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Relationship between sexual issues, gender identity, and autism spectrum disorder: A review

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ABSTRACT

Introduction: An individual's innate sense of their gender is known as gender identity. If someone identifies with the gender they were born with, that person is referred to as "Cisgender". Non-binary, transgender and fluid are terminology used by those who do not identify with a pre-defined gender. In a manner analogous to the use of the term "neurodiverse" to describe variations in cognitive styles researchers often employ the term "gender diverse" to encompass a spectrum of gender identities. Similar to autism, gender is a spectrum disorder. **The aim:** This study aims to investigate the relationship between sexual issues, gender identity, and autism spectrum disorder. **Results and discussion:** People with Autism Spectrum Disorder may have sexual difficulties more frequently than others, yet recognizing and addressing these issues can be difficult because of communication challenges. Understanding and expressing their gender identity might be especially difficult for transgender individuals. **Conclusions:** People with ASD frequently experience sexual problems as a result of variations in their sensory processing as well as difficulties with social and communication skills.

Keywords: Sexual issues, gender, gender identity, autism

1. INTRODUCTION

Those with autism are more diverse in their gender identification and sexual orientation than the general population, and they are three to six times more likely to have autism than those in the general population who do not identify as

their assigned sex (Kodak and Bergmann, 2020). Autism spectrum disorder (ASD) indicates a set of early-onset social communication deficits that have a vital genetic component, as well as other causes (Lord et al., 2018). ASD commonly manifests in the early stages of life through repetitive sensory-motor activities, which involve actions or motions that need sensory input and motor responses. Communication issues are also a disease symptom (Warrier et al., 2020). Autism is not solely a hereditary disorder, though genetics do play a part in its development. In the last 50 years, autism has moved from a poorly understood and uncommon pediatric illness to a well-researched and common condition (Lord et al., 2018). Psychosocial therapies have been used to help autistic persons improve their speech and social abilities. Nonetheless, more study is needed to establish the best ways to treat them and promote their long-term independence. Modern research also emphasizes family participation in treatment. It is recognized that family is the main source of support (Hirota and King, 2023).

2. METHODOLOGY

This review was conducted by searching for current papers on PubMed and Google Scholar using the search phrases (autism) OR (ASD) AND (gender) OR (sexuality) OR (sexual behavior). After eliminating duplicates, we appraised all publications using the titles and abstracts. The inclusion criteria were: patients with ASD and sexual topics. Following an exact revision of complete manuscripts, 37 articles met the inclusion criteria. The research took place in March 2024.

3. RESULTS AND DISCUSSION

Sexuality

Individuals with autism spectrum disorders (ASDs) exhibit a complete range of sexual behaviors, akin to those observed in the general population. Nevertheless, certain individuals with ASDs may develop sexual behaviors and interests that are quantitatively above average or deviate from typical norms. This deviation can be attributed to the core symptoms of ASDs, which include deficits in social skills, sensory hypo- and hypersensitivity, and repetitive behaviors. According to general population studies, those without ASD exhibit fewer hypersexual and paraphilic activities and dreams than do people with the disorder. However, the majority of this variance has been attributed to the observations of the male participants with ASD. That may be attributable to the fact that women with ASD often exhibit fewer symptoms and possess better social skills. Techniques for sexual education and therapy should take into account the particular sexual practices that people with ASD exhibit (Schöttle et al., 2017).

Previous research has demonstrated that, while being primarily perceived as heterosexual, the ASD community had higher rates (up to 15% to 35%) of gay or bisexual orientation than the non-ASD group (Dewinter et al., 2013; Hellemans et al., 2007). In the current study, heterosexuality appears in people with ASD less frequently than in healthy controls (HCs). Still, HCs were all heterosexual, making them unrepresentative of the general population. In the Global Online Sexuality Survey, 10% of participants identified as gay (Shaeer and Sheer, 2015). Numerous assumptions have been made about the more extensive range of sexual orientation among people with ASD. Gender may not be as significant in deciding because of reduced opportunities for romantic or sexual connections, as well as limited experience and sociosexual engagement with their peers. When coupled with a lack of sexual education, this could lead to limited knowledge of sexual orientation or preference (Lai et al., 2011; Mandy et al., 2012).

It is also possible that those with ASD choose their sexual preferences independently of what is demanded or expected by society, possibly in part because they are less sensitive to gender roles or social norms (American Psychiatric Association, 1994). Furthermore, there is evidence to suggest that those with ASD may be more accepting of same-sex relationships. People without ASD were more likely to report being in relationships with clear gender imbalances than were HCs. Women with ASD were more likely than men to be in committed partnerships. Even though men enjoy dyadic relationships more than women do, there is some indication that ASD women are more commonly in romantic and sexual relationships (Ousley and Mesibov, 1991; Strunz et al., 2017). This happens when the results comparing the differences between the sexes and their relationship behavior are inconsistent.

This may be due to the ability of women with ASD to use more sophisticated coping strategies. To do this, they imitate the social skills of their peers without ASD, and it leads to reduced impairment of social functioning (Van-Wijngaarden-Cremers et al., 2014). Regarding the frequency of sexual behavior, women with ASD reported a lower desire to engage in sexual activity with a partner and a greater prevalence of solitary rather than person-oriented sexual behavior. Similar tendencies are observed in ASD males, which is in line with earlier research (Byers and Nichols, 2014; Cottenceau et al., 2012). However, rejecting social norms, having generally low

social skills, and having sensory hypo- or hypersensitivity may also enhance the likelihood of engaging in nonnormative or statistically above-average sexual practices (Brown-Lavoie et al., 2014).

This theory was substantiated by findings indicating that individuals with ASD were more likely to report hypersexual behavior compared to healthy controls. No significant differences were observed between the studied groups of women. Differences can be observed mainly in men with ASD. The reasons for the higher prevalence of hypersexuality in ASD men are unknown, but it is conceivable that they may be related to repetitive activities or impacted by sensory impairments. Small sample sizes limited studies on the incidence of hypersexual behavior in women. Prevalence estimates in the general population range from 4% to 40% (Klein et al., 2014).

Gender identity and sexual orientation

According to clinical observations, there is an overrepresentation of people with autism spectrum disorder in gender dysphoria. Currently, we know a little about the demographics of gender-identity issues in autism spectrum disorder. Based on the scant information available, we hypothesized that individuals with autism spectrum disorder will experience gender dysphoria more frequently than individuals who are experiencing typical development (George and Stokes, 2017; George and Stokes, 2018). Males and girls with ASD were less likely to identify as heterosexual compared to their sex-matched counterparts but more likely to identify as gay, bisexual, and asexual. Less frequently reported as heterosexual and more frequently described as asexual in terms of sexual interactions were males and females with ASD. Bisexual contact reveals no group distinctions (George and Stokes, 2017).

Transgender

This community includes a wide variety of persons, including those who identify as transgender. It is evident that transgender people with autism spectrum disorder (ASD) face unique challenges and concerns when studying the connection between gender identity and ASD. This essay aims to shed light on the experiences of transgender persons within the ASD community by discussing the challenges they confront and the value of inclusive assistance (Warrier et al., 2020). For transgender people within the ASD community, the interplay of gender identity with autistic spectrum disorder creates specific challenges. The social and communication difficulties brought on by ASD may make it more difficult for them to comprehend and express their gender identity, making the process of self-discovery more difficult.

The sensory sensitivities typically observed in ASD patients may also have an impact on processes relating to gender dysphoria or gender affirmation. Sensory intolerances to particular clothing textures, sounds, or social situations may be the root cause of an individual's inability to express their gender identity or engage in gender-affirming activities. The combination of these factors highlights how important it is for the ASD community to fully understand and support transgender people (Van-der-Miesen et al., 2018a). Transgender people require specialized care and consideration within the ASD community. Medical professionals should, first and foremost, provide inclusive and affirming care that considers their unique sensory and social demands.

By tailoring healthcare services to their needs, transgender people with ASD can improve their overall health and happiness through gender-affirming operations. Second, creating hospitable settings that encourage acceptance and tolerance is critical. Through the use of inclusive support networks like support groups, counseling services, and peer mentoring programs, it is essential to address the intersectional challenges faced by transgender people on the spectrum. These resources ensure that people experience understanding, support, and empowerment throughout their journey. It's crucial to inform and increase awareness within the ASD community and society (Van-der-Miesen et al., 2018b; Strang et al., 2023a).

Transgender people within the community of those with autism spectrum disorders manage a delicate intersection of identities, with challenges emerging from both their autism and their gender identity. Recognizing and addressing these difficulties is necessary for providing inclusive and affirming assistance. By ensuring that everyone has access to inclusive care, fostering supportive environments, and promoting education and awareness, we may create a more tolerant culture that welcomes and elevates the diverse experiences and identities of transgender persons on the autistic spectrum (Strunz et al., 2017; Warrier et al., 2020).

Sexual disorders

People with autism spectrum disorder (ASD) often experience sexual issues. Research suggests that individuals on the autistic spectrum may be more likely than others to have odd sexual behaviors or problems. However, it can be challenging to recognize and

diagnose these diseases due to communication issues and ASD's overlapping symptoms. The sexual behaviors of the ASD population are highly diverse. Others may display hyposexuality or a lack of interest in sexual activity, while some people express hypersexuality - excessive or inappropriate sexual behavior (George and Stokes, 2018). Also possible are unusual obsessions, recurring behaviors, or fixations on sexuality. Understanding and addressing the complexity of sexual issues in people with ASD is crucial to giving appropriate assistance and specialized therapies to these individuals (George and Stokes, 2018).

Individuals with autism spectrum disorder may experience sexual difficulties for a variety of reasons, mainly because there are significant modifications in sensory processing. Unusual sensory sensitivities or aversions are typically present in people with ASD, which may influence how they perceive sexuality. Sensory issues with touch, texture, or other sensory inputs may affect a person's sexual preferences, responses, or interests. Second, the social and communication challenges brought on by ASD may make it more difficult for people to create and understand healthy sexual practices and standards. Lack of social skills, failure to decipher nonverbal cues, and issues managing interpersonal relationships can all affect how persons with ASD deal with and comprehend sexual situations (Lai et al., 2015).

Assistance and interventions for people with sexual challenges and autism spectrum disorder (ASD) are essential for their wellness. Education and awareness, which give the ASD community knowledge on sexual development and acceptable behavior, are beneficial in this process. To instruct persons with ASD about personal space, creating boundaries, consent, and healthy relationships age-appropriate resources and materials can be utilized. Social skill teaching is another helpful technique. Targeted therapy can help ASD individuals with their social and communication abilities, which then affects how well they understand and control sexual behavior. These therapies help individuals with ASD comprehend social cues more precisely, express their emotions appropriately, and form meaningful connections (Lai et al., 2015; Kellaher, 2015).

Sexual difficulties on the autism spectrum are a complex and intricate topic. It's essential to recognize the specific challenges people with ASD have in this area and to provide the required support and solutions. We can improve the well-being and quality of life of people on the autism spectrum in terms of their sexual development. To achieve this, awareness should be raised, targeted education should be implemented, social skills development should be supported and specialist help should be offered (Van-der-Miesen et al., 2016).

Sex education

The parents believe that sex education should not address topics linked to sexual relationships, repercussions of sex, birth control, and personal boundaries. In addition, several parents voiced concern that sex education was not mainly targeted to the needs of the ASD population and proposed that it be presented visually, interactively, with an emphasis on ASD, digitally based and at the student's own pace. In a one-year randomized controlled trial, authors examined the efficacy of the Tackling Teenage Training (TTT) program with ASD psychoeducation (concerning puberty, sexuality, and intimate relationships) and practice in communication skills. The young participants' knowledge, particularly their sexual knowledge, increased during the session, as evidenced by self-rated and parent-rated knowledge assessments.

Additionally, parents reported that their kids had an improved understanding of social boundaries in public and private contexts (Visser et al., 2017). In this study, we focused on the relationship between sexual issues and autism spectrum disorder (ASD), as well as gender identity and ASD. The social and communication impairments that are common in ASD make it particularly challenging for transgender people to comprehend and express their gender identification. Their experience of gender dysphoria or gender affirmation procedures may be impacted by sensory sensitivity (Kallitsounaki and William, 2023). To adequately serve transgender people within the ASD community, inclusive and affirming treatment, supportive surroundings, and education are essential.

Furthermore, sexual disorders can occur more frequently in people with ASD, albeit diagnosing and treating these problems can be challenging due to communication impairments (Lai et al., 2017). Sexual issues are common in people with ASD due to sensory processing differences as well as difficulty with social and communication skills. Essential strategies for managing sexual problems in people with ASD include education, social skills training, individual assistance, and counseling (Strang et al., 2023b). We may promote acceptance, support, and well-being for people with ASD and their different experiences by comprehending and resolving these complicated difficulties (Schöttle et al., 2017; Van-der-Miesen et al., 2016). Numerous studies indicate that nonheterosexual inclinations are more common among people with ASD than in the general population (Dewinter et al., 2017).

Additionally, there is proof that compared to the general population, people with ASD exhibit a wider range of gender identities (Pecora et al., 2021). Numerous theories have been put up to account for the higher variation in sexual orientation and gender among autistic people. According to neurobiological hypotheses, there is a correlation between autistic symptoms and higher exposure to prenatal testosterone, as well as brain masculinization. According to psychosocial theories, rigid cognitive processes and stereotyped interests—two major characteristics of ASD—may be linked to strict gender stereotypes (Van-der-Miesen et al., 2018b). According to this theory, people with ASD cannot develop the cognitive flexibility needed to comprehend that gender roles don't always align with gender norms (De-Vries et al., 2010).

As a result, if their interests and qualities do not align with these preconceptions, they may be more likely to acquire a transgender identity. Another reason is that, due to restricted opportunities to meet and form connections with others, as well as a lack of understanding of societal standards, an individual's biological sex may be irrelevant when selecting sexual or romantic partners (Gilmour et al., 2012). It is crucial to understand that deficits influence the variety of problematic sexual behaviors found in this review in the social and communication domains of functioning, as well as a lack of knowledge about sexuality and proper conduct and a desire for romantic or sexual relationships.

It is also important for professionals to be aware of the risk factors, warning indicators, and symptoms of prospective sexual victimization and offense, as well as past unwelcome sexual experiences in clients with ASD. We showed the percentage of sexual difficulties among autistic people in Table 1 based on the paper of (Pecora et al., 2021). As our understanding grows, we may also utilize this information to create programs and strategies that work toward giving people with ASD the tools they need to have a happy sexual and gender identity as well as a healthy sexual life (Pecora et al., 2021). Chart 1 includes a summary of the sexuality of people in the spectrum.

Table 1 Sexual difficulties among persons with autism spectrum disorder in numbers.

94%	Of males in the spectrum self-report masturbation
20-54.2%	Of females with ASD report masturbation
40-77.8%	Of caregivers report observation of masturbation
16.6%	People with ASD experienced sexual abuse
62%	Of females with ASD experienced unwanted sexual touch
Up to 40%	People in the spectrum report nonheterosexual orientations
4 years higher	The age of first sexual experiences in individuals in the spectrum compared to non-autistic peers

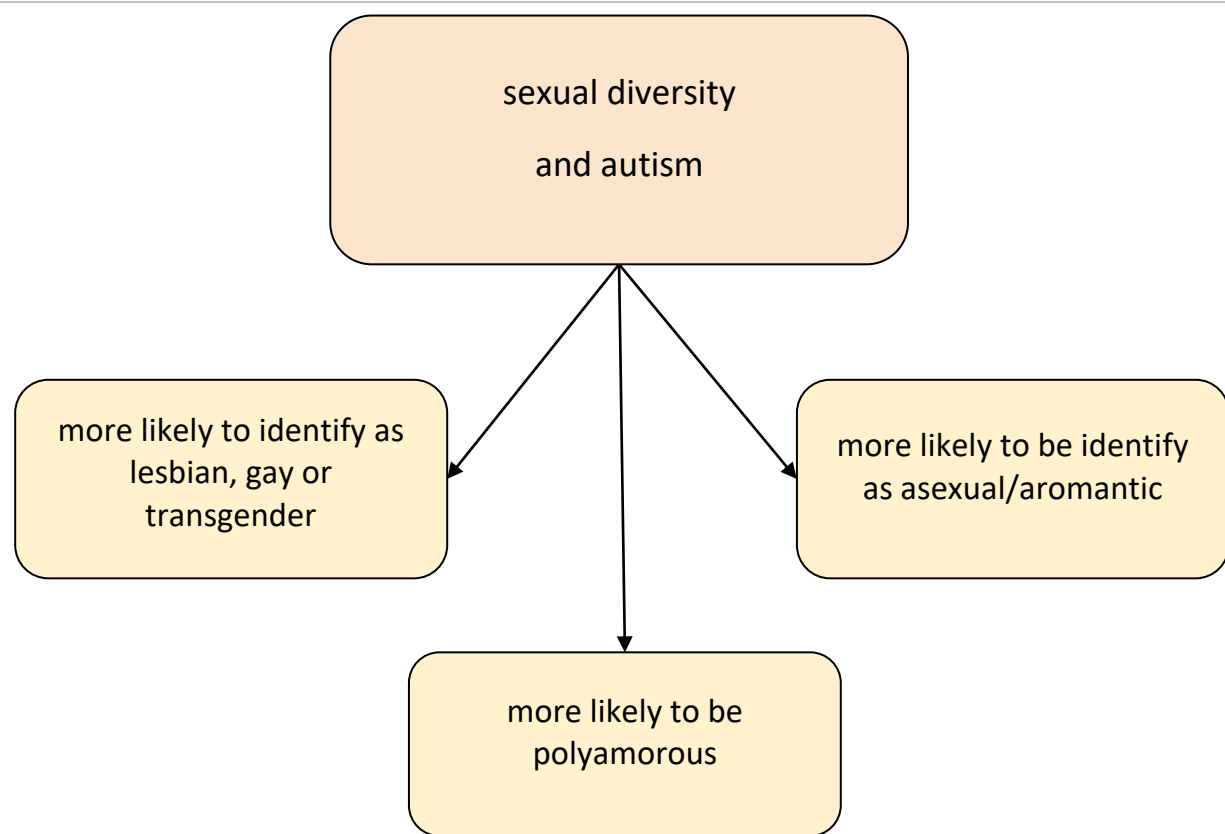


Chart 1 Summary on sexual diversity in people with autism spectrum disorder.

4. CONCLUSION

In summary, compared to peers, people with ASD exhibit a higher frequency of improper behaviors, gender dysphoria, and sexual orientation variations. Deficits in communication and social engagement, together with the constraints inherent in the social context, might have an impact on ASD sexuality and identity by preventing individuals from obtaining sufficient social experiences and connections in comparison to their peers. Therefore, persons with ASD must get sufficient and individualized sexual education that is suited to their unique requirements. Counseling, social skills training, education, and individualized assistance are crucial approaches to treating sexual difficulties in people with ASD.

Author’s Contribution

- Klaudia Włodarczyk: Conceptualization, writing- rough preparation, methodology
- Maria Myślicka: Conceptualization, methodology, investigation
- Milena Orzeł: Resources, writing- rough preparation
- Bartłomiej Orzeł: Conceptualization, writing- rough preparation
- Anna Józefiak: Resources, investigation
- Magdalena Szczepanik: Conceptualization, data curation
- Gabriela Mazurek: Methodology, Visualization
- Dominika Kropidłowska: Writing - Review and editing, supervision
- Przemysław Hałasiński: Conceptualization, data curation
- Jolanta Mazurek: Formal analysis, data curation
- Kinga Piela: Visualization, data curation
- Cezary Bochyński: Resources, writing- rough preparation
- Project administration: Klaudia Włodarczyk

Informed consent

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Ethical approval

Not applicable.

Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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