

## Title

# Experiences of Sex Education and Sexual Awareness in Young Adults with Autism Spectrum Disorder

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## Abstract

The research investigated feelings towards sex education and sexual awareness in young adults with autism spectrum disorder (ASD). Data were generated from the Sexual Knowledge, Experiences, Feelings and Needs Questionnaire (McCabe, 1999), the Sexual Awareness Questionnaire (Snell, Fisher & Miller, 1991) and semi-structured interviews. Twenty typically developing and twenty ASD individuals took part. Feelings toward sex education did not differ between the groups, but the groups differed significantly on measures of sexual awareness. The ASD group reported negative experiences of sex education and issues of vulnerability, social anxiety, and confused sexuality were prominent features of the qualitative interviews. The report confirms that sex and relationship education is not sufficient to match the needs of people with ASD.

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Experiences of Sex Education and Sexual Awareness in Young Adults with Autism Spectrum  
Disorder

## Abstract

The research investigated feelings towards sex education and sexual awareness in young adults with autism spectrum disorder (ASD). Data were generated from the Sexual Knowledge, Experiences, Feelings and Needs Questionnaire (McCabe, 1999), the Sexual Awareness Questionnaire (Snell, Fisher & Miller, 1991) and semi-structured interviews. Twenty typically developing and twenty ASD individuals took part. Feelings toward sex education did not differ between the groups, but the groups differed significantly on measures of sexual awareness. The ASD group reported negative experiences of sex education and issues of vulnerability, social anxiety, and confused sexuality were prominent features of the qualitative interviews. The report confirms that sex and relationship education is not sufficient to match the needs of people with ASD.

*Keywords:* autism disorder, sex education, sexual awareness, young adults, sexuality

A core element of Autistic Spectrum Disorder is poor understanding of social interaction, which can include the failure to read verbal and non-verbal social cues and difficulties in maintaining relationships (APA, 2013). Adversities in this area can make individuals with ASD susceptible to a range of difficulties surrounding sex and relationships (Byers, Nichols & Voyer 2013). Although young adults with autism show an interest in sex and relationships (Gilmour, Schalomon & Smith, 2012), compared to typically developing individuals they are provided with less sex education and possess less sexual knowledge (Stokes & Kaur, 2005). Societal barriers have played a role in preventing individuals with ASD receiving adequate sex and relationship guidance and support (Koller, 2000), and this may lead to low self-esteem, depression, loneliness, isolation from the wider community, aggression and confusion (Koller, 2000; Hatton & Tector, 2010). The need to address this subject is becoming more pronounced as greater opportunities within the wider community are arising for individuals with ASD (Sullivan & Caterino, 2008). The present research investigates the experiences of sex education, and level of sexual awareness, among young adults with autism compared to typically developing young adults, using both quantitative and qualitative data.

Studies suggest that the social impairments associated with ASD elevate the risk of individuals experiencing sexual abuse and victimisation, and individuals are between two and three times more likely to experience sexual exploitation (Brown-Lavoie, Viecili & Weiss, 2014). Elderson (2010) identified a combination of risk factors that may explain part of this susceptibility; ASD features such as the inability to understand social expectations and lack of social judgement can place a young person in a vulnerable position. For example, a young person with ASD may not be able to discriminate between a “safe” and “unsafe” person due to socio-emotional deficits and failure to detect emotions and intentions, such as deception.

Sexual awareness is an integral part to understanding one's own sexuality and sexual-social environments, and curriculum designers need to be aware of the ASD specific issues surrounding this aspect of sexuality. Sexual awareness involves the knowledge or perception of sexual situations, feelings, motives and desires surrounding sex. An individual's sexual awareness and assertiveness reflects their cognitive attentional processes and tendencies towards sexual sensations, thoughts and behaviours (Snell, Fisher & Miller, 1991). Snell et al., describe four personality tendencies associated with sexual awareness: (1) *Sexual - Consciousness*, which considers attention to internal private sexual cues, such as bodily sensations associated with sexual arousal and motivation, and encompasses a tendency to think and reflect about the nature of one's sexuality, (2) *Sexual - Monitoring*, which is expressed through sensitivity to others' evaluation of one's sexuality, and a tendency to be aware of the public impression which one's sexuality makes on others, (3) *Sexual - Assertiveness*, which demonstrates self-reliance in sexual decision making and a tendency to be assertive about the sexual aspects of one's life (4) *Sexual-appeal-consciousness*, which is an awareness of one's own public sexiness, and an individual alertness to other's perception that one is sexy. Since individuals with ASD have difficulties with self-awareness (Verhoeven et al., 2012), perceiving social situations and ascribing mental states to others (Baron-Cohen, Leslie & Frith, 1985), it follows they may have lower levels of sexual awareness and assertiveness than their typically developing peers. Therefore, with regards to Snell et al.'s tendencies, individuals with ASD may score low on all four factors. To-date this has not been examined through self-reports with young people and can therefore not be confirmed within this population.

The quantitative element of our study has two main aims and incorporates six experimental hypotheses. The first aim is to identify the feelings and needs that young people with ASD have reflecting their experiences of sex education compared to typically

1 developing young adults. To do this we will use the Sex Education Subscale of the Sexual  
2 Knowledge, Experience, Feelings and Needs Scale (SexKen, McCabe, 1999) and predicted  
3 that individuals with ASD would report significantly lower positive feelings towards sex  
4 education and more need for sex education than their typically developing peers. The second  
5 aim of the study is to examine the sexual awareness levels of young people with ASD  
6 compared to typically developing young adults. Using the The Sexual Awareness  
7 Questionnaire (SAQ, Snell, Fisher & Miller, 1991), we hypothesised that individuals with  
8 ASD would score significantly lower on all four subscales when compared to TD peers.  
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10  
11 In order to interpret how the data from the Sexual Awareness Questionnaire manifest  
12 in actual behaviour and beliefs, we will use a semi structured interview to gather qualitative  
13 data from a small sample of the participants. This aspect of the study intends to gain a more  
14 in-depth account of the sex education and sexual experiences of the participants. An inductive  
15 approach will be applied to this element of the study which intends to explore the following  
16 research questions: What perceptions do young people with ASD have surrounding their  
17 experiences of sex, relationships and sex education? How have these experiences made them  
18 feel? How do these experiences and perceptions compare to typically developing young  
19 adults?  
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## Method

### *Design*

This study incorporates a between-subjects design and a mixed method approach. A parallel, concurrent design with a linear process was adopted for this study. The two separate sets of analysis were integrated using systematic triangulation. Equal weight was assigned to each component of the study.

### *Participants*

Forty participants, aged between 18-25 years, took part in the quantitative segment of the study. Twenty individuals with a diagnosis of Autistic Spectrum Disorder (ASD) (12 males, 8 females) and twenty typically developing individuals (TD) (7 males, 13 females). From the forty participants, four individuals from each group (ASD and TD) (4 males, 4 females) additionally took part in the qualitative aspect of the research. Pearson's chi-square test indicated that gender was independent from group,  $X^2(1, N = 40) = 2.51, p = .11$ . All ASD participants had previously received a diagnosis of ASD from a trained clinician, none of the participants had intellectual impairments.

### *Materials*

*Sexual Knowledge, Experience, Feelings and Needs Scale (SexKen, McCabe, 1999).*

This scale includes 13 subscales, each relating to different areas of sexuality. For the purpose of this study only one subscale was employed; the Sex Education Subscale, due to the study specifically investigating sex education only. The SexKen Questionnaire is a reliable and valid psychometric measurement (McCabe, Cummins & Deeks, 1999). The Sex Education Subscale measured the sex education feelings and needs of the participants on continuous



interval scales. The “feelings” scale examined the participant’s “attitudes and emotional responses reflecting sex education”. The “needs” scale evaluated the young person’s “perceived need to experience more sex education and know more about sex”.

*The Sexual Awareness Questionnaire (SAQ, Snell, Fisher & Miller, 1991).* Is an objective, reliable and valid, self-report instrument designed to measure four personality tendencies associated with sexual awareness and sexual assertiveness. It consists of 36 items referring to sexual aspects of people’s lives. Participants are asked to indicate to what extent each item is characteristic of them on a continuous interval 5-point Likert scale. Each item refers to one of the four personality tendencies (1) *Sexual – Consciousness*; defined as the tendency to think and reflect about the nature of one’s sexuality. (2) *Sexual – Monitoring*; defined as the tendency to be aware of the public impression which one’s sexuality makes on others. (3) *Sexual Assertiveness*; defined as the tendency to be assertive about the sexual aspects of one’s life. (4) *Sex-Appeal Consciousness*; defined as the tendency to be aware of one’s own public sexiness and individual alertness to other’s perception that one is sexy.

The qualitative part of the study comprised of a semi structured interview (Appendix A), that lasted approximately ten to fifteen minutes. Ten questions, with follow up questions, were created by the lead researcher in advance to organise the structure of the interview.

### *Procedure*

Data collection took place between November 2014 and May 2015. Participants received either a welcoming talk or email (if the participants had responded to the advertising poster online) introducing the study. All participants received the same questionnaire booklet. Participants took as long as they needed to read and fill in the questionnaire booklet. No time limit was given. Participants with a diagnosis of ASD completed the questionnaires either in a group setting (during the social club evening) or on their own when the questionnaire

booklet was emailed to them. Typically developing individuals completed the questionnaire booklet in a group setting after and before lectures in a lecture hall. Participants who took part in the qualitative section had completed the quantitative questionnaires beforehand. The semi-structured interviews all took place in a private side room either in the university library or at the ASD social club setting. No time limit was given and a Dictaphone was used to record the interviews.

The transcripts were analysed using thematic analysis. The data were transcribed and codes were subsequently generated and collated into abstract constructs and verified into themes. Researcher judgement was necessary to determine themes and prevalence was counted at the level of the data item. Themes were refined, clearly defined and named. The analysis involved a recursive process, the researcher constantly moved back and forth throughout the phases in order to provide a rich, detailed and complex final account of the data. The analysis incorporated a critical realist framework, whereby semantic themes were developed. This approach “acknowledges the ways in which individuals make meaning of their experiences, and in turn the ways in which the broader social context impinges on those meanings, while retaining focus on the material and other limits of reality” (Brawn & Clarke, 2006). The theoretical stance meant that the reports, experiences, meanings and reality of the participants were fully recognised.

## Results

Independent sample *t*-tests were conducted using a Bonferroni correction to protect against Type I errors. Equal variances were assumed for Sex Education Feelings, Sex Education Needs, Sexual-Monitoring and Sexual-Assertiveness (Levene's test). Equal variances were not assumed for Sexual-Consciousness and Sex-Appeal-Consciousness; therefore, a more robust method of bootstrapping was performed with the *t*-test. Bootstrapping is a technique whereby a statistic (in this case the mean) is estimated by taking repeated statistical samples (with replacement samples) from the data set allowing statistical inferences, including the standard error and deviation of the statistic, to be computed. From this, robust confidence intervals and significance tests have been computed. However, it is important to note that the results remained significant without the bootstrapping technique.

PLACE TABLE 1 HERE

Results in Table 1 show that there was no statistically significant difference between groups on measure of; Sex Education Feelings or on the measure of Sex Education Needs.

Participants with ASD scored significantly lower on measures of Sexual-Consciousness, Sexual-Monitoring, Sexual-Assertiveness and Sex-Appeal-Consciousness than the typically developing participants.

### *Qualitative Interview Analysis*

Thematic analysis revealed five semantic themes: dissatisfaction with sex education in school, sexuality, social difficulties, negative experiences and understanding others.

#### *Participants*

M1: James, male with ASD; M2: Daniel, male with ASD; F1: Emily, female with ASD; F2: Fiona, female with ASD; M3: Matthew, typically developing male; M4: Mark, typically developing male; F3: Emma, typically developing female; F4: Sarah, typically developing female.

#### *Dissatisfaction with sex education in school*

All of the participants with ASD felt that the sex education received from school had not been sufficient.

I feel like I've been given the tools, but I just didn't use them because they weren't clear enough. (F1)

Because I've got autism, I'm a year behind everyone else. So I thought I was maybe not quite ready for it. I wanted it to have been explained in more depth. Then I went to an all-girls school for autistic people and I think they need to do a much better job there. (F2)

Participants with ASD additionally signified a need for more help and education in specific areas of sex and relationships.

I think they've got to teach people who are the right people to go with ....more skills on how to find the right sort of partner.(F2)

F2 revealed how she felt ill-equipped to cope with certain aspects of sexual relationships. In particular, she mentioned the notion of “dirty talk”.

I just don’t know what it is. So when they are all having a joke about it, I might misunderstand or take it the wrong way. I take things too literally, so I feel like someone could have sat down and said “These are the sort of things people probably talk about”, and “These are what they mean”. So then I can go out, actually say “I don’t want to get involved with that” or “Yes I do”. (F2)

M2 mirrored these viewpoints and stated that he did not feel the education from school had been “*very helpful*”. When asked if there was anything he feels particular unprepared for he answered “*a relationship*”. Furthermore, M2 stated he would tell his teenage self to “*try and understand what school is trying to teach you*”.

These findings indicate that the young people with ASD were not only dissatisfied with the content and value of the sex and relationship education, but also that they had difficulties with how it was presented to them and internalising what he was being taught. In comparison three of the four TD participants stated that they felt they had been provided with the right tools and information to lead a safe and fully functioning sex life, and that there was not anything that they felt unprepared for. The typically developing participant who felt differently had attended a Catholic school, which had an impact upon the sex education he received. However, he felt he had been able to seek advice from close friends and he had “*learnt it all himself*”. Other typically developing participants also touched upon “*finding things out for yourself*” (F4), and “*learning through experience*” (M3), viewing it as a natural progression, rather than a desire for more education.

*Sexuality*

The theme “sexuality” refers to the notion of sexual orientation and how this presented itself in the participants’ realities.

M1 said he knew he was homosexual from the age of 12; however, he felt that his rigid thinking patterns, that are associated with autism, prevented him from accepting his sexuality and understanding his identity. After the interview M1 disclosed that he had previously been admitted onto an adolescent psychiatric unit. He explained how an accumulation of the problems he experienced with autism accompanied with issues surrounding his sexuality had contributed to him becoming depressed.

I sort of denied it to myself. Because I have very concrete, black and white thinking... it didn’t quite fit. And it caused me a lot of sort of emotional problems. (M1)

F1 reported that she had experienced multiple sexual interactions with members of the same sex, despite thinking she was heterosexual and not attracted to girls. These reports mirror the low scores ASD participants recorded on Sexual Consciousness subscale.

Assistance with reflecting upon one’s sexual desires, motivations and thoughts is something that would be beneficial in a sex and relationship education for young people with autism.

In comparison none of the typically developing participants mentioned feelings of sexual confusion or sexual experiences with the same sex. All typically developing participants were heterosexual and appeared to be confident in their sexual orientation and preferences.

*Social difficulties*

Social anxiety and discomfort was referred to by most of the participants with ASD, M1 and F2 reported it to be their “*biggest difficulty*” when meeting potential partners. M1 revealed how suffering from social anxiety impacted upon his experiences of dating.

I get a lot of anxiety, and I remember, on one of the occasions I was shaking and I was going red and I was sweating and I was really nervous. (M1)

M2 and F2 reflected upon the effects of difficulties socialising and how social situations, where meeting potential partners may be possible, can be challenging for them.

I just end up being anti-social in such places. (M2)

I generally have problems meeting people because I’m not particularly social. I’m not someone who would go out to the pub tomorrow with a bunch of friends because I don’t have a bunch of friends to go to the pub with. (F2)

In comparison, three of the typically developing participants reported that their main avenue for reaching potential participants was on “*a night out*”, in bars and nightclubs.

*Negative Experiences*

All of the participants with ASD dominated the interviews with reports of negative sexual experiences. F1 stated she had “*been fucked over by someone*” which affected her ability to trust future partners. F1 disclosed to having a sexually transmitted illness (STI), and in hindsight wished she had used protection during sexual intercourse. Furthermore, F1 described how another female had purposely intoxicated her with alcohol with the intent of having sex with her. Another occasion was described by F1 whereby she was influenced and encouraged by others to perform sexual acts with a female. F1 did not appear to be aware that these incidences could be perceived as someone taking advantage of her or abuse.

1 First time I was curious, second time she got me drunk, intentionally for that. And  
2 third time was for sheer banter because someone dared me to. (Laughs). I was a bit  
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4 tipsy. (F1)  
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7 F2 reported a negative experience whereby she felt someone had “*used*” her in a  
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9 sexual situation.  
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12 I’ve been in a bad situation, where to be honest I know now that that person probably  
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14 was using me. But at the time, I was so head over heels for that person that I didn’t  
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16 really, I didn’t really think anything other than “He really likes me”. (F2)  
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21 M1 also spoke about a partner who was “*abusive and took advantage*”. Vulnerability  
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23 to abuse was reported in the literature review, the findings emphasise the need for change and  
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25 the prevalence of the issue. None of the typically participants reported being abused or  
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27 expressed feelings of being “*used*”.  
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31 M2 also appeared to have a very negative outlook on sex and relationships and spoke  
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33 about the difficulties he has faced.  
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37 M2: I just keep getting it wrong and just keep messing stuff up. Yea so, it doesn’t  
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39 really happen in my world.  
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43 Interviewer: Why do you say you mess things up?  
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46 M2: Just bad college experiences. Bad outdoor, outside experiences.  
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49 Interviewer: What have these bad experiences entailed?  
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52 M2: They’ve entailed me, erm, stalking, I guess. I should just now admit stalking. Just  
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54 getting on the wrong side, getting jealous. Just yea, feeling ignored.  
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Two of the participants with autism admitted to stalking someone they were sexually interested in. However neither appeared to display any understanding or awareness of its seriousness.

I literally just saw him on the street. And then pretty much just stalked him. (F1)

In contrast all of the typically developing participants reported many positive experiences and emotions. M3 and M4 expressed very jubilant attitudes towards sex and relationships.

It's just a fun part of a relationship.... So just you know, enjoy it! (M3)

Two of the typically developing participants did allude to having a partner cheat on them; however, this did not appear to affect their optimistic outlook on sex and relationships.

### *Understanding Others*

Studies have shown that young people with ASD have difficulties understanding others' thoughts and beliefs (Baron-Cohen, 2001). Therefore, it is not unexpected that this theme was something the young people with ASD experienced difficulties with in relation to sex and relationships.

M1, M2 and F2 referred to difficulties understanding and interpreting what others were thinking or feeling during dating and sexual experiences.

I'm not able to tell what someone is thinking. So, I didn't know what they thought or the subtleties of social situations. That are so difficult in ASD anyway. (M1)

M1 recognised a connection between not being able to understand others and his social anxiety during dating. Similarly, M2 also acknowledged that not being able to understand others, and how they might be feeling, impeded upon his experiences and

1 decision making skills, for example participating in stalking and sending inappropriate  
2 messages.  
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5 F2, also expressed difficulties understanding others, however related it to the ability  
6 of recognising ill intent.  
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10 I've slowly realised I need to be more careful and people try and get you in the hook  
11 without you realising..... I thought it would be much more difficult for people to be  
12 able to do that, but really it's not. (F2)  
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18 F1 said she found it difficult to recognize when it was appropriate to advance with an  
19 intimate relationship. Additionally, F2 expressed that she felt herself and others with autism  
20 needed help understanding other's intentions and identifying "the right sort of partner". These  
21 statements infer that girls with ASD recognise the deficits that they face with regards to  
22 understanding others and approach sex and relationships with caution.  
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## Discussion

The study reported in this paper set out to compare sexual awareness, and perceptions of the adequacy of sex education provision, in a group of young adults with ASD. These issues were examined using two quantitative measures and results were followed up through the use of qualitative interviews. The results from the SexKen (McCabe, 1999) demonstrated that the participants with ASD did not believe that they needed more sex education or needed to know more about sex than their typically developing counterparts; however, their sexual experiences and experiences of sex education, described in the qualitative analysis, differed extensively from their TD peers. The findings suggest that elements of the SexKen may not acutely reflect the experiences of young people with ASD. In relation to sexual awareness, the ASD participants scored significantly lower than the TD participants on all four subscales of the Sexual Awareness Questionnaire (SAQ, Snell, et al., 1991). The qualitative reports complemented these results by corroborating and enhancing the understanding of how sexual awareness varies between the two groups. Our findings suggest that young people with ASD have specific needs and requirements from sex education that are separate from those of typically developing young people.

Counter to our initial hypothesis individuals with ASD did not differ from the TD group on their responses to the Sex Education Subscale of the *SexKen*. At first this may seem surprising given the literature suggesting that individuals with ASD are not adequately taught about matters pertaining to their sexual life (Stokes & Kaur, 2005; Brown-Lavoie et al., 2014). However, difficulties with sexual experiences, and lack of educational provision, were all mentioned by the ASD participants in the qualitative interviews. One explanation for this

discrepancy is that sex education provision is lacking in schools in general and that potential deficits in formal sex education are realised and compensated for through peer group interaction (Mellanby, Newcombe, Rees & Tripp, 2001). These opportunities were readily available to the TD participants, who were able to access peer groups to augment knowledge gained through formal sex education. In contrast, the ASD group reported high levels of social anxiety and difficulties in forming social groups and social bonds with others. Being isolated from a peer group denies individuals with ASD the opportunity to discuss issues of sex and sexuality and they may not become aware of inadequacies in the formal provision of sex education provided by schools. Lack of peer interaction also means that young people with ASD may require different information relating sex and sexuality from that needed by their typically developing peers. For example, when referring to ‘dirty talk’, something that typically developing individuals may well learn from peers, F2 reported feeling excluded and lacked both knowledge and understanding. Provision for the teaching of ‘dirty talk’ may seem unnecessary for typically developing children, but F2 pointed out that without being taught the lexicon of ‘dirty talk’ she had a tendency to take the phrases too literally.

In respect to sexual awareness, the ASD group scored significantly lower on all four subscales of the *SAQ* than the typically developing group suggesting that they were generally less aware of how others perceived them sexually and failed to perceive the cues given off by themselves and others in sexual situations. Being aware of these elements of sexual behaviour provides a firm foundation for the current curricular to advance. The ASD group recorded lower scores than the TD group on the Sexual Monitoring and Sex-Appeal-Consciousness subscales. Both aspects relate to self-monitoring, which is an aspect of sexual awareness that can be used to facilitate better understanding of the thought processes affiliated with inappropriate sexualised behaviour in young adults with ASD (Snell, Fisher & Miller, 1991). Deficiencies on both these scales can lead to behaviour such as stalking and harassment, in

which two of the participants had engaged. Therefore, a curriculum that focuses on these specific issues could diminish the impediment that is preventing some young people with ASD integrating successfully with society and experiencing fulfilling relationships.

A key feature to come out of the qualitative analysis was vulnerability felt by the individuals with ASD. Vulnerability to sexual victimisation among young people with ASD has been identified as a cause for concern (Brown-Lavoie et al., 2014). The SAQ can be used to gain a clearer understanding of the profiles of individuals vulnerable to exploitation, and it can help explain why young people with ASD are susceptible to sexual victimisation. First, lower sexual-consciousness and assertiveness may lead young people with ASD to experience difficulties when making sense of their feelings during sexual experiences. This may make deciding if they want to proceed with a sexual experience, and voicing their wishes and desires during sexual experiences, difficult. This is reflected in the confusion expressed by F2 about sexual situations where exploitation may have taken place. Second, lack of awareness of how others perceive them sexually, and difficulty monitoring the effect their sexuality has on others (Sex-Appeal-Consciousness and Sexual-Monitoring), may lead to poor interpretation of others' intentions and faults in decision making. As a result, the young person may inadvertently put themselves at risk. This was highlighted under the theme of Negative Experiences. Some of the participants reported being duped into sexual encounters or being in abusive relationships and other had taken part in potentially illegal activities such as stalking. Considering the reports of inadequate sex and relationship education and how this links to sexual victimisation amongst young people with ASD (Stokes & Kaur, 2005), a demand for a curriculum to address these particular concerns and deficits is stressed.

In our sample, individuals with ASD scored significantly lower on the sexual consciousness scale than the TD participants. This may reflect difficulties in relation to self-reflection in matters pertaining to sexual contact and relationships; however, the participants

1 did reflect on their individual sexuality. The theme of sexuality arose from the qualitative  
2 data, and three of the four participants were unsure of their sexuality. Research is beginning  
3 to report a higher number of individuals with ASD defining themselves as gay or bi-sexual  
4 than would be expected in the general population (Gilmour et al., 2012). With a small sample  
5 size, we cannot make firm conclusion, but this element of sexuality needs further research.  
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7 Our study suggests that awareness of sexuality, and reflection upon it, may be different for  
8 individuals with ASD. Whilst many teenagers may face social difficulties, and fear or peer  
9 disapproval, when coming out as gay these were not concerns expressed by M1. His concerns  
10 were based within his rigidity of thought and the difficulty he had shifting his thought  
11 patterns to accept being gay. Sexuality is a difficult subject for all teenagers and being gay  
12 can be a source of depression in this age group (Russell & Joyner, 2001). With individuals  
13 with ASD the problem can be compounded by a 'black and white' way of seeing the world,  
14 and sex education in schools may need to incorporate this 'ASD specific' aspect into teaching  
15 and instruction.  
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34 It is important to consider the methodological limitations of this study. First, the  
35 sample size employed was relatively small. However, the effect sizes between the two  
36 groups were large on the Sexual Awareness Questionnaire allowing us more confidence in  
37 reaction to the null results on the Sexken. The nature in which the qualitative sub sample was  
38 generated may also have affected the findings. The sub sample was based on those who  
39 volunteered after completing the quantitative proportion of the study, which reflects upon the  
40 participants' characteristics and beliefs. Those participants may be more assertive in their  
41 lives or have particularly strong views on the subject area, which in turn may have influenced  
42 the interview. It is therefore difficult to assume whether the sample was suitably  
43 representative. A further detail to consider is that the participants were all currently or had  
44 previously been students, which may also have influenced the results. Students' sexual  
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behaviour and attitudes have been reported to be particularly risky (Synovitz, Hebert, Carlson & Kelley, 2005). However, this criterion meant the samples were appropriately matched and it limited the ability to generalise the results.

This report suggest that it is difficult and confusing for a young person with ASD to experience and learn about sex and relationships. Further, avenues of potential knowledge, such as peer groups, tend to be an inaccessible option for young people with ASD. The participants in our study presented as vulnerable to the manipulation of others and in danger of breaking the law due to inappropriate behaviour. Education relating to sex and sexuality in schools needs to be more specifically tailored to the particular needs of individuals with ASD. This needs to incorporate some specific features of ASD such as rigidity of thought, a lack of peer group support, and difficulties in reading the intentions of others. Future research needs to focus on the needs and concerns of individuals with ASD in an attempt to better understanding these specific needs when related to sex and sexuality. Such research will ultimately lead to the development of better measures for gaining an insight into this issue on the type of scale needed to influence policy makers and policy.

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## Appendices

### Appendix A

#### Qualitative Questions

- Have you ever used the internet to find information about sexual issues? What did you learn/want to discover?
- Do you feel you have been given the right tools and information to lead a safe and fully functioning sex life? Is there anything you feel you have not been prepared for?
- Is there anyone in your life who has been significantly helpful in providing you with sex and relationship advice? Who? What have they done? Why have they been important?
- What would your ideal intimate relationship be? Why?
- Where/how do you meet potential partners?
- Have you used any internet dating websites?
- What is your biggest difficulty when meeting potential partners?
- Do you use social media/text messaging/multimedia messaging to contact potential or current partners? Do you feel this has helped overcome social anxiety?
- What would you tell your teenage self about sex and intimate relationships, knowing what you know now?
- What has been your most positive experiences with an intimate partner?

Table 1

Results of t-test and Descriptive Statistics for Sex and Sex Education Feelings and Needs, Sexual-Consciousness, Sexual-Monitoring, Sexual-Assertiveness and Sex-Appeal-Consciousness between Young Adults with Autistic Spectrum Disorder (ASD) and Typically Developing (TD) Young Adults.

	ASD		TD		95% CI for Mean Difference	df	t	Sig.	<i>d</i>
	M	SD	M	SD					
Sex Education Feelings	15.75	3.31	16.7	2.32	-2.71, 0.81	38	-1.09	0.14	0.35
Sex Education Needs	7.65	2.16	7.15	1.81	-0.77, 1.77	38	0.79	0.22	0.25
Sexual-Consciousness	11.85	6.64	18.15	3.57	-9.27, -2.93 <sup>a</sup>	29	-3.74 <sup>b</sup>	< .001	1.38
Sexual-Monitoring	13.45	5.46	19.5	4.57	-9.27, -2.83	38	-3.8	< .001	1.23
Sexual-Assertiveness	7.05	5.33	16.25	4.97	-12.5, -5.9	38	-5.65	< .001	1.83
Sex-Appeal-Consciousness	2.1	2.1	4.85	3.38	-4.54, -0.97 <sup>a</sup>	32	-3.09 <sup>b</sup>	< .01	1.09

Note. <sup>a</sup> 95% CI for Mean Difference based on 1000 bootstrap samples. <sup>b</sup> Sig. value based on 1000 bootstrap samples.

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## Author Note

Laura Hannah was an MSc student at Anglia Ruskin University, Cambridge, United Kingdom, the time this study was conducted. Dr Steven Stagg is currently a senior lecture at Anglia Ruskin University, Cambridge, United Kingdom.

There has been no change in author affiliation.

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