

Neurodivergence and the LGBTQ+ Community

Resources and peer-reviewed research on the occurrence and intersectionality of neurodivergence and the LGBTQ+ community.

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All information contained in this document is based on reporting, general knowledge, statistics, and/or data collection by established researchers and subject-matter experts. This summary is intended to utilize peer-reviewed research, best practices, and the experience of industry professionals to establish factual reporting.

Issue: Recent reporting has misled the general public with claims that a high percentage or majority of queer-identifying individuals do so because they are neurodivergent, confusing the ideas of mental illness, neurodivergence, and LGBTQ+ identity.

Summary: Research consistently shows that while there is an overlap between the neurodivergent community and the LGBTQ+ community, there is no research concluding that a large proportion of the queer-identifying population are neurodivergent. Further, research continues to show that occurrences of mental illness are typically the result of stigma and social effects from identifying as LGBTQ+ as opposed to the cause (case topic for future reporting). Research consistently shows that the neurodivergent community has a higher likelihood of identifying as LGBTQ+ compared to the general population but this does not correlate to significant causation of queer identification.

Key Findings:

1. Researchers found rates of autism in transgender and gender diverse individuals to be higher than the neurotypical population - 4.5-9.5% compared to 1-2%.
2. Despite this, studies suggest transgender people make up less than 1% of the autistic population.
3. Studies suggest autistic males are 5.8% more likely to identify as bisexual than males without autism. They also suggest that autistic females are 5.2% more likely to identify as homosexual than females without autism.
4. Research suggests that 37% of autistic people identified as not-heterosexual compared to 17% of non-autistic people.

5. Research found that ADHD was present in 4.3% of transgender people in Australia, compared to the national estimate of 1.1%. It has also found autism was present in 4.8% of transgender people in Australia, compared to the national estimate of 0.7%.

Research Citations

1. George, R., & Stokes, M. A. (2018). Gender identity and sexual orientation in autism spectrum disorder. *Autism*, 22(8), 970–982. <https://doi.org/10.1177/1362361317714587>:
 - a. Abstract: This survey examined the prevalence of gender-dysphoria among autistic people spectrum disorder compared to a typically developing population.
 - b. Methodology: The Gender-Identity/Gender-Dysphoria Questionnaire was used to survey 90 males and 219 autistic females spectrum disorder; these rates were compared to 103 males and 158 females without autism spectrum disorder. Then, based on the results, a mediation analysis was performed to determine the relationship between autistic traits and sexual orientation.
 - c. Results: Results suggested that autism presents a unique experience to the formation and consolidation of gender identity compared to the neurotypical individual, and for some autistic individuals, their sexual orientation relates to their gender experience. In addition, it was found that rates of gender-dysphoria in the autistic group were significantly higher than reported in the neurotypical population.
2. Dewinter, J., De Graaf, H., & Begeer, S. (Jun 9, 2017). Sexual orientation, gender identity, and romantic relationships in adolescents and autistic adults spectrum disorder. *Journal of Autism and Developmental Disorders*, 47, 2927-2934. <https://doi.org/10.1007/s10803-017-3199-9>:
 - a. Abstract: This study compared sexual orientation and romantic relationship experience between a sample of neurodivergent (specifically autistic individuals) adults and adolescents (n = 675) and their neurotypical peers (n = 8064). In addition, gender identity was also explored.
 - b. Methodology: Participants self-reported a diagnosis on the autism spectrum. The participant group consisted of a comparable number of men (48.3%) and women (51.7%). The control group consisted of a similar ratio (48.7% men, 51.3% women). These groups were asked nine questions to explore the assigned gender at birth, gender identity, sexual orientation (sexual attraction and sex of the partner), relationship status and evaluation of relationship status, duration of the relationship, living situation, and whether the partner has (or is suspected of having) autism. Chi-square tests were used to analyze the data collected.
 - c. Results: Most men and women in the autism group identified conforming their assigned gender at birth (91.7% for autistic men, 77.9% autistic women). Compared to the general population, more (about one in seven of the women and one in 20 autistic men) indicated attraction other than to someone of the same and/or opposite sex (attraction towards men and/or women vs. other. More autistic women were in a relationship with a woman compared to neurotypical women, although the effect size of this finding was small (Cramer's V = 0.07). For autistic men, no significant difference was detected.
3. de Vries, A.L.C., Noens, I.L.J., Cohen-Kettenis, P.T. *et al.* (2010). Autism Spectrum Disorders in Gender Dysphoric Children and Adolescents. *J Autism Dev Disord*, 40, 930–936. <https://doi.org/10.1007/s10803-010-0935-9>

- a. Abstract: This study examined the co-occurrence of gender dysphoria (they used the outdated “gender identity disorder” or “GID”) and autism among over 200 children and adolescents referred to a gender identity clinic.
 - b. Methodology: The individuals received “a standardized clinical assessment, according to the Standards of Care of the World Professional Association for Transgender Health.” Separate protocols were followed for children under 12 and for adolescents between 12 and 18. The protocols included psycho-diagnostic interviews, interviews with parents about topical function and developmental history, psychological testing by a trained psychometrist, and collection of school information.
 - c. Results: The incidence of autism in the sample was 7.8%, ten times higher than the prevalence of autism in the non-gender diverse population (0.6-1%).
4. Weir, E., Allison, C., & Baron-Cohen, S. (2021). The sexual health, orientation, and activity of autistic adolescents and adults. *Autism Research*, 14(11), 2342-2354. <https://doi.org/10.1002/aur.2604>
 - a. Abstract: This study sought to discover differences between autistic and nonautistic individuals regarding sexual activity, risk of sexually transmitted infections (STIs), and sexual orientation.
 - b. Methodology: Researchers used an anonymous, self-report online survey which consisted of a short version of the Autism Spectrum Quotient (a measure of autistic traits, AQ-10) and the Autism and Physical Health Survey of 2386 adults. The sample “predominantly comprised females, White individuals, UK residents, and those without intellectual disability.”
 - c. Results: The researchers found that autistic males “are uniquely more likely to be bisexual (compared to nonautistic males)” while “autistic females are uniquely more likely to be homosexual (compared to nonautistic females).”
 5. Warrier, V., Greenberg, D.M., Weir, E. *et al.* (2020) Elevated rates of autism, other neurodevelopmental and psychiatric diagnoses, and autistic traits in transgender and gender-diverse individuals. *Nat Commun* 11, 3959. <https://doi.org/10.1038/s41467-020-17794-1>
 - a. Abstract: The researchers sought to investigate if transgender and gender-diverse individuals have elevated rates of autism diagnosis or traits related to autism compared to cisgender individuals in a large non-clinic-based setting.
 - b. Methodology: The researchers analyzed five datasets (four large-scale cross-sectional, internet-based datasets, and one longitudinal dataset) which encompassed 641,860 individuals.
 - c. Results: They discovered that, compared to cisgender individuals, transgender and gender diverse individuals, on average, have higher rates of autism, other neurodevelopmental, and psychiatric diagnoses. They also found that for both autistic and non-autistic individuals “transgender and gender-diverse individuals score, on average, higher on self-report measures of autistic traits, systemizing, and sensory sensitivity, and, on average, lower on self-report measures of empathy.”
 6. Cheung A.S., Ooi O., Leemaqz S., Cundill P., Silberstein N., Bretherton I., Thrower E., Locke P., Grossmann M., & Zajac J.D. (Dec 2018). Sociodemographic and Clinical Characteristics of Transgender Adults in Australia. *Transgender Health*, 3(1). 229-238. <http://doi.org/10.1089/trgh.2018.0019>
 - a. Abstract: This study sought to collect demographic data regarding the transgender population of Australia.
 - b. Methodology: An audit was performed of deidentified electronic medical records in a primary care and a secondary care gender clinic in Melbourne, Australia.

- c. Results: Of the 540 whose data was examined, 44.1% identified as trans male, 36.3% as trans female, and 18.3% as gender nonbinary. Mental illness was noted as being very common, with depression reported in 55.7% of the sample and anxiety in 40.4%. In addition, ADHD was reported in 4.3%, and autism in 4.8%, both higher than reported age-matched general Australian population prevalence.
7. Mahfouda, S., Panos, C., Whitehouse, A. J. O., Thomas, C. S., Maybery, M., Strauss, P., Zepf, F. D., O'Donovan, A., van Hall, H.-W., Saunders, L. A., Moore, J. K., & Lin, A. (2019). Mental Health Correlates of Autism Spectrum Disorder in Gender Diverse Young People: Evidence from a Specialised Child and Adolescent Gender Clinic in Australia. *Journal of Clinical Medicine*, 8(10), 1503. <https://doi.org/10.3390/jcm8101503>
- Abstract: This study sought to verify the overrepresentation of autism spectrum diagnoses or autistic traits in gender diverse samples, particularly in children and adolescents.
 - Methodology: A number of inventories including the Social Responsiveness Scale, Achenbach Youth Self-Report and Pediatric Quality of Life indicator were administered to 104 participants (76% AFAB/n=79, 24% AMAB/n=25) from the Perth Children's Hospital.
 - Results: 9.62% (n = 10) of the sample reported a formal diagnosis of autism, which is higher than general population estimates.
8. Hendriks, O., Wei, Y., Warriar, V., & Richards, G. (2022). Autistic Traits, Empathizing-Systemizing, and Gender Diversity. *Archives of Sexual Behavior*, 51(4), 2077–2089. <https://doi.org/10.1007/s10508-021-02251-x>
- Abstract: Study looked at autistic traits, empathizing, systemizing and wanted to test whether gender-diverse individuals had profiles similar to what Extreme Brain Theory predicted.
 - Methodology: The authors emailed more than 200 LGBTQ+ support groups across the UK asking them to advertise a survey on, among other things, gender identity, personality, and prenatal testosterone exposure, through social media. The authors provided an optional message stating that an Amazon voucher could be won in exchange for completing the survey. They also recruited participants through online survey exchanges and through personal contacts. The 89 participants who fully completed the survey were grouped into 4 groups: transgender AFAB, cisgender female, transgender AMAB, and cisgender male.
 - Results: The AMAB and cisgender male groups did not have different coefficients but the transgender AFAB group had higher AQ, SQ-S, and D-Scores and lower EQ-S than the cisgender female group. These predictions in general matched those of Extreme Male Brain theory, though with some notes on the significance of coefficients from the authors.
9. Cooper, K., Smith, L. G. E., & Russell, A. J. (2018). Gender Identity in Autism: Sex Differences in Social Affiliation with Gender Groups. *Journal of Autism and Developmental Disorders*, 48(12), 3995–4006. <https://doi.org/10.1007/s10803-018-3590-1>
- Abstract: There are higher rates of gender variance in autistic females in particular. Autistic people had lower gender identification and gender self-esteem than the other tested groups, particularly autistic natal females compared to autistic natal males and controls.
 - Methodology: They looked at 2x2x2 factors: (sex: male vs female) x (autism: autistic vs typically developing) x (gender congruence: congruent vs incongruent). Their total sample size was 486: autistic females (101), autistic males (118), TD females (153), and TD males (114). They recruited experimental group participants online through autism forums, organizations, and group networks. Control group participants were recruited

- through social media, university networks, and personal contacts. Participants were in the 16-80 age bracket. Note: They just asked the participants if they had had a formal diagnosis of autism but did not verify the source of the diagnosis. They collected demographics data (including sexual orientation identity) and completed a survey on autism social identity, collective self-esteem, depression, anxiety, and self-esteem.
- c. Results: They created 2 models which were both hierarchical multiple regressions looking at sex, autism, and gender congruence and the interactions between the factors. They also predicted self-reported masculinity and femininity using these factors and interactions. Their results included that the autistic group scored lower on gender identification and gender self-esteem compared to the control group. In their results they found that “there was support for the hypothesis that...”
- “autistic people would identify less with and feel more negatively about a gender group”
 - “gender incongruent participants would have lower gender identification and gender self-esteem than gender congruent participants”
 - “autistic females would have higher masculinity and lower femininity compared to TD females”
 - “autistic natal females would have lower gender identification and gender self-esteem than controls”

Their findings indicated lower gender congruence and higher rates of gender transition in autistic participants, particularly female autistic participants. They found that “autistic natal females are particularly prone to lower social affiliation to a gender group”. The study “demonstrates that the social component of gender identity is also affected in autistic people”.

In their conclusion they state that their findings match up with previous studies’ results of “high rates of gender variance in autism, with females particularly varied in their gender identities” and this study adds to those past results as they specifically found evidence of “sex differences in the autism population, different to those found in the typically developing population, and that autistic individuals have weaker identification with gender groups, and feel less positively [sic] their gender groups than TD controls”.

10. Heylens, G., Aspeslagh, L., Dierickx, J. *et al.* The Co-occurrence of Gender Dysphoria and Autism Spectrum Disorder in Adults: An Analysis of Cross-Sectional and Clinical Chart Data. *J Autism Dev Disord* 48, 2217–2223 (2018). <https://doi.org/10.1007/s10803-018-3480-6>
- a. Abstract: They looked at the prevalence of autism in adults with Gender Dysphoria (GD). They collected data in 2 ways: (1) using social responsiveness scale-adults (SRS-A) and autism quotient (AQ), and (2) using clinical chart data. The mean SRS-A scores were higher than the norm population.
- b. Methodology: They collected cross-sectional data and clinical chart data from 600 patients coming to the Gender Clinic of the Ghent University Hospital in Belgium between Oct 1st, 2010 and Sept 30, 2015.
- For the cross-sectional data: 75 clinic patients given autism and demographic questionnaires as part of larger diagnostic battery (see: Kreukels et al (2010))
- For the clinical data: Clinician searched all clinical patient files with Gender Dysphoria listed for mention of Autism Spectrum Disorder, between Oct. 1st, 2010 and Sept. 30, 2015. The patients were split into 3 categories: no diagnosis, probable diagnosis, and certain diagnosis.

- c. Results: Mean SRS-A scores were higher for GD group than norm group, and the same was true for AMAB vs male norm and AFAB vs female norm groups. The mean AQ score in the AMAB group was 18.8 (SD=6.6) and in the AFAB group was 18.9 (SD=7.5). In their discussion section, overall they found an “overrepresentation of [autism] in AMAB and AFAB compared to the general population.”