

Friends and lovers: the relationships of autistic and neurotypical women

Felicity Sedgewick*¹, Laura Crane², Vivian Hill³ & Elizabeth Pellicano⁴

¹ King's College London, Institute of Psychiatry, Psychology and Neuroscience, Department of Psychological Medicine, UK

² UCL Institute of Education, Centre for Research in Autism and Education (CRAE), UK

³ UCL Institute of Education, Psychology and Human Development, UK

⁴ Macquarie University, Department of Educational Studies, Australia

*Corresponding author: Dr Felicity Sedgewick: felicity.sedgewick@kcl.ac.uk; Eating Disorders Unit, 103 Denmark Hill, Department of Psychological Medicine, Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, SE5 8AF; +44(0)2078485977

Dr Laura Crane: l.crane@ucl.ac.uk; +44(0)2073315141

Dr Vivian Hill: v.hill@ucl.ac.uk; +44(0)2076126296

Professor Elizabeth Pellicano: liz.pellicano@mq.edu.au; +61298509181

Running Title: Autistic and neurotypical women's relationships

Keywords: autism, women, relationships, adult, conflict, vulnerability

Author Confirmation Statement

Dr Felicity Sedgewick designed the study, recruited participants, and collected the data presented in this manuscript as part of her Doctoral work, conducted the analyses, and led in preparing the manuscript.

Dr Laura Crane critically reviewed both the original Doctoral thesis and this manuscript, contributing expertise and suggestions for the analyses, interpretation and write-up of the data.

Dr Vivian Hill was a supervisor on the original Doctoral project, contributing to the design of the study, helping with recruitment, and helping with write-up of the research.

Professor Elizabeth Pellicano was the senior supervisor on the original Doctoral project, co-designing the study, facilitating recruitment, double-coding interviews, and significantly contributing to write-up of the research.

All co-authors have reviewed and approved of the manuscript prior to submission.

This manuscript has been submitted solely to Autism in Adulthood and is not published, in press, or submitted elsewhere.

Author Disclosure Statement

No competing financial interests exist.

Abstract

Background: Little is known about the friendships and relationships of autistic adults, despite decades of research evidence showing the benefits of close relationships for neurotypical adults. Even less is known about the relationships of autistic women, or how their relationships compare to those of neurotypical women. This mixed-methods study therefore examined differences in the social relationships of autistic women in relation to their neurotypical counterparts.

Methods: Thirty-eight women (19 autistic women, 19 neurotypical women), aged between 20 and 40 years, completed the Unidimensional Relationship Closeness Scale (URCS), The Awareness of Social Inference Test (TASIT), and a semi-structured interview about their current and former friendships and romantic relationships.

Results: In many ways, the social relationships and experiences of autistic women were much like those of neurotypical women. Autistic women, however, had greater difficulty with social inference skills, and reported experiencing more negative social situations. This was particularly the case in terms of social and sexual vulnerability, a feature that the autistic women themselves linked to their difficulties with social inference. Despite these challenges, autistic women were happier and more self-assured in their adult relationships than they remembered being in adolescence.

Conclusions: These findings highlight an urgent need for specific and tailored personal safety training and support for autistic women – and, by extension, autistic girls – to ensure that they can enjoy a safe transition to adulthood and positive adult relationships.

Decades of research have shown the importance of friendships for emotional, physical, and psychological well-being^{1,2,3}. Adults who have stable, positive and long-lasting friendships have been reported to be happier, healthier, and even live longer. Further, romantic relationships have also been shown to play a particularly central role throughout adulthood (e.g., fostering a sense of well-being, providing practical and emotional support)⁴. Whilst we know that both friendships and romantic relationships change over time and become increasingly complex⁵, most of our knowledge in these areas stems from research on neurotypical adults. As such, very little is known about the development and experiences of friendships and romantic relationships for autistic adults, and especially for autistic women.

It is well established that autistic people – from childhood – perceive friendships differently. They tend to have fewer friends, friendships that tend to be less reciprocal, and friendships that are largely based on activities rather than emotional sharing⁶. This has been documented in both academic literature and the writings of autistic people^{7,8}. Yet, the majority of these studies have been conducted on autistic boys, who may experience friendship differently to autistic girls. Autistic girls tend to have closer friendships than autistic boys^{9,10}, and they often engage in different activities: autistic girls may spend time chatting with friends whereas autistic boys tend to play video games¹¹, and autistic girls tend to engage in joint parallel play rather than the solitary play typical of autistic boys¹².

Although there are differences in the friendships of autistic boys and girls, the friendships of autistic and neurotypical girls appear to be similar in many ways. Sedgewick, Hill and Pellicano¹³ examined the friendships of a sample of cognitively-able adolescents, with and without an autism diagnosis. Their results showed that while the best-friendships of autistic and neurotypical girls were similar on quantitative measures of quality (being similarly close, helpful, and secure^{9,10}), there were notable qualitative group differences. Specifically, autistic girls lacked wider social networks and the friendships they reported were much more intense,

with individual best friends often becoming the sole focus of their social lives. Autistic girls also found it much more difficult to understand and manage conflict in their relationships and with their peers generally, and were exposed to more relational bullying (i.e., behaviours such as gossip and being excluded, which are far more predominant in adolescent girls' relationships¹⁴) than any other group. Amongst neurotypical girls and women, relational conflict is normally managed through returning these subtle social aggressions^{15,16}. Sedgewick, Hill and Pellicano, however, found that autistic girls do not tend to do this. Instead, they assume they are entirely to blame for the problem (and do whatever they can to resolve it) or assume that the friendship cannot be rescued (and so withdraw from the relationship)¹⁰.

Very little is known about whether the friendship qualities of autistic adolescent girls extend into adulthood. In one of the few studies to examine these girls' subjective experience of relationships, Baldwin and Costley¹⁷ found that 80% of their 82 female participants were 'very' or 'fairly' satisfied with their social life, despite only 12% living with a partner. These results suggest that romantic relationships – and relationships more broadly – are important to autistic women and can be successful (for example, resulting in traditional outcomes such as living together, just as they would for neurotypical women). This work also highlights that romantic relationships do not have to be seen as the ultimate goal in social lives, as many women were happy without these and instead focussed on friendships.

Autistic women may struggle with the same social aspects of the world around them as adolescent autistic girls do, potentially because of difficulties with social awareness and imagination, which are considered to be core features of autism¹⁸. In a small-scale narrative study by Kanfischer et al¹⁹, all seven autistic women they interviewed discussed issues with social relationships. This was particularly clear in their discussions of trying to meet expectations from people around them, such as not being "feminine" (p. 665) or feeling that even when they tried to make friends, the conversation "just goes dead" (p. 666). Yet almost

half of the participants in this had co-occurring intellectual disabilities, rendering it unclear whether their experiences are similar to cognitively able autistic women. Despite this, there is evidence from other studies that struggling with social relationships, especially social expectations, is commonly seen in many cognitively-able autistic women as well^{14,20}.

There is also growing suggestion that autistic people, especially women, engage in ‘camouflaging’ in order to try to meet social expectations. Camouflaging is a “mismatch between the external presentation and internal state” of autistic behaviours^{21,22}, although evidence of the form this takes, and in what ways this camouflaging is distinct from that of neurotypical people (‘trying to fit in’) is still being determined. While there might be immediate benefits of camouflaging for autistic and neurotypical girls, such as the emotional and social support gained (and offered) to close friends¹³, there are also notable costs. Autistic women report that camouflaging is “exhausting”²² and can have a negative impact on their mental health²³. Greater ‘successes’ might be seen in those who are diagnosed later (despite the undoubted challenges that they have faced), as they have often had to develop and display a certain level of resilience to make it to adulthood prior to receiving their diagnosis. This possibility, however, has not been explored in depth.

The Current Study

In light of the limited existing research on adult autistic women’s social experiences, the current study sought to examine the nature of the friendships, relationships, and conflict within the relationships of autistic and neurotypical adult women. To address these aims, participants initially completed two measures tapping relationship closeness and social awareness. The first measure, the Unidimensional Relationship Closeness Scale²⁶, was used to assess how close an individual is to someone they identify as significant in their life and has well-validated population norms amongst neurotypical people. The second measure, The Awareness of Social Inference Test²⁷, was used to measure participants’ social inference skills.

Such skills critically contribute to accurate interpretations of social situations and, therefore, to the ability to develop appropriate responses and to assess potentially risky social situations.

Given emerging evidence on the distinctive qualities of adolescent autistic girls' friendships – specifically dealing with relational conflict in these relationships^{9,10,13} – this study also sought to probe more deeply whether these friendship experiences also existed in adulthood. Therefore, an in-depth semi-structured interview was also used, to examine participants' perceptions of their past and current relationships and how they felt these have changed over time.

Hypotheses. We had three key hypotheses. First, we hypothesised that there would be qualitative commonalities between the friendships and social relationships of autistic and neurotypical women (just as autistic and neurotypical adolescent girls are faced with similar social expectations and pressures¹³, so are autistic and neurotypical adult women⁷). Second, we hypothesised that the qualitative differences identified by Sedgewick et al.¹³, specifically regarding difficulties recognising others' intentions and managing conflict in their relationships, would extend into adulthood. Indeed, the limited research on the experiences of late-diagnosed autistic women has suggested that these difficulties in understanding and managing relationships may well persist with age, with widespread reports of sexual abuse highlighting the vulnerability of this group^{7,20}. Finally, we hypothesised that there would be subtle differences between the social relationships and skills of autistic and neurotypical women, in line with the quantitative results presented in Sedgewick et al¹³.

Method

Participants

As can be seen in Table 1, 19 autistic women and 19 neurotypical women (recruited through social media and word-of-mouth, from across the United Kingdom) took part in this

study. The study recruited individuals through an advert for “autistic women”, and we included anyone who responded to that language, whether they currently identified as female, non-binary, genderfluid or agender. As many autistic people identify outside the gender binary^{24,25}, we did not exclude any individuals who identified as such. Rather, we included those who were generally perceived by society as female, having been identified as female at birth or currently being female-presenting, as these societal expectations play a large role in shaping individuals’ relationships and social experiences. All participants indicated that they were content to be referred to as female for the purposes of the study on the demographic questionnaire and, therefore, the terms “woman” or “women” are used throughout this paper.

Participants were between 20 and 40 years of age and largely from a White ethnic background. All participants had a Full-Scale IQ greater than 70, as measured by the Wechsler Abbreviated Scale of Intelligence – 2nd Edition (WASI-2²⁸), and were therefore considered cognitively able. There were no significant differences between the groups on chronological age, $t(36)=.64$, $p=.53$, $d=.21$, or Full-Scale IQ, $t(36)=.43$, $p=.67$, $d=.14$.

All autistic participants had received an independent clinical diagnosis of an autism spectrum condition according to criteria in the 5th edition of the Diagnostic and Statistical Manual¹⁸ or 10th edition of the International Classification of Diseases²⁹. All scored above the threshold score of 68 (see Table 1) on the Social Responsiveness Scale – 2nd Edition (SRS-2³⁰) – and their scores on the SRS-2 were significantly higher than those of neurotypical women, $t(36)=14.92$, $p<.01$, $d=4.84$ – to the extent that the two distributions did not overlap.

[Insert Table 1 about here]

When examining broader life outcomes, the numbers of autistic and neurotypical women were similar regarding education and employment, sexuality, relationship status, and

motherhood (see Table 2). Of the four autistic mothers in the sample, three had children who had also been diagnosed as autistic (for one woman, both her children had autism diagnoses). Amongst the neurotypical women, 4 were mothers (21%) and none of their children (in total, 7) had a diagnosis of autism.

[Insert Table 2 about here]

Ethical approval for this study was given by the UCL Institute of Education Ethical Committee. All participants gave their written consent and had the opportunity to ask questions of the researcher prior to taking part.

Measures

Data collection comprised concurrent mixed methods, utilising questionnaires, video measures, and semi-structured interviews (all within a single session).

Relationship Closeness. Participants completed the *Unidimensional Relationship Closeness Scale (URCS²⁶)*, a 12-item self-report questionnaire rating features of their closest relationship on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Scores were calculated by averaging across all 12 items. For this study, participants' most significant relationship was specified as a romantic partner if they had one, and if not, their best friend. The URCS measures how close the relationship is, with a population mean score of 6.00 for romantic couples and 5.02 for same-sex friends²⁴. The URCS has been found to have high reliability (Cronbach's $\alpha = .96$) in neurotypical samples²⁴. Cronbach's α in this sample was .86 for both groups.

Social Awareness. Participants completed the *TASIT Social Vignettes – Part 3²⁷*, a video measure comprising 16 social vignettes, testing the ability to distinguish between sincerity, sarcasm, and lying, along with first- and second-order Theory of Mind understanding (i.e. the ability to recognise what other people are thinking and feeling). Participants were asked

four questions about each video, divided into four categories related to what the target character is: (1) 'doing', (2) 'saying', (3) 'thinking', and (4) 'feeling'. Participants were asked to respond Yes/No/Don't Know to each question. Each correct answer was awarded one point, yielding a maximum of 4 points for each vignette, and a maximum total score of 64 (with higher scores reflecting greater social inference skills). The TASIT has been used successfully with autistic adults as a measure of Theory of Mind³¹. It has been shown to be a reliable measure of social awareness (Cronbach's $\alpha = .62 - .78$). Cronbach's α in this sample was .61, suggestive of moderate reliability.

Friends and Relationships interview. Interview questions were initially developed following the 'Friends and Marriage' section of the ADOS-2³² and the interviews used in Sedgewick, Hill, and Pellicano¹³ (see Table 2 for interview schedule). A critical incident approach³³ was also used, which comprised two questions on participants' cognitions around positive and negative events, particularly with regard to conflict events. The length of interviews was similar across groups, $t(32)=.56, p=.58$ (autistic: $M=34.48\text{min}, SD=12.18, \text{range}=19.15\text{--}67.20$; neurotypical: $M=32.40, SD=9.20, \text{range}=17.95\text{--}55.33$).

General Procedure

Each participant was seen individually for between 1.5–2 hours. The order of task completion was demographic questionnaire, then TASIT, URCS, and the interview.

Data Analysis

Interviews were transcribed verbatim and subjected to thematic analysis following Braun and Clarke³⁴. Thematic analysis was chosen as similarities and differences in the broad themes of social experiences was the topic of interest, rather than specific semantic analysis. The phases of thematic analysis include: (1) data familiarisation, (2) generation of initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) report

production. The first author carried out initial thematic analysis, with VH and LP analysing 20% of the interviews. We used an inductive approach, starting with research questions examining whether there were differences between autistic and neurotypical women regarding their relationships and conflict experiences. Data were analysed at the semantic level, with the generated themes being collapsed based on overarching similarities, in a manner similar to axial coding. All authors approached analysis from the perspective of psychology researchers who do not identify as autistic, and so examined the data from the perspective of outside interpreters.

Data generated from the questionnaire measures outlined above were analysed in SPSS³⁵. A post hoc power calculation using G*Power³⁶. The recommended effect sizes were: small: $d=.20$., medium $d=.50$, large $d=.80$ ³⁷. Post hoc analyses showed that the statistical power for this study was .15 for detecting a small effect, .45 for detecting a medium effect and .78 for detecting a large effect. Thus, there was sufficient power for detecting large effect sizes. A $p=.01$ criteria was used to adjust for multiple comparisons.

Results

Between-groups analysis

Relationships. On the Unidimensional Relationship Closeness Scale (URCS), autistic women ($M=5.33$, $SD=1.21$) rated their partner/best friend relationships as significantly less close than neurotypical women ($M=6.13$, $SD=0.70$), $t(36)=2.47$, $p=.02$, $d=.79$) (see Table 3). Although the number of autistic women (58%) rating their best friend (rather than their partner) on the URCS was higher than for neurotypical women (32%), this difference did not reach statistical significance, $\chi(1)=2.66$, $p=.10$. Taking into consideration the different population norms²⁶ for the two relationship types (friend, partner), there was no significant difference between the numbers of autistic and neurotypical women who rated their relationship as close

as expected (i.e., whether they scored it as above the population norm: romantic relationships=6.00, friendships=5.02), with 68% of autistic women and 74% of neurotypical women scoring above the norm, $\chi(1)=.13, p=.72$.

[Insert Table 3 about here]

Social Awareness. Overall and subscale scores by group for the TASIT are presented in Table 3. An independent samples t-test revealed significant group differences on TASIT total scores, with autistic women scoring significantly lower than neurotypical women, $t(36)=8.01, p<.01, d=2.60$. This pattern was also true for the Lie, $t(36)=4.31, p<.01, d=1.39$, and Sarcasm, $t(36)=9.10, p<.01, d=1.32$, subscales of the TASIT. Paired-sample t-tests revealed that autistic women were significantly better at accurately identifying Lies than they were Sarcasm, $t(18)=6.13, p<.001, d=1.34$. In contrast, neurotypical women were better at identifying Sarcasm than Lies, $t(18)=-2.90, p=.009, d=.77$.

On three of the question subscales ('what is the target character Doing?, Saying?, and Feeling?'), neurotypical women were consistently and significantly more accurate than autistic women at identifying the intentions or emotions of the target characters (all $ps <.01$). There was no significant group difference, however, on the Think subscale ('what is the target character Thinking?'), $t(36)=1.57, p=.13, d=.54$.

Friends and Relationships Interviews

All women reported having past and present friendships and intimate relationships, with several noting their appreciation for being able to focus on friendships, rather than solely romantic relationships, in the current study. There was broad agreement between autistic and neurotypical women in terms of the themes identified. Within these relationship categories, we identified themes (italicised) around how women approached, defined and handled relationships, along with several sub-themes unique to autistic women (see Figure 1).

Hereafter ‘AW’ will be used to signify quotes from autistic women, and ‘NW’ from neurotypical women.

[Insert Figure 1 about here]

Friendships. Both groups of women reported that *‘friends provide emotional support’*: “I can tell them anything” (AW). This emotional support allowed them to manage the challenges of their day-to-day lives. Reciprocity was felt to be key: “it’s being there for each other” (NW). This mutuality was important in defining relationships as closer or better than acquaintances. Some autistic women described having friends where support was more one-way, often to their benefit – “she’ll take me into town”.

Women also felt *“true friends are people who let you be yourself”*. The notion that true friends would be understanding and non-judgemental was important to all participants (“the friends I value most are the ones that I feel truly myself with”, NW). This was particularly the case when they shared similar interests, such as “we go to sword fighting classes” (AW) or “we share similar interests, have similar outlooks” (NW). These shared experiences brought women closer, reinforcing the emotional bond which was key to friendship.

Both groups described having a few close friends. Beyond this, however, neurotypical women said that they also had a wider group of friends and acquaintances, which autistic women often did not, instead having *fewer, more intense friendships*, including their partner. These friendships could take up a great deal of time and energy (“I’ll try and have a lot of contact”, AW). For some participants, this intensity had resulted in their friends disengaging from them, which the autistic women felt was because their friends could not cope with their desire for persistent and sustained interactions (“I want to talk to them all the time”, AW).

Another theme unique to the interviews with autistic women was that of *social ambivalence*. While many autistic women said that their friends were “really important”, some

women were decidedly ambivalent. For example, one said “I don’t really want friends...they always go away”. Several women said that they felt they had previously been taken advantage of and, as a result, were now “more wary” and less open to friendships. Nevertheless, most autistic women said that they had positive relationships at work and with friends and family, and that these people were a valued presence in their lives: “I still know people from high school, that’s how important it can be”.

While all participants had friends, they could also all describe conflict within these friendships when asked. This *relational conflict with people around you*, included gossip, exclusion, and snide comments, such as “I heard what she had been saying behind my back” (NW). This type of conflict was present in all areas of women’s lives, from the office – “there’s someone at work who tries to undermine me” (NW) – to the school gate – “[other parents] deliberately leave you out of plans if you say the wrong thing once” (AW). All women were frequently facing difficult social situations, which required an understanding of complex motivations and careful management. Autistic women reported that they found this more difficult to manage, describing more instances of relationships breaking down and being more upset by these events than their neurotypical counterparts.

These incidents, and the way women approached *conflict management*, appeared to have a significant impact, as several participants talked about ending friendships: “I’m keeping her more at arms’ length” (NW); “I don’t need your brand of neurotypical drama” (AW). Most women first tried to ‘fix’ their friendships by talking about the issue. If this did not work however, they were relatively comfortable with accepting the end of a friendship and focussing on their existing, more stable friendships. Autistic women were less likely to make repeated attempts to ‘fix’ a friendship through talking over the problem and were more matter-of-fact about walking away from a conflict without resolving it.

The idea that *relationships mature with age* was also common to both groups, along with a significant increase in *relationship satisfaction* among adult women from adolescence. Both neurotypical and autistic women talked about the fact that they had experienced peer difficulties in high school. These high school experiences had left them feeling that they were “actually bullied a lot by my ‘friends’” (AW). Several women had not enjoyed high school, and actively sought out different friendships in adulthood. This increased self-assurance in managing relationships was seen by all participants as a by-product of growing up: “I think it’s a maturity thing” (NW). Participants described now being focussed on relationships which they felt were more stable, caring, and reciprocal: “friends get better with age” (AW).

Autistic women’s *friendship definition developed with age*, reflecting greater self-awareness and understanding of other people – “now I actually have an understanding of what I’d like out of a friendship”. These self-reported changes went along with greater friendship satisfaction and stability, as autistic women felt that they understood more of “what other people want in a friend” and could negotiate those expectations better. This change over time was not explicitly discussed by neurotypical women, although all women described focussing on relationships that were more caring and reciprocal now that they were adults.

Romantic Relationships. Another major change during adulthood was the centrality of romantic relationships in participants’ lives. Many women described their romantic partner as being their most important relationship: “I just want to be with my husband” (NW). For autistic women, their partners were their main social relationship: “I wouldn’t really say that I have friends apart from my partner” (AW). They described their romantic relationships as being incredibly intense – “my husband essentially became my special interest” (AW) – and this was something that autistic women acknowledged could be difficult for their partners to manage.

For many autistic women, *romantic partners act as social gatekeepers*, providing “the ready meal of friendship” (AW), because they provided a ‘short-cut’ into a social life they found difficult to build for themselves (e.g., when their partners introduce them to a group of friends, rather than them having to build new friendships alone). This social merging was not mentioned by neurotypical women, who instead described valuing romantic relationships for reasons such as “I feel safe, supported, happy and loved” (NW). This is perhaps to be expected as neurotypical women had fewer issues making their own friendships.

The *quality and length of the romantic relationships* of autistic and neurotypical women were very similar. Several women in both groups described being happily married or in positive long-term relationships of several years. Equally, there were women in both groups who were single and dating, and women in both groups who were not pursuing romantic relationships. While there were some women who were unhappy in their relationships this was not necessarily linked to diagnostic status, but instead to features of those individual relationships.

Differences did arise regarding the *approach to romantic relationships* of autistic women. For example, one participant continued to live with an ex-partner who had become her carer, as this person served as her main social relationship (despite the end of their romantic relationship) and she had no other close friends who could support her. More generally, autistic women were likely to report that they had only had one or two serious relationships in their lifetime. They reasoned that this might be because they had always been willing to accept less negative behaviour from partners; in contrast, neurotypical women reported that they “put up with a lot less now” (NW). Autistic women were also likely to note that once they found a partner they were happy with, they were very committed from the very start of the relationship, rather than “doing the casual dating thing” (AW). In contrast, other autistic women described how they were likely to stay in a bad relationship because that was easier than finding a new one (“I’ve definitely kept an unsuitable person around just because I was lonely”, AW), or

because that person was their access to most of their other social relationships (“all our friends are really his friends” AW).

Autistic women also reported slightly higher levels of *non-heteronormativity* in their sexualities (i.e. being lesbian, bisexual, or asexual) and gender (i.e. being genderfluid, non-binary, or agender) than neurotypical women. While this had some impact on their relationships growing up (“I was in a rural area, so I didn’t date as a teenager”, AW) by adulthood, it had in some ways become irrelevant. Generally, lesbian, bisexual, transgender, and queer (LGBTQ) autistic women described the same relationship experiences and challenges as all other women in the study, such as their partner helping them to make friends (“our friends are all through her”, AW).

Challenges of relationships. The final theme common to all women was that of vulnerability. Most autistic women, and a notable minority of neurotypical women, reported that they had at some point been victims of crime (for example, being victims of “sexual assault”, “rape”, “domestic violence”, “financial fraud”). This had often happened some years in the past, usually in *early adulthood or at university*.

Autistic women’s degree of vulnerability was particularly severe. All participants were asked whether they had had difficult experiences in romantic or sexual relationships. Of the 19 autistic participants, 15 (79%) spoke about some form of domestic abuse, rape, or sexual assault – with some participants having had multiple traumatic experiences. Amongst the neurotypical women, 5 (26%) discussed similar experiences. Autistic women described how they generally assumed “the best of people”. Some participants therefore repeatedly ended up in situations where they were taken advantage of, because “there’s that whole ulterior motive thing that I end up missing”. Some women also struggled to know how to leave situations they didn’t like: “I just didn’t really know how to avoid that situation once it had started”. They also struggled

to generalise from one incident to the next situation, with one participant reporting, “I’m surprised every time”.

Indeed, autistic women repeatedly highlighted their *difficulties reading others*: “the whole time you’re trying to figure out what is going on”. Autistic women often reported being confused by outcomes they had not predicted and could not understand: “I still don’t think I’ve absorbed it”. This was especially true when asked about relational conflict. The subtle social aggressions usually employed by and against women were a mystery to some participants: “Jealousy makes them bully me? They think not talking to me will make me be nicer? What is all this psychological mumbo jumbo?”.

These difficulties understanding others, and the knowledge that they are often “getting it wrong”, contributed to many autistic women experiencing *social anxiety*. One participant described how socialising left her with “constant heart thumping anxiety”, which often led her (and other women) to limit how much time they spent with friends. Several women also said that they “find it difficult to know if they [friends] feel the same way I do about them”, and this could lead them to withdraw from a new friendship or refuse to make new ones: “I just find it so overwhelming that I don’t even try”. Some women responded to this anxiety by “only seeing one or two people at a time”, which allowed them to manage the situation. Others avoided large gatherings, which could itself damage their relationships: “we aren’t so close because I’ve missed big events like graduations and weddings”.

Discussion

Difficulties with developing and maintaining relationships are central to the diagnostic criteria for autism¹⁸, but remarkably few studies have examined the friendships and relationships of autistic adults. This study, for the first time, used concurrent mixed methods to directly examine differences in autistic and neurotypical women’s relationships. As expected,

the interviews showed that autistic and neurotypical women faced similar social situations and challenges, but that autistic women were often much more vulnerable to exploitation due to difficulties with interpreting others' intentions. Autistic women found it more difficult to manage social conflicts and challenges, although they reported being more confident doing so in adulthood than in adolescence. This pattern of increasing social confidence and satisfaction was common for all women but was particularly important for autistic women who felt that, despite ongoing challenges, they have learned to navigate relationships "on their terms".

A particularly novel aspect of this research was the use of the URCS²⁶ to examine differences in relationship quality amongst autistic adults. As expected, autistic women rated themselves as less close to their nominated individual than neurotypical women on the URCS. At first glance, this finding seems to contrast with the interview data, where many autistic women said that their romantic partner or best friend was just as important as they were to neurotypical women, just as autistic adolescent girls report¹³. Yet, Total Closeness scores on the URCS showed that autistic women had friendships and romantic relationships just as close as would be expected for a neurotypical population. Autistic women were highly satisfied with these relationships, in line with other work¹⁷, which they also emphasised in their interviews, and they felt that these relationships improved their quality of life. This finding is supported by other research examining the association between friendships and well-being in autistic adults, which links lower levels of loneliness to greater well-being³⁸. These patterns also echo findings from adolescent autistic girls, who have friendships which are similarly close and strong to those of neurotypical girls, and who feel that these are of central importance to their lives¹⁰.

Autistic women reported similar problems in their relationships to neurotypical women (e.g., relational aggression), but autistic women described having greater difficulty managing these situations; again, just like autistic girls¹³. In line with this finding, that they found it harder

to identify sarcasm (a common form of relational aggression) on the TASIT^{14,27}. As in previous qualitative research¹⁹, where autistic women described struggling to make and maintain friendships (and even conversations with others), difficulties with peer relationships, and especially with managing conflict, were linked to wider social issues by autistic women.

One clear potential consequence of finding it difficult to manage challenging or confrontational situations is found in the distressingly high rates of sexual assault amongst the autistic women in this sample. While our sample of neurotypical women reported experiencing sexual assault and domestic violence at similar rates (26.3%) to the most recent official statistics on the topic (20.2%³⁹), the proportion of autistic women experiencing such events (79%) was alarming. That similar findings have also been reported previously (women with disabilities have been found to be four times more likely to be victims of sexual assault and domestic violence than women without disabilities^{17,19,40} renders this an especially important – and urgent – issue to address both in research and practice.

Autistic women sometimes described having suffered multiple assaults, saying that they “just couldn’t see it coming” even if it was a repeat of a previous situation. This is consistent with much existing work^{41–43} and also our finding that autistic women had more difficulties with interpreting others’ motivations and intentions on the TASIT. Difficulties with generalising experiences are a common feature of autism and potentially leave autistic women incredibly vulnerable. This relates to theoretical accounts suggesting that autistic people rely less on ‘priors’ (or prior experiences), to inform their responses to current situations. It is also consistent with empirical research showing that autistic adults do not appear to utilise past experiences to guide future behaviours and/or solve social problems^{44,45}. For women who may have few friends, explicit teaching may be crucial in place of the discussions that neurotypical women often have, as autistic women may not have anyone with whom to ‘check-in’ about a relationship⁷. This teaching would be best if co-designed with autistic women who have

themselves already experienced the transition from adolescent to adult relationships. These women may have the best insight into the challenges they faced and what would have most helped them to be happier and safer (rather than the trial-and-error experience many of our participants reported in the current study).

It is worth highlighting, however, that difficulties with social awareness are not the only theoretical explanation for autistic women's higher levels of risk in this regard. For example, research has shown that neurotypical participants judge autistic people as more socially awkward^{46,47} in short videos. This rapid impression forming may mark these women as easier targets for predatory men, and mean that others are less likely to trust autistic women's accounts of social situations (as they are viewed as less skilled interpreters). This attitude may result in autistic women finding it harder to access support, including guidance on how to identify similar behaviours in the future (as discussed by autistic females^{7,8}). It would be valuable for future work to focus specifically on the risk of vulnerability autistic women face in order to better understand and prevent these traumatic experiences.

While recent work on autistic women's social experiences echoes the themes highlighted in this study, there are also some discrepancies. Kanfiszler et al.¹⁹ reported that the autistic women in their study felt 'different' to their peers growing up, in a similar way to the descriptions women gave in this study, but they also described discomfort with their female gender identity. This latter theme was not apparent in the interviews with autistic women here: equal numbers of autistic and neurotypical women were mothers, some autistic women talked about stereotypically female special interests, and none expressed discomfort with their physiology. Furthermore, although the overarching concept of difficulty with social relationships and vulnerability to being exploited were the same in this study and that of Kanfiszler et al., there were considerable differences on the topic of social relationships. For example, Kanfiszler et al.'s participants talked about how "people didn't want to know me" (p.

666¹⁵). Here, autistic women reported struggling to make and maintain relationships, but this was not because other people rejected them.

Further to some of the above differences between this study and previous work, we did not exclude any participants who identified as non-binary, genderfluid, or agender, as others may have done. Other work on the experiences of autistic women has not reported on the gender identities of their participants, and so it is possible that this is a notable difference in the participant samples. Living outside the gender binary has the potential to have an impact on an individuals' social relationships, particularly their romantic relationships but, in our sample, such differences were not apparent. We therefore retained those participants who identified as non-binary or genderfluid in order to ensure that that our study captured the nature of the population with whom we are working ^{24,25}. There is a chance, however, that non-binary individuals did not feel comfortable participating in a study where the recruitment materials framed the research as focussing on "autistic women", and future work is needed focussing on the social relationships of this group of autistic people, who may well have unique experiences to share.

As a final point, it is worth noting that the women in this study had very similar life outcomes regardless of their diagnostic status. We did not carry out purposive sampling aside from the stipulations that participants were not older than 40 and had a reasonable level of spoken English and English reading ability. The fact that autistic and neurotypical women appeared similar on various life outcomes was perhaps not expected in light of previous work on adult outcomes in autism^{48,49}. This may be because many of the autistic adults followed up in this earlier work were diagnosed in the 1970s and 1980s, prior to the broadening of the diagnostic criteria for autism. This means that those participants may be more likely to have co-occurring intellectual disabilities that impacted on their life outcomes, as opposed to the late-diagnosed women without intellectual disabilities who took part in this study.

In summary, this study represents a thorough and novel exploration of the nature of autistic women's' relationships in comparison to their neurotypical counterparts, using both qualitative and quantitative methods. There are, however, some notable limitations. First, the reports of adolescent friendships from both groups were all retrospective, and so must be treated with caution given potential errors. Future longitudinal work would be an effective way to address these questions, tracking friendship experiences of autistic individuals across time. Second, this study focused on women only, which meant that key comparisons could not be made to the experiences of autistic and neurotypical men. This would have been valuable in examining gender differences in psychosocial and relationship outcomes alongside differences based on diagnostic status. Third, it should be noted that some autistic people's difficulties distinguishing between sincerity, sarcasm, and lying on the TASIT may be related at least in part to them being less likely to judge the other person as being disingenuous. It is also possible that autistic women learn through experience how to understand and interpret sarcasm, and so different groups of autistic women may score differently on the measure. Whilst the sample size for this study was not large enough to explore these potential differences, this could be an interesting area for future research.

Despite these limitations, this study demonstrated that autistic women have relationships that they describe as being like those of neurotypical women. That said, we identified key group differences, with autistic women having fewer and more intense relationships, more difficulties within their relationships, and being distressingly vulnerable. All women, both autistic and neurotypical, described becoming more confident in and satisfied with their relationships as they matured. While many autistic women experienced ongoing social difficulties, they had gained confidence in handling these difficulties, even if the ongoing nature of some of their difficulties (e.g. in understanding others' intentions) suggest that they were not always adept at handling such situations. This change over time reportedly came

through learning from experience and exposure to social expectations, combined with learning what was best and most appropriate for them as individuals; a level of self-knowledge that was often linked to gaining an autism diagnosis, according to the participants in this study. These changes did not necessarily mean that women were in any way 'less autistic', but that they develop strategies for more successfully interacting with the world around them. Autistic women face social situations and expectations like those of neurotypical women, but that they respond to these in different ways. Examining how adult autistic women perceive and experience their relationships may help us to better understand gender differences in autism.

References

1. Antonucci TC, Akiyama H. Social Networks in Adult Life and a Preliminary Examination of the Convoy Model. *J Gerontol.* 1987;42(5):519-527. doi:10.1093/geronj/42.5.519
2. Bukowski WM, Sippola LK. Friendship and development: Putting the most human relationship in its place. *New Dir Child Adolesc Dev.* 2005;2005(109):91-98. doi:10.1002/cd.141
3. Hawkley LC, Cacioppo JT. Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms. *Ann Behav Med.* 2010;40(2):218-227. doi:10.1007/s12160-010-9210-8
4. Barry CM, Madsen SD, Nelson LJ, Carroll JS, Badger S. Friendship and Romantic Relationship Qualities in Emerging Adulthood: Differential Associations with Identity Development and Achieved Adulthood Criteria. *J Adult Dev.* 2009;16(4):209-222. doi:10.1007/s10804-009-9067-x
5. Zarrett N, Eccles J. The passage to adulthood: Challenges of late adolescence. *New Dir Youth Dev.* 2006;2006(111):13-28. doi:10.1002/yd.179
6. Petrina N, Carter M, Stephenson J. The nature of friendship in children with autism spectrum disorders: A systematic review. *Res Autism Spectr Disord.* 2014;8(2):111-126. doi:10.1016/J.RASD.2013.10.016
7. Steward R. *Independent Woman's Handbook for Super Safe Living on the Autistic Spectrum.* Jessica Kingsley Publishers; 2013. <https://books.google.co.uk/books?hl=en&lr=&id=TVv4AAAAQBAJ&oi=fnd&pg=PP2&dq=steward+independent+womans+handbook&ots=rokKKas71a&sig=aUFDniPDa>

JroQTamsYtagNyeMNY#v=onepage&q=steward independent womans
handbook&f=false. Accessed October 1, 2018.

8. O'Toole JC. *Sisterhood of the Spectrum : An Asperger Chick's Guide to Life*.
9. Head AM, McGillivray JA, Stokes MA. Gender differences in emotionality and sociability in children with autism spectrum disorders. *Mol Autism*. 2014;5(1):19. doi:10.1186/2040-2392-5-19
10. Sedgewick F, Hill V, Yates R, Pickering L, Pellicano E. Gender Differences in the Social Motivation and Friendship Experiences of Autistic and Non-autistic Adolescents. *J Autism Dev Disord*. 2016;46(4):1297-1306. doi:10.1007/s10803-015-2669-1
11. Kuo MH, Orsmond GI, Cohn ES, Coster WJ. Friendship characteristics and activity patterns of adolescents with an autism spectrum disorder. *Autism*. 2013;17(4):481-500. doi:10.1177/1362361311416380
12. Dean M, Harwood R, Kasari C. The art of camouflage: Gender differences in the social behaviors of girls and boys with autism spectrum disorder. *Autism*. 2017;21(6):678-689. doi:10.1177/1362361316671845
13. Sedgewick, F; Hill, V; Pellicano E. "It's different for girls": gender differences in the friendships and conflict of autistic and neurotypical adolescents. *Autism*. 93:1-36.
14. Aukett R, Ritchie J, Mill K. Gender differences in friendship patterns. *Sex Roles*. 1988;19(1-2):57-66. doi:10.1007/BF00292464
15. Loflin DC, Barry CT. "You can't sit with us:' Gender and the differential roles of social intelligence and peer status in adolescent relational aggression. *Pers Individ Dif*. 2016;91:22-26. doi:10.1016/J.PAID.2015.11.048
16. Kokkinos CM, Voulgaridou I, Mandrali M, Parousidou C. Interactive Link Between

- Relational Aggression, Theory of Mind, and Moral Disengagement Among Early Adolescents. *Psychol Sch.* 2016;53(3):253-269. doi:10.1002/pits.21902
17. Baldwin S, Costley D. The experiences and needs of female adults with high-functioning autism spectrum disorder. *Autism.* 2016;20(4):483-495. doi:10.1177/1362361315590805
 18. American Psychiatric Association., American Psychiatric Association. DSM-5 Task Force. *Diagnostic and Statistical Manual of Mental Disorders: DSM-5.* [https://books.google.co.uk/books?hl=en&lr=&id=-JivBAAQBAJ&oi=fnd&pg=PT18&dq=diagnostic+statistical+manual&ots=ceQS27PJwd&sig=wG5VzHsS-X-kkj8VcD5a_OuZBuA#v=onepage&q=diagnostic statistical manual&f=false](https://books.google.co.uk/books?hl=en&lr=&id=-JivBAAQBAJ&oi=fnd&pg=PT18&dq=diagnostic+statistical+manual&ots=ceQS27PJwd&sig=wG5VzHsS-X-kkj8VcD5a_OuZBuA#v=onepage&q=diagnostic%20statistical%20manual&f=false). Accessed October 1, 2018.
 19. Kanfiszler L, Davies F, Collins S. “I was just so different”: The experiences of women diagnosed with an autism spectrum disorder in adulthood in relation to gender and social relationships. *Autism.* 2017;21(6):661-669. doi:10.1177/1362361316687987
 20. Bargiela S, Steward R, Mandy W. The Experiences of Late-diagnosed Women with Autism Spectrum Conditions: An Investigation of the Female Autism Phenotype. *J Autism Dev Disord.* 2016;46(10):3281-3294. doi:10.1007/s10803-016-2872-8
 21. Lai M-C, Lombardo M V, Ruigrok AN, et al. Quantifying and exploring camouflaging in men and women with autism. *Autism.* 2017;21(6):690-702. doi:10.1177/1362361316671012
 22. Hull L, Petrides K V., Allison C, et al. “Putting on My Best Normal”: Social Camouflaging in Adults with Autism Spectrum Conditions. *J Autism Dev Disord.* 2017;47(8):2519-2534. doi:10.1007/s10803-017-3166-5

23. Cassidy S, Rodgers J. Understanding and prevention of suicide in autism. *The lancet Psychiatry*. 2017;4(6):e11. doi:10.1016/S2215-0366(17)30162-1
24. George R, Stokes MA. Gender identity and sexual orientation in autism spectrum disorder. *Autism*. September 2017:136236131771458. doi:10.1177/1362361317714587
25. Bejerot S, Eriksson JM. Sexuality and Gender Role in Autism Spectrum Disorder: A Case Control Study. *PLoS One*. 2014;9(1):e87961. <https://doi.org/10.1371/journal.pone.0087961>.
26. Dibble JL, Levine TR, Park HS. The Unidimensional Relationship Closeness Scale (URCS): Reliability and validity evidence for a new measure of relationship closeness. *Psychol Assess*. 2012;24(3):565-572. doi:10.1037/a0026265
27. McDonald S, Bornhofen C, Shum D, Long E, Saunders C, Neulinger K. Reliability and validity of The Awareness of Social Inference Test (TASIT): A clinical test of social perception. *Disabil Rehabil*. 2006;28(24):1529-1542. doi:10.1080/09638280600646185
28. Wechsler D, Zhou X, Psychological Corporation., Assessment Library Materials (University of Lethbridge. Faculty of Education. Curriculum Laboratory). *WASI-II Wechsler Abbreviated Scale of Intelligence*.
29. World Health Organization. *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. World Health Organization; 1992. <https://books.google.co.uk/books?hl=en&lr=&id=DFM0DgAAQBAJ&oi=fnd&pg=PR1&dq=who+icd+10&ots=g3-TuBSP5u&sig=OGC8mnLDphA1hNV8TjX9al8Wawc#v=onepage&q=who+icd+10&f=false>. Accessed October 1, 2018.

30. Constantino JN. Social Responsiveness Scale, Second Edition (SRS-2) | Pearson Clinical Australia & New Zealand. <https://www.pearsonclinical.com.au/products/view/512>. Accessed October 1, 2018.
31. Mathersul D, McDonald S, Rushby JA. Understanding advanced theory of mind and empathy in high-functioning adults with autism spectrum disorder. *J Clin Exp Neuropsychol*. 2013;35(6):655-668. doi:10.1080/13803395.2013.809700
32. Lord C, Rutter M, DiLavore P, Risi S, Gotham K, Bishop S. Autism Diagnostic Observation Schedule Second Edition (ADOS-2) Manual (Part 1): Modules 1–4. *Torrance, CA West Psychol Serv*. 2012.
33. Flanagan JC. The critical incident technique. *Psychol Bull*. 1954;51(4):327-358. doi:10.1037/h0061470
34. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101. doi:10.1191/1478088706qp063oa
35. IBM Corp N. IBM SPSS statistics for windows. *Version*. 2013;22.
36. Faul F, Erdfelder E, Lang A-G, Buchner A. G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods*. 2007;39(2):175-191.
37. Cohen J. *Statistical Power Analysis for the Behavioral Sciences (2nd Edition)* Title : *Statistical Power Analysis for the Behavioral Sciences (2nd Edition)* ID : XM-77778. https://6666957a-a-62cb3a1a-sites.googlegroups.com/site/ff07edownloadbooks/ff07/statistical-power-analysis-for-the-behavioral-sciences-2nd.pdf?attachauth=ANoY7crTW63V_RgRRpCRJevhadRqDRsxGN6NiP_auxkguww

VlhZSjFtvX9V76QFZHNENG3whoHORCHvfW3uU6U23h51if01qTJD. Accessed October 1, 2018.

38. Mazurek MO. Loneliness, friendship, and well-being in adults with autism spectrum disorders. *Autism*. 2014;18(3):223-232. doi:10.1177/1362361312474121
39. Sexual offences in England and Wales - Office for National Statistics. <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/sexualoffencesinenglandandwales/yearendingmarch2017>. Accessed October 1, 2018.
40. Martin SL, Ray N, Sotres-Alvarez D, et al. Physical and Sexual Assault of Women With Disabilities. *Violence Against Women*. 2006;12(9):823-837. doi:10.1177/1077801206292672
41. Baron-Cohen S, Wheelwright S, Hill J, Raste Y, Plumb I. The “Reading the Mind in the Eyes” test revised version: A study with normal adults, and adults with Asperger syndrome or high-functioning autism. *J child Psychol psychiatry*. 2001;42(2):241-251.
42. Happé FGE. An advanced test of theory of mind: Understanding of story characters’ thoughts and feelings by able autistic, mentally handicapped, and normal children and adults. *J Autism Dev Disord*. 1994;24(2):129-154. doi:10.1007/BF02172093
43. Spek AA, Scholte EM, Van Berckelaer-Onnes IA. Theory of Mind in Adults with HFA and Asperger Syndrome. *J Autism Dev Disord*. 2010;40(3):280-289. doi:10.1007/s10803-009-0860-y
44. Pellicano E, Burr D. When the world becomes “too real”: a Bayesian explanation of autistic perception. *Trends Cogn Sci*. 2012;16(10):504-510. doi:10.1016/J.TICS.2012.08.009
45. Crane L, Goddard L. Episodic and Semantic Autobiographical Memory in Adults with

- Autism Spectrum Disorders. *J Autism Dev Disord.* 2008;38(3):498-506.
doi:10.1007/s10803-007-0420-2
46. Sasson NJ, Faso DJ, Nugent J, Lovell S, Kennedy DP, Grossman RB. Neurotypical Peers are Less Willing to Interact with Those with Autism based on Thin Slice Judgments. *Sci Rep.* 2017;7(1):40700. doi:10.1038/srep40700
47. Grossman RB. Judgments of social awkwardness from brief exposure to children with and without high-functioning autism. *Autism.* 2015;19(5):580-587. doi:10.1177/1362361314536937
48. Howlin P. Outcome in Adult Life for more Able Individuals with Autism or Asperger Syndrome. *Autism.* 2000;4(1):63-83. doi:10.1177/1362361300004001005
49. Howlin P, Moss P, Savage S, Rutter M. Social Outcomes in Mid- to Later Adulthood Among Individuals Diagnosed With Autism and Average Nonverbal IQ as Children. *J Am Acad Child Adolesc Psychiatry.* 2013;52(6):572-581.e1. doi:10.1016/J.JAAC.2013.02.017