "They actually understand", (3) "Grow to become friendly", (4) "Like the things I like" and (5) "people like me".

"They would always look after me"

Participants described friends as someone who was there to offer help in times of need, being "someone who cares for you and protects you" (Calder et al., 2013, p. 306) or who could help you (Carrington et al., 2003; Murphy et al., 2017; O'Hagan & Hebron, 2017; Sumiya et al., 2018). Boys participating in the study by Sedgewick et al. (2019) stated that they chose someone to be their friend if the person provided support or did things for them, such as helping with homework. While this help was described as being one-way for some participants, some participants also acknowledged the reciprocity of this relationship, recognising that they could offer to help their friends (Calder et al., 2013; Howard et al., 2006; Murphy et al., 2017).

Table 1 Studies included in review

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Calder et al., 2013, UK	Semi-structured interviews	Thematic analysis	**Theme 1: Perceived role of friendship** – described friendship largely in terms of companionship; and small number of friends **Theme 2: Challenges of friendship** – find friends confusing; had difficulties maintaining friendships; feelings of exclusion and loneliness	Strong (70%)
Carrington et al., 2003, Australia	Semi-structured interviews	Constant comparison and coding using QSR NUD*IST	**Theme 1: Understanding of concepts or language regarding friendships** – struggle to describe their own understandings of friendship **Theme 2: Description of what is not a friend** – individuals who do not share the same interests; fights and arguments with peers leading to feeling uncomfortable around these people; mean and unfriendly behaviour **Theme 3: Description of what is a friend** – similar interests or personalities; people that they can respect; people who they can do activities with and people one has known for a long time **Theme 4: Description of an acquaintance** – differences in personality **Theme 5: Using masquerading to cope with social deficits** – may be aware that they do not fit in and try to mask their deficits	Strong (85%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Causton-Theoharis et al., 2009, USA	Autobiographies	NS	**Theme 1: Desiring connections** – aware of isolation and long for social interaction and friendship in Asperger individuals **Theme 2: Navigating the world of people** – need for predictability; unconventional communication styles (unspoken, typing, picture exchange systems); find sensory systems to be quite challenging; intense interests **Theme 3: Turning within: Imagination as a substitute for friendship** – use imagination as a way of self-defence against those who teased her, or as an enjoyable escape	Strong (80%)
Cook et al., 2018, UK	Semi-structured interviews	Thematic analysis	**Theme 1: Motivation to have friends** – friends often also had a disability **Theme 2: Challenges faced by girls with autism** – including communication, bullying, social isolation and friendship group difficulties **Theme 3: Masking their autism** – strategy to adjust behaviour / traits to assimilate; can be negative in that disability is not recognised by others and understanding of peers is reduced	Strong (90%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Crompton et al., 2020, UK	Semi-structured interviews	Thematic analysis	**Theme 1: Cross-neurotype understanding** – better understood by other autistic people; more anxious around non-autistic family and friends; can find support in non-autistic friends. **Theme 2: Minority status** – pressure to conform need to mask natural behaviours to 'fit in'; outings and experiences do not take perspectives of autistic individuals into account and can be challenging; others expect autistic people to behave non-autisticly. **Theme 3: Belonging** – more sense of belonging amongst autistic peers and family; can be 'myself' with other autistic people and do not have to mask ASD qualities; happiness with autistic friends and family maintains mental health and wellbeing and building resilience	Strong (85%)
Daniel et al., 2010, USA	Semi-structured interviews	Thematic analysis	**Theme 1: Having friends** – have friends who are male and female of same age, older and younger. **Theme 2: Challenges in establishing friendships** – does not typically initiate contact. **Theme 3: Sharing interests** – sharing interests and participating in common activities are part of friendship	Strong (85%)
Forster & Pearson et al., 2020, UK	Semi-structured interviews	Interpretive phenomenological analysis	**Theme 1: Perceptions and 'learning the formula'** – self-perception, perception of others, time and practice. **Theme 2: Socialising… 'it's more complicated than that'** – differences in communication styles, difficulty initiating interactions, requires effort, reciprocity and like-mindedness are desirable friendship qualities	Strong (90%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Howard et al., 2006, USA	Semi-structured interviews; photographs taken by the participant	Grounded theory	**Theme 1: Qualities of a friend** – shared interest and proximity, help and support, caring and respond, forgiveness, reciprocity **Theme 2: Negotiating focused interest** – have to compromise the interests that are different from friends' **Theme 3: Enjoyment of friendship and desire to have them** – desire to connect with others, happiness and enjoyment from friendships	Strong (95%)
Milner et al., 2019, UK	Group discussions, individual discussions and/or telephone discussions	Thematic analysis	**Theme 1: Difficulties in social interaction** – do not fit in, have conflicts, difficult in maintaining friendship, feelings of loneliness and depression **Theme 2: Motivation** – have the desire to make friends **Theme 3: Coping strategies to deal with the disorder** – need time alone, routine, masking/ adaptive morphing	Strong (80%)
Müller et al., 2008, USA	Semi-structured interviews	Thematic analysis	**Theme 1: Intense isolation** – being isolated throughout childhood to adulthood, pain of isolation increased as they grew older and became more conscious of being 'different', 'alone', or 'out of place' **Theme 2: Difficulty initiating** – do not understand how to initiate social interactions, source of anxiety and stress **Theme 3: Communication challenges** – unable to pick up social rules (e.g. emotional inferences, interpreting and using gestures and tone of voice) **Theme 4: Effort to develop social awareness** – ongoing efforts to compensate for effects of autism by developing greater social/self-awareness (by reading books and articles about autism; joining autism support and social skill groups); noticed that social understanding improved with time and efforts	Strong (90%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Murphy et al., 2017, UK	Semi-structured interviews	Thematic analysis	**Theme 1: Relationships as a source of support**—friends provide physical protect and spiral support **Theme 2: Perceptions of similarity and difference** -confuse, expectation that once similarity was established there should be no nuanced differences; act themselves among close friends, while camouflage among normal friend (not mimic them, but talk interest) **Theme 3: Valued qualities in self and others**—respect each other, trust other [facilitators] humour, a social skill, feel accept within their peer groups **Theme 4: The development and maintenance of relationships**—having a friend playing the role of mentor, develop new knowledge and understanding	Strong (85%)
O'Hagan & Hebron, 2016, UK	Semi-structured interviews	Thematic analysis	**Theme 1: The meaning of friendship**—trust and respect; reciprocal help and support **Theme 2: Nature of friendship**—lack of friendship, feel loneliness and poor quality friendships, lead to anxiety **Theme 3: Friendship development**—peer rejection potentially due to unconventional social behaviours	Strong (90%)
Potter, 2014, UK	Diaries and an activity-based approach (taking photos of friends and making comments on the photos)	Grounded theory	**Theme 1: Ben's perspectives on friendship**—understand friendship, positive engagement **Theme 2: Understanding of changes in friendship**—able to reflect his relationship and respect peer friendships and aware changes in the nature of friendships	Strong (100%)
Rossetti, 2015, USA	Semi-structured interviews	Symbolic interactionism (Bogdan & Biklen, 2003)	**Theme 1: Mutual benefits**- exchange of both joy and sadness, a supportive ease of interaction with each other	Strong (100%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Ryan et al., 2020, UK	Focus groups	Thematic analysis	**Theme 1: Establishing friendship** – having shared interests important for friendships, importance of being loyal and trustworthy **Theme 2: Friendship conflict and loss** – distressing, friends moving away, new school, and death of a friend **Theme 3: Friendship and technology** – online friendship seems to be easier than real life. However, aware of the risks of making friends online **Theme 4: Gender differences** – some are open to having friends who are boys, but some feel anxious about it	Strong (100%)
Sedgewick et al., 2016, UK	Semi-structured interviews	Thematic analysis	**Theme 1: Companionship** **Theme 1.1: Companionship (friends are people to hang out with)** – friends are defined as people they hang out with, doing the same things together **Theme 1.2: Companionship (friends make me laugh)** – being funny, able to share humour is a key characteristic of a friend **Theme 1.3: Companionship ('Girl Talk')** – for the females, they feel that shared talk is more significant than shared activities, having someone to talk to **Theme 2: Scripting (saying what you're supposed to)** – feel that they have to echo something that they heard before to get along with friends **Theme 3: Conflict (when things get tough)** – being excluded, having trust betrayed	Strong (90%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Sedgewick et al., 2019, UK	Semi-structured interviews	Thematic analysis	**Themes for both males and females:** **Theme 1: People like me** – friends are people of similar age, gender and interests. **Theme 2: Friends are there for you**—but nature of support differed by gender. **Theme 3: Spending time together** – factor to strengthen friendship. **Themes for females:** **Theme 1: Nature of social networks** – importance of close friends for emotional and social support. **Theme 2: Conflict** – arguing with friends, gossiping. **Theme 3: Wanting to fit in** – feel that their peers were evaluating them in a hierarchical way. **Theme 4: Online interactions** – social media helped to reinforce offline friendships. **Theme 5: Friendship insecurity** – worried that they are not good enough. **Themes for males:** **Theme 1: Friends as people they do things with**. **Theme 2: Conflicts** – although males did not see a need to talk about problems, feel that conflicts do not have lasting impact on friendship and can be easily fixed. **Theme 3: Friends are there for you** – friends helping out, doing things for them	Strong (90%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Sosnowy et al., 2019, USA	Semi-structured interviews	Grounded theory	**Theme 1: Navigating social norms**— felt pressured to follow social norms but felt uncomfortable or unsure of how to do it; not adhering to these norms often resulted in negative reactions from other people or social rejection **Theme 2: Finding friends who accept their differences** – did not need to adhere to social norms with them, friends do not see their autism as a deficit, but a difference that was normalised by finding a place that they fit in; some found it easier to relate to others with autism because of shared understanding and experiences **Theme 3: Shared interests** – shared interests were another gateway to friendship because these relationships focused on an activity or topic, their social differences were not necessarily a central concern, whereas in every day interactions, these differences stood out	Strong (85%)
Sumiya, et al., 2018, Japan	Semi-structured interview	Thematic analysis	**Theme 1: Social motivation** – some had low motivation to make friends as they do not see the benefit of having friends; others were highly motivated to make friends, especially through extracurricular activities; but some had difficulties approaching peers **Theme 2: Loneliness** – difficulty casually socialising with peers at school and other group situations **Theme 3: Anxiety** – constantly worried about conversation topics, and general anxiety regarding making new friends **Theme 4: Distress** – the use of 'masking' to hide their negative feelings towards and difficulty in social interactions, annoyance due to friends' unpredictable behaviours	Strong (95%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Tierney et al., 2016, UK	Semi-structured interviews	Interpretative phenomenological analysis	**Theme 1: Desire for friendship** **Theme 1.1: Context for befriending** – wants to make friends to feel supported **Theme 1.2: Challenges to developing friendships** – being unable to read the intentions or meanings in others' communication and own style of communication hard for peers to understand them, leading to confusion and anxiety; had to go to great lengths to make and maintain friendship **Theme 2: Overcoming challenges** **Theme 2.1: External support** – initiation of friendship assisted by parents, choosing friends who nurture them **Theme 2.2: Innate Skills** – some of them feel that they could overcome challenges due to their strong innate empathising skills (relating to good memory), enhancing their befriending skills **Theme 2.3: Imitation**—improved their confidence and skills in social situations, pretending to be engaged in an activity when they were observing peers in order to imitate them; copying included facial expressions, postures, tone of voice, topics of conversation, choices of interests **Theme 2.4: Masking** – feeling unhappy and anxious in social situations and they masked their true feelings by wearing either an excessively happy facial expression or a very blank one in most social environments; often maintained their mask, for fear of losing the friendship if their true feelings are unveiled **Theme 2.5: Repercussions of strategies** – feelings of anxiety and depression, some used self-harm as a way to cope with feelings associated with frequent rejections and miscommunications	Strong (90%)

Table 1 (continued)

Author, year, country	Data collection method	Data analysis	Authors' themes	Methodological quality
Vine Foggo & Webster, 2017, Australia	Semi-structured interviews	Thematic analysis	**Theme 1: Social interactions are important** – viewing social interactions with other females as important **Theme 1.1: Having friends** – happiness and emotional support as the major benefit to friendship, sense of belonging **Theme 1.2: Friendship qualities** – Trust as a key quality, nice and understanding **Theme 1.3: Sharing experiences** – spending time together such as shopping, movies, parties and sleepovers **Theme 2: Social interactions are difficult** – when socialising was difficult **Theme 2.1: Managing conflict and group interactions**- disagreements and arguments were identified as a difficult aspect of friendships along with knowing how to keep friends, and knowing how to react in social situations, group interactions led to feelings of social exclusion **Theme 2.2: Perception of others**—perceived by peers in a negative light due to their refusal to act the way others do	Strong (90%)

Table 2 Demographic characteristics of participants from included studies

Author, year, country	Sample characteristics N (male/female)	Major diagnosis	Age range; mean	IQ mean (SD)	Other characteristics
Calder et al., 2012, UK	12 (8, including 1 pair of monozygotic twins/4)	Autism	9–11; 10.3	FSIQ: 95.17 (17.90) VIQ: 91.42 (16.01) PIQ: 100.00 (20.40)	Attending mainstream primary school in London. Range of ethnicities. Including White British, White Other, Black African
Carrington et al., 2003, Australia	5 (4/1) Asperger syndrome	Asperger syndrome	14–17; 15.8	NS	Attending a secondary school in Australia that provides special education support. Caucasian
Causton-Theoharis et al., 2009, USA	7 (4/3)	Autism	NS	NS	From Australia, USA, Germany and India. Communicate via speech, facilitated communication and rapid prompting
Cook et al., 2018, UK	11 (0/11)	Autism	11–17; 14.45	NS	Attending mainstream and special schools in Southeast England Co-occurring conditions include: speech and language difficulties anxiety, global developmental delay ADHD, dyslexia, global developmental delay attention deficit hyperactivity disorder, OCD, facial tic disorder, anxiety, depression Epilepsy, moderate learning difficulties
Crompton et al., 2020, UK	12 (2/10)	Autism	21–51; 33.58	FSIQ: 116.9 (14.8)	From UK. Without a diagnosis of social anxiety disorder. Mean AQ 35.6
Daniel et al., 2010, USA	7 (7/0)	Autism, Asperger syndrome	10–14; 13.03	IQ in the normal to above normal range (according to school records)	All reported to have good verbal communication
Forster & Pearson et al., 2020, UK	5 (3/2)	Autism	22–25; 22.6	NS	All participants had low support needs. Primarily communicated using verbal means
Howard et al., 2006, USA	1 (1/0)	Asperger syndrome	12.7	NS	Home-schooled
Milner et al., 2019, UK	18 (0/18)	Autism (n = 12 diagnosed, n = 2 self-informed)	11–55 (NS)	NS	-

Table 2 (continued)

Author, year, country	Sample characteristics N (male/female)	Major diagnosis	Age range; mean	IQ mean (SD)	Other characteristics
Müller et al., 2008, USA	18 (13/5)	Asperger syndrome, HFA, PDD-NOS (n = 1 self-informed)	18–62; 37.2	No intellectual disability	n = 7 had attended special education, n = 12 were single, n = 2 married and n = 3 divorced. Most participants had at least some college education
Murphy et al., 2017, UK	8 (6/2)	Autism, Asperger syndrome	13–16; 14.3	No intellectual disability	Attending mainstream education
Myles et al., 2019, UK	8 (0/8)	Autism, Asperger syndrome	11–17; 13.5	NS	Attending mainstream education
O'Hagan & Hebron, 2016, UK	3 (3/0)	Autism	13–15; 13.6	NS	Attending rural mainstream school with specialist resource provision
Potter, 2014, UK	1 (1/0)	Autism	10	Severe learning disabilities	Understood simple everyday conversation and was able to converse in well-formed phrases
Rossetti, 2015, USA	2 (1/1)	Autism	NS, secondary students	NS	n = 1 types to communicate, has extensive support needs. n = 1 extensive support needs
Ryan et al., 2020, UK	10 (0/10)	Autism or Asperger syndrome	12–15; 13.8	No intellectual disability	Attending mainstream education
Sedgewick et al., 2016, UK	23 (10/13)	Autism or Asperger syndrome	12–16; males: 13.8, females: 14	Males: FSIQ: 78.4 VIQ: 79.5 PIQ: 81.2 Females: FSIQ: 81.2 VIQ: 77.8 PIQ: 84	Mean SRS-2 (autistic symptomology) for females was 72 and males 103
Sedgewick et al., 2019, UK	53 (26/27)	Autism, Asperger syndrome	11–17 Males: 14.3 Females: 14.4	Males: FSIQ:104.9 VIQ:103.1 PIQ:105.9 Females: FSIQ: 99.2 VIQ:96.4 PIQ:101.4	Attending mainstream education (currently or previously). Three had moved from mainstream to special school. ADOS severity score for males was 5.7 and was 3.8 for females. SRS-2 T score was 75.2 for males and 81.5 for females

Table 2 (continued)

Author, year, country	Sample characteristics N (male/female)	Major diagnosis	Age range; mean	IQ mean (SD)	Other characteristics
Sosnowy et al., 2019, USA	20 (11/7, 2 gender nonbinary)	Autism	18–29; 23.5	NS	All had completed high school. Most had or were attending college or had a bachelors/ graduate degree. Most lived with parents and were not employed. Participants were non-Hispanic white, Asian and African American
Sumiya, et al., 2018, Japan	11 (8/3)	Autism, Asperger syndrome, PDD-NOS	10–15; 12.8	VIQ: 100.5	Co-occurring conditions include: OCD, depression, learning disorder, ADHD
Tierney et al., 2016, UK	10 (0/10)	Autism, Asperger syndrome	13–16; 14.4	NS	Range of education settings, primarily mainstream. Co-occurring conditions include ADHD and anxiety
Vine Foggo & Webster, 2017, Australia	7 (0/7)	Autism, Asperger syndrome	13–17; 14.1		Attending mainstream education

ADHD Attention deficit hyperactivity disorder, *ADOS* autism diagnostic observation schedule, *AQ* autism quotient, *FSIQ* full-scale intellectual quotient, *Ns* Not stated, *OCD* obsessive compulsive disorder, performance intellectual quotient, *SRS* social responsiveness scale, *VIQ* verbal intellectual quotient
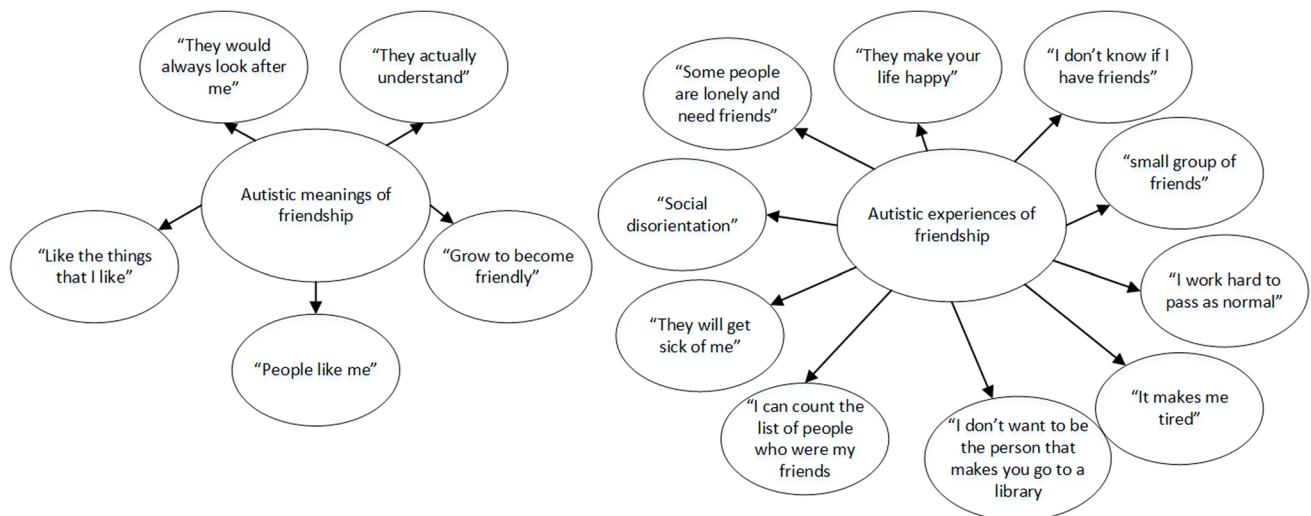
Fig. 2 Overview of meta-ethnographic results

"They actually understand"

Respect, trust, understanding, acceptance and caring were used to describe friends (Carrington et al., 2003; Crompton et al., 2020; Daniel & Billingsley, 2010; Forster & Pearson, 2020; Howard et al., 2006; Murphy et al., 2017; O'Hagan & Hebron, 2017; Ryan et al., 2020; Sosnowy et al., 2019; Vine Foggo & Webster, 2017). For example, one participant stated, "a friend is someone trustworthy and will understand you" (Vine Foggo & Webster, 2017, p. 79). Additionally, participants extended the qualities of respect and understanding to include "the ability to be themselves without judgment" (Vine Foggo & Webster, 2017, p. 79). This was echoed by another participant, stating, "…true friends… they understand and just don't not like me for my autism" (Myles et al., 2019, p. 10). Participants expressed feeling valued by their friends. Loyalty (Daniel & Billingsley, 2010; O'Hagan & Hebron, 2017; Vine Foggo & Webster, 2017) and forgiveness were also emphasised as important for friendships (Howard et al., 2006).

"Grow to become friendly"

Autistic individuals defined friendship based on proximity (Calder et al., 2013; Howard et al., 2006), or developed friendships from family friends, those that they had known for a long time (Daniel & Billingsley, 2010; Rossetti, 2015), had grown up with (Carrington et al., 2003) or had spent a lot of time with (Ryan et al., 2020; Sedgewick et al., 2019). One adolescent in the study by Murphy et al. (2017) discussed the notion of slowly building relationships with potential friends "Every morning I say hello to at least all of my friends, and that slowly builds up the trust between us and I find that easier. Each day I

can talk to them more and I can relax around them more and understand them more." (Murphy et al., 2017, p. 30).

"Like the things I like"

Shared interests and participating in common activities were highlighted by many participants as a key requirement for friendship (Carrington et al., 2003; Daniel & Billingsley, 2010; Howard et al., 2006; Müller et al., 2008; O'Hagan & Hebron, 2017; Rossetti, 2015; Ryan et al., 2020; Sedgewick et al., 2016; Sosnowy et al., 2019; Vine Foggo & Webster, 2017), with relationships formed on shared interests facilitating a sense of belonging. Children reported picking eligible friends by exploring whether they appeared to share similar interests (Daniel & Billingsley, 2010). Some participants stated shared interests could provide an entry point to conversation and ongoing connection (Howard et al., 2006; Ryan et al., 2020; Sosnowy et al., 2019), allowing participants to talk about the same things and be comfortable with each other (Carrington et al., 2003). Some children reported that while it was important for friends to be interested in the same topics, they also recognised the importance of acknowledging and being interested in their friends' interests, even if they were not their own (Howard et al., 2006). While shared interests were viewed as an important friendship quality for autistic individuals, when friends had different interests, it could become frustrating (Sedgewick et al., 2016). When participants had to compromise their interests to fit in with peers, some autistic individuals reported feeling exhausted and distressed (Causton-Theoharis et al., 2009; Vine Foggo & Webster, 2017).

"People like me"

Autistic participants reported developing friendships with those that that were similar to them (Murphy et al., 2017), with some participants reporting that they tended to befriend peers who were also autistic or had other disabilities, or who were 'different' in some ways (Cook et al., 2018; Crompton et al., 2020). Adults in Crompton et al. (2020) explained that they found it easier to relate to others with autism because of their mutual understanding and empathy and that they believed this was greater than if they had been non-autistic. These participants also suggested they did not have to conceal the autistic aspects of their behaviours or communication styles while interacting with their autistic friends, which allowed them to be their "authentic self".

Autistic Experiences of Friendship

The theme of autistic experiences of friendship describes how autistic individuals experience friendship including the benefits and challenges. This theme is comprised of ten subthemes including (1) "They make your life happy", (2) "I don't know if I have friends", (3) "A small group of friends", (4) "Some people are lonely and need friends", (5) "Social disorientation", (6) "I work hard to pass as normal", (7) "They will get sick of me", (8) "I can count lists of people who were my friends" and (9) "It makes me tired".

"They make your life happy"

The major benefits of having friends, mentioned by many adolescent participants, are the supports offered, including emotional supports (Howard et al., 2006; Murphy et al., 2017; Myles et al., 2019; Rossetti, 2015; Sedgewick et al., 2019; Vine Foggo & Webster, 2017), social supports (Crompton et al., 2020; Sedgewick et al., 2019) and practical supports (Rossetti, 2015; Sedgewick et al., 2019). Some participants suggested that friendship provided a sense of belonging, overall happiness in schools and feelings of social security (Myles et al., 2019; Rossetti, 2015). One participant from Murphy et al., (2017, p. 26) stated that friends could "prevent you from being lonely" and were "there to turn to" when feeling threatened, with some participants discussing how friendships could provide support and mentoring to assist them in developing their social skills and relationships. Such support from friends had a protective element for many participants, with one participant commenting that "when I'm not with friends... I... think of all the bad things in life and just carry on thinking about them over and over until I get really depressed" (Tierney et al., 2016, p. 78). The social support provided by friends included friends explaining social situations to them and acting as mediators for conflicts (Crompton et al., 2020; Sedgewick et al., 2019).

Boys concentrated more on practical support than girls, who focused on emotional and social support.

"I don't know if I have friends"

Children reported being uncertain if other children liked them or whether they were friends (Calder et al., 2013). Similarly, while some children reported that they identified peers they wanted to make friends with, they had difficulty initiating friendships and were uncertain of how to make friends, often waiting for others to make the first step (Daniel & Billingsley, 2010). Women in Milner et al. (2019) reported that while they were part of a group, they often felt disconnected from the group, as did adolescents (Forster & Pearson, 2020; Myles et al., 2019; Tierney et al., 2016).

"A small group of friends"

While reporting a desire for friends, some participants reported a desire for alone time (Calder et al., 2013; Milner et al., 2019; Müller et al., 2008; Vine Foggo & Webster, 2017), with some children and adults reporting enjoyment of being alone (Müller et al., 2008; Sedgewick et al., 2016; Sumiya et al., 2018). Some participants reported preferring to have a few close friends (Ryan et al., 2020; Sedgewick et al., 2019; Sosnowy et al., 2019; Sumiya et al., 2018), as some participants found it stressful to maintain multiple close relationships (Sedgewick et al., 2019; Sosnowy et al., 2019). Having fewer friends allowed them to spend more time with them to build greater trust within the friendship (Ryan et al., 2020). One adolescent shared: "I was actually pretty content, but at the same time… lonely. Like, I wanted friends that I could talk to, like a group… like a small group. Cos (because) this was a big group, everyone was always moving about" (Myles et al., 2019, p. 14). This sentiment was not shared by all participants, with another participant stating that "I would really like to be the sort of person who could have a bigger circle of friends" (Müller et al., 2008, p. 180).

"Some people are lonely and need friends"

While many participants reported a desire to make friends, children, adolescents and adults reported difficulties forming friendships (Calder et al., 2013; Causton-Theoharis et al., 2009; Cook et al., 2018; Daniel & Billingsley, 2010; Milner et al., 2019; Sedgewick et al., 2016). Participants reported feelings of loneliness (Carrington et al., 2003; Causton-Theoharis et al., 2009; Daniel & Billingsley, 2010; Müller et al., 2008; O'Hagan & Hebron, 2017; Sumiya et al., 2018; Tierney et al., 2016), with some participants reporting they did not have friends (Carrington et al., 2003; Potter, 2015),

or felt frustrated that they could not develop relationships (Murphy et al., 2017). Autobiographical texts examined by Causton-Theoharis et al. (2009) described often intense feelings of loneliness despite a desire to connect with others. These feelings of loneliness, exclusion and isolation were upsetting to participants (Calder et al., 2013), with one adult describing this loneliness as "very painful" (Causton-Theoharis et al., 2009, p. 88).

"Social disorientation"

Participants reported difficulty navigating neurotypical relationships and forms of communication, resulting in uncertainty around how to respond in conversations and how to form and maintain friendships (Causton-Theoharis et al., 2009; Crompton et al., 2020; Forster & Pearson, 2020; Müller et al., 2008; Sosnowy et al., 2019; Tierney et al., 2016). Factors such as understanding body language and noticing neurotypical social cues were difficult, making conversation confusing (Crompton et al., 2020; Forster & Pearson, 2020; Müller et al., 2008; Myles et al., 2019; Tierney et al., 2016). Some participants described talking with unfamiliar people as more difficult, anxiety-provoking and embarrassing (Forster & Pearson, 2020; Müller et al., 2008; Murphy et al., 2017), with participants expressing concerns that failing to follow social rules could lead to misunderstandings (Tierney et al., 2016), negative reactions from other people or social rejection (Sosnowy et al., 2019). Participants also expressed worries about their conversational topics, i.e. whether they could keep up with the topic or whether their peers were interested in the topic they wanted to talk about (Sumiya et al., 2018). Autistic women in Milner et al. (2019) reported that while they found conforming to both male and female styles of communication difficult, some found it more challenging to connect with other women due to their stereotypical styles of communication such as gossiping, with women in Tierney et al. (2016) study reporting similar experiences. Due to the pressures of face-to-face or verbal interaction, some participants reported a preference for using internet based forms of communication (such as social media) (Müller et al., 2008; Ryan et al., 2020) or engaging with peers through online gaming (O'Hagan & Hebron, 2017). This was not shared by all participants, with others finding text messaging difficult and open to confusion (Ryan et al., 2020). Other participants used little or no spoken language, preferring facilitated typing, assistive technology and picture exchange systems (Causton-Theoharis et al., 2009; Müller et al., 2008). Tierney et al. (2016) suggested that the differences in communication styles, both verbal and nonverbal, could result in a mutual misunderstanding between the participants and their peers and obstruct the development of friendship. Some of the participants, mostly adults, mentioned their ongoing intentional efforts to improve their social skills (Forster & Pearson, 2020; Müller et al., 2008), with some participants reporting that using these skills may have grown easier as they grew older (Forster & Pearson, 2020; Müller et al., 2008).

"I work hard to pass as normal"

Child, adolescent and adult participants felt that they were excluded due to being "abnormal" (Calder et al., 2013) or "different" (Cook et al., 2018; Milner et al., 2019). Self-rehearsal and camouflaging (referred to as adaptive morphing herein in acknowledgement of negative connotations associated with camouflaging; Lawson, 2020) was commonly used by autistic individuals in attempts to mask autistic traits and fit in (Crompton et al., 2020; Forster & Pearson, 2020; Milner et al., 2019; Müller et al., 2008; Sedgewick et al., 2019; Sumiya et al., 2018; Tierney et al., 2016). Some participants reported making attempts to change who they were or to imitate or observe others in attempts to develop relationships (Causton-Theoharis et al., 2009; Cook et al., 2018; Müller et al., 2008; Murphy et al., 2017; Myles et al., 2019; Tierney et al., 2016). Participants in Tierney et al. (2016) stated that they would consciously observe and imitate their non-autistic peers, including their facial expressions, postures, tone of voice, topics of conversation and choices of interests; while participants in Sumiya et al. (2018) reported that they would pretend to understand the conversations that they had trouble following. Adolescent girls in one study also spoke of engaging in activities such as dating to fit in (Sedgewick et al., 2019). Although autistic individuals reported using adaptive morphing in attempts to address difficulties in friendships, it was found that such attempts could result in negative outcomes, especially when participants surpassed their threshold to maintain their efforts. Several participants from Milner et al. (2019) study commented on the immense effort it takes to fit in, which could lead to emotional fatigue, distress and identity crisis and further cause negative repercussions on their psychological wellbeing (Tierney et al., 2016). When discussing friendships with other autistic individuals, autistic adults shared that they did not feel the same need to camouflage (Crompton et al., 2020; Forster & Pearson, 2020).

"They will get sick of me"

Participants reported worries that their peers did not like them (Calder et al., 2013; Milner et al., 2019; Müller et al., 2008; Vine Foggo & Webster, 2017) or that peers would stop being their friends, with one child stating: "But the problem is he might get sick of me, and he probably has other friends, probably. So I think, oh, I don't think so …Because I think he might not like me as much and he might not know…how to say no…." (Daniel & Billingsley, 2010, p. 226). Some

participants reported difficulty forming trust with others (Daniel & Billingsley, 2010; Murphy et al., 2017), fear of being judged by potential friends (Ryan et al., 2020) and a sense of friendship insecurity, being worried that they would be rejected or lose their friends (Ryan et al., 2020; Sedgewick et al., 2019; Sumiya et al., 2018; Tierney et al., 2016).

"I can count lists of people who were my friends"

Participants reported difficulty maintaining friendships, having conflicts with friends, or needing to develop new friendships (Carrington et al., 2003; Cook et al., 2018; Forster & Pearson, 2020; Milner et al., 2019; Potter, 2015; Ryan et al., 2020; Sedgewick et al., 2019). Some participants reported that they may have done something wrong, which resulted in a deterioration of friendships (Forster & Pearson, 2020). Arguments and conflict were reported to be difficult to navigate for autistic individuals (Carrington et al., 2003; Milner et al., 2019; Sedgewick et al., 2019; Vine Foggo & Webster, 2017) and resulted in loss of friendships (Forster & Pearson, 2020; Milner et al., 2019). Gossiping, feelings of exclusion from a friend group, jealousy or betrayal were reported to cause conflicts among adolescents girls (Ryan et al., 2020; Sedgewick et al., 2016). Boys' conflicts were mainly caused by excessive jokes made between friends, which were less likely to have a lasting impact on friendship (Sedgewick et al., 2019). Additionally, Sedgewick et al. (2019) found that some adolescent girls with autism dealt with conflicts by an "all-or-nothing" approach (i.e. taking the sole responsibility with quick apologies, or ending the friendship entirely, seeing the other person as the wrong-doer or considering it unresolvable).

"It makes me tired"

Adult participants reported feelings of anxiety or nervousness during social situations which sometimes led to exhaustion (Crompton et al., 2020; Tierney et al., 2016) and avoidance of social situations (Causton-Theoharis et al., 2009). Social situations and developing friendships were also found to be tiring to some participants (Forster & Pearson, 2020; Milner et al., 2019; Vine Foggo & Webster, 2017), often due to the requirement to conform to neurotypical social norms: 'I always find that hugely overwhelming…I hang around with them in that way, but for me I do find that talking to people kind of wears me down. I can't really have friends that I talk to every single day" (Forster & Pearson, 2020, p. 1112). While adult participants in Crompton et al. (2020) valued their friendships with neurotypical individuals, some participants reflected that friendships with neurotypical individuals often required greater energy and effort, resulting in feelings of exhaustion and tiredness.

Contributing to feelings of being overwhelmed was the need for predictability and unconventional responses to sensory information (Causton-Theoharis et al., 2009; Sumiya et al., 2018). Unconventional responses to sensory stimuli (such as sound and touch) were reported by participants to obstruct the development of social relationships, with participants commenting that some social events were inaccessible due to noise, physical touch and sensory overload (Causton-Theoharis et al., 2009; Crompton et al., 2020; Tierney et al., 2016).

Discussion

This review explored autistic individuals' perceptions about their friendship experiences. Experiences of friendship varied, reflecting the unique and heterogeneous nature of autism; however, friendship was important to autistic individuals across the lifespan, with a strong desire to develop friendships built on shared interests, reciprocity, respect, trust and loyalty. The findings of this review directly counter historical theories that autistic people are fundamentally less socially motivated (Chevallier et al., 2012).

The lived experiences of friendship shared by autistic individuals showed commonalities with the general population. Our results support the notion that autistic and neurotypical individuals have the same meanings and desire for companionship, including having someone to trust and do things with (Bukowski & Sippola, 2005). Friendships for autistic individuals were formed based on propinquity and homophily, consistent with experiences of the general population. Autistic individuals tended to befriend peers who also had autism or other conditions; this made them feel understood and allowed them to be their authentic selves, thus becoming an important source of happiness, contributing to mental health and building resilience to manage difficulties in their everyday lives (Crompton et al., 2020). These findings align not only with the concept of homophily but also with the "double empathy problem", proposing that autistic individuals are better at empathising and understanding other autistic individuals while non-autistic individuals are better at empathising and understanding other non-autistic individuals (Milton, 2012). Autistic individuals may have greater success identifying and sharing interests with other autistic individuals and may have a greater understanding of the monotropic tendencies of autistic individuals (a few highly aroused interests), as opposed to the polytropic tendencies of non-autistic individuals (many interests with less arousal) (Murray et al., 2005). This provides an environment where autistic individuals feel more able to share their interests, providing a foundation for friendship formation. Monotropic tendencies may also contribute to difficulties in developing and maintaining friendships for autistic

individuals. Homophilous friendships are formed based on commonalities and shared interests; therefore, the polytropic tendencies commonly held by non-autistic individuals may provide greater opportunities to develop friendships based on varied and multiple interests (Block & Grund, 2014). Monotropic tendencies may operate to limit the dimensions in which connections may be formed; some autistic individuals themselves shared difficulties forming relationships with others due to their interests.

Although many autistic individuals valued and enjoyed friendships, they struggled with loneliness and feelings of exclusion (Calder et al., 2013; Crompton et al., 2020; Forster & Pearson, 2020; Milner et al., 2019; Müller et al., 2008; Ryan et al., 2020; Sedgewick et al., 2016, 2019; Sosnowy et al., 2019; Sumiya et al., 2018; Tierney et al., 2016). Autistic individuals commonly reported that differences in social norms, communication styles and social needs were a barrier to developing friendships (Crompton et al., 2020; Forster & Pearson, 2020; Howard et al., 2006; Milner et al., 2019; Myles et al., 2019; Sumiya et al., 2018; Tierney et al., 2016; Vine Foggo & Webster, 2017). As a result, autistic individuals frequently reported using adaptive morphing (Lawson, 2020) in attempts to 'fit in' with their non-autistic peers, by observing and imitating others' behaviours or 'pretending' to be socially competent and popular (Hull et al., 2017). Although adaptive morphing was reported to be used by autistic individuals as a means to 'fit in' and to be socially successful, these strategies were not always beneficial, with some participants sharing that they had to hide their true selves, often leading to feelings of distress (Tierney et al., 2016).

Lower social competence may mean that autistic individuals have less successful interactions and negative reactions from others, leading to increased difficulty developing friendships. This is in line with quantitative research reporting that in comparison to non-autistic school-aged students, autistic students had less time involved in co-operative interaction with peers, more time participating in reactive aggression towards peers, and more time engaged in solitary behaviours (Humphrey & Symes, 2011). Autistic students also report a reduced frequency of meeting friends outside of school (Heiman, 2000; Petrina et al., 2014) and respond more passively in interactions compared to non-autistic individuals (Heiman, 2000). It is also possible that rather than lower social competence, autistic individuals simply have different ways of interacting than neurotypical populations in line with the double-empathy hypothesis (Milton, 2012).

Alongside communication differences, reports of autistic individuals also appeared to suggest that anxiety might play a role in the friendship difficulties faced by autistic individuals. Participants reported difficulty trusting others (Daniel & Billingsley, 2010; Murphy et al., 2017), a concern that others would judge them (Ryan et al., 2020), and feelings of insecurity (Sedgewick et al., 2019), apprehension and anxiety

(Ryan et al., 2020; Sumiya et al., 2018). Indeed, negative experiences with neurotypical populations (i.e., bullying) may lead to apprehension. It is suggested that these experiences can lead to increased social anxiety (Rapee & Spence, 2004). Social anxiety may negatively influence an individual's perception of themselves and the perceived qualities of their friendships (Rodebaugh et al., 2014). It is likely that autistic individuals have more difficulty with friendships due to differences in ways of interacting. It may however also be possible that processes related to social anxiety will be operating in autism, negatively affecting self-reported success and quality of friendships. A poorer self-image and fear of judgement may contribute to autistic individuals feeling the need to engage in adaptive morphing or other behaviours to feel more comfortable in social situations (Lawson, 2020; Piccirillo et al., 2016), further hindering the ability to develop authentic friendships.

Coping with the demands of friendships and social interaction left many participants feeling exhausted, fatigued and distressed (Causton-Theoharis et al., 2009; Forster & Pearson, 2020; Milner et al., 2019; Vine Foggo & Webster, 2017). Though friendship is proposed to carry many psychological and health benefits (Mazurek, 2014), such efforts to develop friendships likely negate these positive effects and instead may contribute to poorer mental health. Indeed, reports of autistic participants in the studies included in this review highlighted that adaptive morphing, anxiety and fatigue often led to social avoidance, poor academic performance and poor mental health (American Psychiatric Association, 2013; Cook et al., 2018; Crompton et al., 2020; Forster & Pearson, 2020).

The findings of this scoping review should be considered within the context of developmental changes in peer relationships at the dyadic and group level within school-aged youth, as many studies included participants in this age category. It is known that at this developmental stage, significant emphasis is placed on the importance of social status and feeling accepted (Parker, 2006). Negative experiences at this stage related to a sense of belonging can impact on self-worth and mental health (Bagwell et al., 1998), whilst feeling unaccepted by peers has been shown to lead to negative self-appraisal (Humphrey & Hebron, 2015; Sandstrom & Cramer, 2003). Supporting school age autistic youth to have positive friendship experiences may assist in minimising feelings of negative self-appraisal and self-worth at this important developmental stage.

The findings of this review may have implications for both future research and practices. Firstly, this review revealed some misconceptions about people with autism. For instance, it is not disinterest in social interactions that separates autistic people from others or influences their choice to be alone; instead, they have the desire for friendship but are obstructed by the social and environmental challenges they

face. Friendship is important in reducing loneliness and preventing a range of poor mental health outcomes (Mazurek, 2014); however, for autistic individuals, some efforts to develop friendships (such as adaptive morphing) also lead to distress and poor mental health (Tierney et al., 2016). Autistic individuals may be in a position where they experience poor outcomes due to loneliness but attempts to remediate this may further contribute to poor mental health. Interventions and supports which seek to assist autistic individuals in developing friendships should emphasise the development of authentic friendships based on shared interests, mutual trust, respect and understanding, and should seek to increase awareness in non-autistic populations.

Social challenges faced by the autistic individuals can also be considered while designing support programs or interventions for this population. For example, group-based social skills interventions may provide strategies for dealing with multiple inputs of information or conflicts. However, providing social skills interventions alone may not be sufficient. The experiences of anxiety and its impacts on friendship can also not be overlooked. It is likely that social anxiety may be both an antecedent and a potential consequence of negative social experiences. As such, interventions, which assist in the remediation and management of social anxiety, may be beneficial for autistic individuals.

The double empathy problem at play within autistic non-autistic social interactions needs to be considered in future interventions to support autistic individuals' socialisation. Social readability is key in autistic non-autistic social interactions, with autistic individuals viewed as less readable than non-autistic individuals, which could lead to challenges in establishing social connections (Alkhaldi et al., 2019). Education about and exposure to social interactions with autistic individuals is necessary to enhance non-autistic knowledge and skill in interacting with autistic individuals, given that reading autistic individuals socially is a problem affecting the non-autistic population. Greater societal education about neurodiverse readability could support better social inclusion of autistic individuals, as greater knowledge about autism has led to more positive first impressions in other research (Sasson & Morrison, 2019).

Additionally (and not dissimilar to non-autistic populations), several gender differences in the experience of friendship were revealed, including levels of motivations to socialise, interests and types of activities they shared with friends, the sources of conflicts and the coping strategies they used to overcome social challenges. To date, most research has focused on the experiences of autistic males; however, it is apparent that autistic females may have unique experiences in the development of friendship. The distinct and common experiences of autistic males and females, therefore, warrant investigations.

Limitations

The findings of this review should be interpreted considering several limitations. First, most studies explored friendship from adolescents' perspectives, primarily from Western cultures. Given that the nature and patterns of friendships evolve across the lifespan and is influenced by a variety of cultural and environmental factors (Blieszner & Adams, 1992), future research may benefit from exploring friendships utilising a life course approach which acknowledges the influences of age and external factors on friendship. Further, few studies explored the lived experiences of friendships among autistic individuals who did not communicate verbally or had higher support needs. Exploration of the first-hand accounts from those autistic individuals who are under-represented in the existing literature through using alternative participatory methods is critical to capture the voices and experiences of all individuals on the autism spectrum.

Conclusion

This review contributes unique insights into the subjective experiences of friendship of autistic individuals. It indicates that autistic individuals have the strong desire to make friends, with most autistic individuals valuing the qualities of shared interests, reciprocity, trust and respect in friendship and having a small number of friends. Despite the motivations to have friends, autistic individuals could experience great challenges in making and keeping friends. To cope with the challenges and fit into the non-autistic world, many individuals engage in adaptive morphing or persistently learn and practice social skills in their everyday lives. These constant efforts often led to feelings of increased anxiety and emotional fatigue, further contributing to mental health problems. Findings of this review highlight the critical need to provide supports to help autistic individuals develop and maintain authentic friendships in which they are comfortable to be their true selves. Creating inclusive environments that foster an increased awareness of autism, respecting and sharing interests and reducing anxiety may help to improve friendship outcomes for autistic individuals.

Declarations

Conflict of Interest The authors declare that there is no conflict of interest. All researchers take full responsibility for the integrity of the work.

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Author Note Melissa H Black—Curtin School of Allied Health, Curtin University, Perth, Western Australia, Australia, and EnAble Institute, Curtin University, Perth, Western Australia, Australia; Rebecca Kuzminski—Curtin School of Allied Health, Curtin University, Perth, Western Australia, Australia; Jing Wang—Curtin School of Allied Health, Curtin University, Perth, Western Australia, Australia; Jessica Ang—Curtin School of Allied Health, Curtin University, Perth, Western Australia, Australia; Cheryl Lee—Curtin School of Allied Health, Curtin University, Perth, Western Australia, Australia; Siti Hafidzuddin—Curtin School of Allied Health, Curtin University, Perth, Western Australia, Australia; Sarah McGarry—Curtin School of Allied Health, Curtin University, Perth, Western Australia, Australia, and EnAble Institute, Curtin University, Perth, Western Australia, Australia.