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The relationship between autism and gender dysphoria, and their co-occurrence with transgender identity: research conditions and implications

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Abstract

Purpose: To discuss the relationship between autism and gender dysphoria (GD), and their co-occurrence with transgender identity, and to raise awareness of the specific needs of individuals with autism spectrum disorder (ASD) in gender-confirming clinics. PubMed, Scopus, Medline, and EBSCO databases were reviewed. Only peer-reviewed English-language articles were considered eligible. Priority was given to meta-analyses and original articles presenting quantitative results published within the last five years; For some unreplicated studies this period was extended. The databases were searched using the keywords: "ASD" and "GD", "autism spectrum" and "transgender", "autism spectrum" and "gender dysphoria".

Views: An increasing number of studies show that ASD is overrepresented in people with GD as well as in gender-affirming secondary care clinics. This trend is observed in both young people and adults. People with overlapping diagnoses face higher anxiety, depression, risk of self-harm and the feeling of being a minority within a minority. Sensory disorders from ASD may cause difficulties in achieving gender congruence, while social communication deficits may delay the diagnosis of transgenderism.

Conclusions: Transgenderism is more common among the ASD population than among neurotypical individuals. The reasons for this correlation are unclear, but they may be found in the theory of mind, extreme male brain theory, cerebral cortex structure, and cognitive inflexibility. Practitioners need training to uphold the dignity and autonomy of patients with comorbid transgender and autism spectrum diagnoses, enabling shared decision-making in treatment process and in co-defining the goals of therapy.

Key words: autism spectrum, transgender, gender dysphoria.

INTRODUCTION

This article focuses on transgender issue in individuals with autism spectrum disorder (ASD). Gender dysphoria (GD) is observed more often in the course of ASD. The autism spectrum is overrepresented in people with GD as well as in gender-affirming secondary care clinics [1]. Due to growing empirical evidence, this trend cannot be denied. People with ASD of all ages are more likely to identify as transgender than neurotypical individuals. Their health requires monitoring and understanding. Transgender people may be up to 3-6 times more likely to be diagnosed with autism than cisgender people [2]. Given the scale and significance of this phenomenon, it is necessary to examine its possible causes, effects, and co-occurring phenomena.

AUTISM SPECTRUM

ASD consists of a group of heterogeneous, genetic neurobehavioral disorders associated with impaired development of social skills, stereotyped, rigid, repetitive behaviors, unusual interests, and differences in sensory stimuli perception. Approximately 2% of children are diagnosed as being on the autism spectrum, with a male to female ratio of 4 : 1 [1]. The heterogeneity of this disorder is now widely accepted, hence the term "spectrum" in the Statistical Manual of Mental Disorders (DSM). Changes in subsequent DSM editions over the years have been accompanied by a 20-fold increase in the reported ASD incidence over the past 30 years [3]. More frequent diagnosis of the spectrum should be considered a positive development because it allows for adjustment of living conditions and implementation of therapy for those

affected. It is associated with greater social challenges, including poorer social skills and relationships, which may influence the severity and presentation of anxiety symptoms, especially social anxiety [4]. Therefore, it is important to increase awareness of the realities of functioning of people on the autism spectrum. Unfortunately, most sources refer to the autism spectrum as a childhood condition, and cases of its occurrence in adults are sometimes overlooked [5].

TRANSGENDER

Transgender is a concept that refers to inconsistency between the gender assigned at birth and the identity that a person has developed throughout life. When gender identity corresponds to the sex assigned at birth, the term is "cisgender". In turn, the concept of "transgender" encompasses the full spectrum of gender identity and expression. People whose gender was assigned male at birth and now identify as female are referred to as male-to-female (MTF), while people assigned female gender who identify as men are referred to as female-to-male (FTM) [6]. The concept of transgenderism is related to the concept of GD, which involves an internal sense of gender incongruity and lack of identification with one's gender assigned at birth [7]. Over the years, practitioners' attitudes towards understanding transgenderism have evolved. A long research journey has been undertaken to best understand its nuances and find appropriate approaches to transgender individuals. These shifts are evident across subsequent DSM editions [8]. However, current scientific consensus holds that having a gender identity that is different from the sex assigned at birth does not constitute psychopathology. It is one of the forms of human diversity that does not go beyond the concept of health [9]. Despite this, transgender people may still experience discrimination, which affects their well-being. Monitoring and understanding their health remains essential, though research is still fragmented [10]. Due to stigmatization experienced by transgender people, the phenomenon may be underestimated. Estimates of gender incongruity in the general population range from 0.5% to 1.3% for those assigned male at birth and 0.4% to 1.2% for those assigned female at birth [11].

THE RELATIONSHIP BETWEEN TRANSGENDERISM, GD AND ASD

Numerous studies demonstrate a link between ASD and GD diagnoses and the occurrence of GD which is the discomfort resulting from inconsistency between sex assigned at birth and gender identity. Van der Miesen *et al.* [12] conducted a questionnaire study using the 110-item Youth Self-Report and the Adult Self-Report scales, which measure the level of desire to be the opposite gender to the one assigned at birth. Results showed that teens with autism were 2.12 times more likely to experience this desire than their neurotypical peers. Similarly, adults on the autism spectrum were 2.46 times more likely to express the desire to be of the opposite sex than non-autistic adults. Hisle-Gorman *et al.* [13] performed a cohort study to examine the incidence of formal diagnosis of GD in children previously diagnosed with ASD. They obtained data for the study by collecting information from medical records. The results again confirmed the positive correlation between ASD and dysphoria occurring over 4 times more often in autistic children than in non-autistic children. Last year's study by Corbett *et al.* [14] again investigated greater gender diversity in autistic children and adolescents. This time, both self-report and parent reports about their children were included. The study involved 244 children aged 10 to 13, of whom 140 were diagnosed with ASD and 104 were described as "typically developing." In the group of children diagnosed with ASD, 104 were assigned male gender at birth (AMAB) and 36 were assigned female gender (AFAB). In turn, among typically developing children, there were 58 AMAB and 46 AFAB participants. Autistic children showed less identification with their gender assigned at birth and greater identification with other binary genders than typically developing participants. Parents of autistic children also reported more gender and body incongruence experienced by their child than parents of typically developing participants. The perspective of parents is an interesting area for analysis. For example, in the study by Kuvalanka *et al.* [15], mothers' fear of a transphobic/cisnormative society and concerns about whether their children's ASD influenced or caused their transgender identity were barriers to full acceptance. Interestingly, according to another study conducted on parents by Brunissen *et al.* [16], parents of girls with ASD were more likely to report that their daughters experienced anxiety due to gender-related concerns and discomfort during adolescence than parents of boys. Akgül *et al.* [17] also conducted a single-center study on children that led to interesting findings. They examined autistic features and executive functions in 25 children and adolescents with GD. The results showed that young people with GD had more impaired executive functions and social problems than controls. A qualitative study conducted by Coleman-Smith *et al.* [18] examined adults with autism's experiences of GD through semi-structured interviews. A key factor was the impact of autism as a barrier, but sometimes also as a protective factor, in terms of understanding and managing dysphoria. Participants reported better well-being post-transition, but dual stigmatized identities, ASD and transgenderism, was associated with anxiety and the feeling of being a "minority within a minority". Tollit *et al.* [19] in their cohort study compared gender identity, gender expression, and GD in transgender youth with and without autistic traits, using

cross-sectional data from children and adolescents from the Royal Children's Hospital Gender Service pediatric gender clinic between February 2017 and January 2020. Autistic traits were examined using the Social Responsiveness Scale-2. Gender was assessed using instruments measuring gender identity, social transition, GD, body dissatisfaction, voice dysphoria, and chest dysphoria. The results revealed differences between the respondents in terms of social transition (particularly pronoun changes), vocal dysphoria, dissatisfaction with secondary sexual characteristics and hormonally unresponsive body characteristics. In the above-mentioned areas, higher rates were achieved by patients on the autism spectrum. A study by Pecora *et al.* [20] focused exclusively on women on the autism spectrum, finding they were more likely to identify with transgender gender identity ($p < 0.05$) and non-heterosexual sexual orientation ($p < 0.007$) compared to women without autism. Dewinter *et al.* [21] reported similar findings; in their study, a significant number of individuals with autism, again more women than men, reported gender-inconsistent feelings. Another aspect that should be discussed when discussing the topic of ASD and sexuality is "masking". The concept refers to the repertoire of behaviors and strategies that individuals apply to conceal their symptoms in a social context to appear neurotypical. Effective use of masking can sometimes delay the diagnosis of ASD [22]. In a study by McQuaid *et al.* [23] Camouflaging Autistic Traits Questionnaire (CAT-Q), Assimilation, Compensation and Masking subscales, were used to measure the level of this phenomenon in autistic people with various characteristics, such as age at diagnosis, gender, and transgender and cisgender status. 502 participants aged 18-49 were qualified for the study. The results showed that autistic transgender people reported increased levels of masking on the compensation subscale compared to cisgender adults. In turn, in the study by Hull *et al.* [24] adults on the spectrum who identified as nonbinary showed levels of masking similar to cisgender women and men. However, this study included only 16 non-binary respondents, so the sample may have been unrepresentative. It is worth noting that individuals with ASD and transgender experience may have both positive experiences and additional challenges, as demonstrated by a qualitative study by Cooper *et al.* [25] of 21 transgender individuals with ASD. Some participants felt that autism helped them understand their gender identity. Others described difficulties, such as tension between the need for physical gender transition and for sameness and routine.

SPECIFIC DIFFICULTIES OF PEOPLE WITH ASD AND GD

People with ASD and GD experience a wide range of problems, different from those faced by individuals with one of these diagnoses. For example, a qualitative analysis by Cooper *et al.* [26] of the experiences of 68 respondents, both adult and adolescent, on the autism spectrum showed, among other things, how complex the pursuit of gender affirmation is and how necessary for the well-being of people with GD accompanied by ASD. One of the individuals participating in the study indicated, for example, that sensory disorders resulting from ASD prevented her from wearing a binder (a specialized bust flattening suit), which in turn deepened her dysphoria [26]. In addition, people with autism are more susceptible to various neurodevelopmental and psychiatric disorders [27], which may complicate the process of diagnosis and transition. The co-occurrence of ASD and transgenderism is, for example, associated with anxiety. This was demonstrated by a study by Clyde *et al.* [28], which included 553 parents and 325 of their children diagnosed with transgenderism. The youth ranged in age from 7.4 to 18.2 years, with an average age of 15.1 years. Parent ratings of children's anxiety symptoms were higher in adolescents with ASD. This pattern was also confirmed in young people's self-reports. In addition to anxiety, the co-occurrence of ASD and GD results in higher rates of depression, suicidal thoughts and self-harm. This highlights the need for special, tailored support for this group of patients. Notably, a holistic understanding of ASD and GD is a necessary factor [29] – without it, patients' dignity and autonomy may be affected by others disbelieving or stigmatizing their gender identity. Patients with GD sometimes express a concern that sexuality may be a temporary, interest resulting from ASD. These assumptions appear to stem from stigma and the belief that people with ASD cannot be truly transgender [30], which is an attack on their autonomy, especially of the patients who are able to co-decide in setting the agenda for their own treatment. Patient co-decision should be allowed, based on evidence and tools that consider the autonomy of patients with ASD, which may help avoid treatment challenges [31]. This will also allow for the formation of therapeutic alliance, which, as evidenced by the study by Brewe *et al.* [32] is especially important for patients with ASD. Moreover, stronger alliance predicts reduced dysphoria resulting from the treatment process. Notably, although diagnostic procedures and gender reassignment process in an autistic person may take longer than in non-autistic people, ASD is not a contraindication to undergoing the gender reassignment process [33].

ATTEMPTS TO EXPLAIN THE RELATIONSHIP BETWEEN GD AND ASD

To the authors' best knowledge, current state of research does not allow for a reliable conclusion as to the reasons for the association between the diagnosis of GD and ASD. However, promising hypotheses have been

found in the literature that are worth discussing here. One is a possible link between ASD, GD, and theory of mind (TM). This is understood as the ability to have mental representations, recognize them as well as understand and predict the behavior of others. Kallitsounaki *et al.* [34] concluded that TM may act as a factor moderating the relationship between autism spectrum traits and GD. In people with ASD who show a reduced ability to TM, they observed increased variability of gender identity from infancy. Another theory that may justify the correlation between the occurrence of GD and ASD is the so-called extreme male brain theory which is based on the differences between the sexes in aspects of empathy, in which, on average, women achieve higher results, and systematization, in assessment tasks, in which men excel. Additionally, testosterone levels have been found elevated in the ASD population. The above-mentioned factors may, to some extent, explain the occurrence of GD in women with ASD, but they do not in any way explain where it may come from in men with ASD [35, 36]. From a neurological point of view, it has been shown that the overdeveloped part of the cerebral cortex in infants at high risk of ASD coincides with that in transgender people who experience GD. This takes place in the postcentral gyrus (main sensory area), left inferior temporal gyrus and right lingual gyrus, respectively [37]. In addition to those mentioned, individuals with diagnosis of being on the autism spectrum show cognitive inflexibility and intolerance of uncertainty [38]. This may suggest that in the case of traits that are identified with the opposite sex, it is difficult for an individual with ASD to identify with his or her biological sex due to the difficulty in internally accepting the contradictions occurring in sexuality.

DISCUSSION OF THE RESEARCH LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

It should be noted that, although exhaustive, empirical research has some limitations. These may result from the fact that some individuals on the autism spectrum experience symptoms that hinder communication with researchers or the completion of self-report. In the authors' view, additional studies showing the differences in the intensity of the examined characteristics in respondents with male and female sex assigned at birth would also be valuable. There is also a paucity of research on GD among non-binary individuals who identify with both or neither gender, as most existing studies focus on those transitioning from MTF and FTM. Furthermore, long-term longitudinal studies measuring the intensity of adverse symptoms in people with ASD and GD, such as anxiety, depression, suicidal thoughts, before and after the gender reconciliation process, would help determine whether affirmation alleviates these issues. It is essential to deepen our understanding of the specifics of working with this sensitive population which combines two identities that are still associated with social stigma in certain contexts.

CONCLUSIONS

An association exists between transgender diagnoses and ASD as evidenced by data from gender reconciliation clinics. Individuals on the autism spectrum report more features of GD than their neurotypical peers. The reason for this correlation remains to be fully explained. Autistic traits in transgender patients may compound the clinical challenges of GD diagnostic process. Due to communication and social difficulties – main ASD criteria – describing their sexuality may be very difficult for individuals with ASD. Moreover, people with autism are more susceptible to various neurodevelopmental and psychiatric disorders, which may further complicate the process of diagnosis and transition. The specific needs of people with combined diagnoses of ASD and GD should be treated with sensitivity and respect for their autonomy.

Conflict of interest

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References

1. Genovese A, Butler MG. The autism spectrum: behavioral, psychiatric and genetic associations. Genes 2023; 14: 677. DOI: 10.3390/genes14030677.
2. Warrier V, Greenberg DM, Weir E, Buckingham C, Smith P, Lai MC, et al. Elevated rates of autism, other neurodevelopmental and psychiatric diagnoses, and autistic traits in transgender and gender-diverse individuals. Nat Commun 2020; 11: 3959. DOI: 10.1038/s41467-020-17794-1.
3. Mottron L, Bzdok D. Autism spectrum heterogeneity: fact or artifact? Mol Psychiatrist 2020; 25: 3178-3185.
4. Hunsche MC, Cervin M, Storch EA, Kendall PC, Wood JJ, Kerns CM. Social functioning and the presentation of anxiety in children on the autism spectrum: a multimethod, multiinformant analysis. J Psychopathol Clin Sci 2022; 131: 198-208.
5. Wright B, Spikins P, Pearson H. Should autism spectrum conditions be characterized in a more positive way in our modern world? Medicina (Kaunas) 2020; 56: 233. DOI: 10.3390/medicina56050233.
6. Cicero EC, Reisner SL, Silva SG, Merwin EI, Humphreys, JC. Health care experiences of transgender adults: anntegrated mixed research literature review. ANS Adv Nurs Sci 2019; 42: 123-138.
7. Bizic MR, Jeftovic M, Pusica S, Stojanovic B, Duisin D, Vujovic S, et al. Gender dysphoria: bioethical aspects of medical treatment. Biomed Res Int 2018; 2018: 9652305. DOI: 10.1155/2018/9652305.
8. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 5th ed. American Psychiatric Association; Washington: 2013.
9. Coleman E, Radix AE, Bouman WP, Brown GR, de Vries ALC, Deutsch MB. Standards of care for the health of transgender and gender diverse people, version 8. Int J Transgend Health 2022; 23: S1-S259.
10. The Lancet Public Health. Transgender health, identity, and dignity. Lancet Public Health 2020; 5: e177. DOI: 10.1016/S2468-2667(20)30059-1.
11. D'hoore L, T'Sjoen G. Gender-affirming hormone therapy: an updated literature review with an eye on the future. J Intern Med 2022; 291: 574-592.
12. Van der Miesen AI, Hurley H, Bal AM, de Vries AL. Prevalence of the wish to be of the opposite gender in adolescents and adults with autism spectrum disorder. Arch Sex Behav 2018; 47: 2307-2317.
13. Hisle-Gorman E, Landis CA, Susi A, Schvey NA, Gorman GH, Nylund CM, et al. Gender dysphoria in children with autism spectrum disorder. LGBT Health 2019; 6: 95-100.
14. Corbett BA, Muscatello RA, Klemencic ME, West M, Kim A, Strang JF. Greater gender diversity among autistic children by self-report and parent report. Autism 2023; 27: 158-172.
15. Kuvalanka KA, Mahan DJ, McGuire JK, Hoffman TK. Perspectives of mothers of transgender and gender-nonconforming children with autism spectrum disorder. J Homosex 2018; 65: 1167-1189.
16. Brunissen L, Rapoport E, Chawarska K, Adesman A. Sex differences in gender-diverse expressions and identities among youth with autism spectrum disorder. Autism Res 2021; 14: 143-155.
17. Akgül GY, Ayaz AB, Yildirim B, Fis NP. Autistic traits and executive functions in children and adolescents with gender dysphoria. J Sex Marital Ther 2018; 44: 619-626.
18. Coleman-Smith RS, Smith R, Milne E, Thompson AR. 'Conflict versus congruence': a qualitative study exploring the experience of gender dysphoria for adults with autism spectrum disorder. J Autism Dev Disord 2020; 50: 2643-2657.
19. Tollit MA, Maloof T, Hoq M, Haebich K, Pace CC, Rodriguez ZM, et al. A comparison of gender diversity in transgender young people with and without autistic traits from the Trans 20 cohort study. Lancet Reg Health West Pac 2024; 47: 101084. DOI: 10.1016/j.lanwpc.2024.101084.
20. Pecora LA, Hancock GI, Hooley M, Demmer DH, Attwood T, Mesibov GB, et al. Gender identity, sexual orientation and sexual adverse experiences in autistic females. Mol Autism 2020; 11: 57. DOI: 10.1186/s13229-020-00363-0.
21. Dewinter J, De Graaf H, Begeer S. Sexual orientation, gender identity, and romantic relationships in adolescents and adults with autism spectrum disorder. J Autism Dev Disord 2017; 47: 2927-2934.
22. Alaghband-Rad J, Hajikarim-Hamedani A, Motamed M. Camouflage and masking behavior in adult autism. Front Psychiatry 2023; 14: 1108110. DOI: 10.3389/fpsyt.2023.1108110.
23. McQuaid GA, Lee NR, Wallace GL. Camouflaging in autism spectrum disorder: examining the roles of sex, gender identity, and diagnostic timing. Autism 2022; 26: 552-559.
24. Hull L, Lai MC, Baron-Cohen S, Allison C, Smith P, Petrides KV, et al. Gender differences in self-reported camouflaging in autistic and non-autistic adults. Autism 2020; 24: 352-363.
25. Cooper K, Mandy W, Butler C, Russell AJ. The lived experience of gender dysphoria in autistic adults: an interpretative phenomenological analysis. Autism 2022; 26: 963-974.
26. Cooper K, Mandy W, Butler C, Russell A. Phenomenology of gender dysphoria in autism: a multiperspective qualitative analysis. J Child Psychol Psychiatry 2023; 64: 265-276.
27. Hossain MM, Khan N, Sultana A, Ma P, McKyer ELJ, Ahmed HU, et al. Prevalence of comorbid psychiatric disorders among people with autism spectrum disorder: an umbrella review of systematic reviews and meta-analyses. Psychiatry Res 2020; 287: 112922. DOI: 10.1016/j.psychres.2020.112922.
28. Clyde A, Bismar D, Agnew G, Kuper LE. Autism spectrum disorder and anxiety among transgender youth: use of the Social Communication Questionnaire (SCQ). J Autism Dev Disord 2024; 54: 615-627.
29. Kallitsounaki A, Williams DM. Implicit and explicit gender-related cognition, gender dysphoria, autistic-like traits, and mentalizing: differences between autistic and non-autistic cisgender and transgender adults. Arch Sex Behav 2022; 51: 3583-3600.

30. Glaves KJ, Kolman L. Gender diversity in autistic clients: an ethical perspective. Front Psychiatry 2023; 14: 1244107. DOI: 10.3389/fpsyt.2023.1244107.
31. McVey AJ, Glaves KJ, Seaver S, Casagrande KA. The ethical imperative to honor autistic clients' autonomy in mental health treatment. Front Psychiatry 2023; 14: 1259025. DOI: 10.3389/fpsyt.2023.1259025.
32. Brewe AM, Mazefsky CA, White SW. Therapeutic alliance formation for adolescents and young adults with autism: relation to treatment outcomes and client characteristics. J Autism Dev Disord 2021; 51: 1446-1457.
33. Baron-Cohen S. The extreme male brain theory of autism. Trends Cogn Sci 2002; 6: 248-254.
34. Kallitsounaki A, Williams DM, Lind SE. Links between autistic traits, feelings of gender dysphoria, and mentalizing ability: replication and extension of previous findings from the general population. J Autism Dev Disord 2021; 51: 1458-1465.
35. Zupanič S, Kruljac I, Šoštarič Zvonar M, Drobnič Radobuljac M. Case report: adolescent with autism and gender dysphoria. Front Psychiatry 2021; 12: 671448. DOI: 10.3389/fpsyt.2021.671448.
36. Bejerot S, Erikson JF. Sexuality and gender role in autism spectrum disorder: a case control study. PLoS One 2014; 9: e87961. DOI: 10.1371/journal.pone.0087961.
37. Sakaguchi K, Tawata S. Giftedness and atypical sexual differentiation: enhanced perceptual functioning through estrogen deficiency instead of androgen excess. Front Endocrinol (Lausanne) 2024; 15: 1343759. DOI: 10.3389/fendo.2024.1343759.
38. Ozsivadjian A, Hollocks MJ, Magiati I, Happé F, Baird G, Absoud M. Is cognitive inflexibility a missing link? The role of cognitive inflexibility, alexithymia and intolerance of uncertainty in externalizing and internalizing behaviors in young people with autism spectrum disorder. J Child Psychol Psychiatry 2021; 62: 715-724.