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To cite this article: Teddy G. Goetz & Noah Adams (2022): The transgender and gender diverse and attention deficit hyperactivity disorder nexus: A systematic review, Journal of Gay & Lesbian Mental Health, DOI: [10.1080/19359705.2022.2109119](https://doi.org/10.1080/19359705.2022.2109119)

To link to this article: <https://doi.org/10.1080/19359705.2022.2109119>



Published online: 15 Aug 2022.



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The transgender and gender diverse and attention deficit hyperactivity disorder nexus: A systematic review

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ABSTRACT

Introduction: Prior work suggests an increased prevalence of Attention Deficit Hyperactivity Disorder (ADHD) among transgender and/or gender diverse (TGD) individuals. This systematic review summarizes primary literature on TGD/ADHD experience.

Methods: Texts from databases, reference lists, and referral were screened per PRISMA guidelines, with author consensus.

Results: Since 2014, 17 articles have been published on the TGD/ADHD nexus. Gender-affirming care specialists authored 65%. 71% reported prevalence, per medical records. Only case reports discussed implications. None avoided deficit-framing, nor included explicit TGD/ADHD authorship.

Conclusions: The paucity of literature and lack of explicit TGD/ADHD community involvement are striking; each warrants increased attention.

ARTICLE HISTORY

Received 14 March 2022

Revised 14 June 2022

Accepted 31 July 2022

KEYWORDS

Transgender; gender diverse; neurodivergent; ADHD; literature review; attention deficit hyperactivity disorder; non-binary; gender expansive

Introduction

We exist in a time where there is both increasing societal recognition of transgender and/or gender diverse (TGD) individuals and a dramatic increase in political attempts to restrict TGD rights (e.g., Ashley 2018; Boskey et al., 2018; Rosentel et al., 2021; Tebbe et al., 2021; Vipond 2015). As a result, mental health clinicians are increasingly tasked with responding to TGD communities' concerns and needs (e.g., Hughes et al., 2021; Kidd et al., 2021; Lee et al., 2020; Staples et al., 2018). Among these concerns are the rights and needs of individuals who are both neurodivergent¹ and TGD. Indeed, gender is just one aspect of an individuals' lived reality and identity. TGD individuals, for instance, hold a unique complement of

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All appropriate ethical and regulatory permissions had been granted for the study.

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intersectional identities, including race, ethnicity, religion, disability, body size, mental health, language fluency, citizenship, all of which shape daily life, including experiences attempting to access gender-affirming care (e.g., Call et al., 2021).

Though a young research field, preliminary evidence suggests increased prevalence of neurodivergence among TGD persons (e.g., Thrower et al., 2020). However, that literature has largely skewed toward exploring the autistic/TGD overlap and little research exists on the intersection of TGD and Attention Deficit Hyperactivity Disorder (ADHD) experiences. This overlap of experience is extremely pertinent to physicians and mental health providers as the logistical legwork required to access medical (James et al., 2016; Pampati et al., 2021; Puckett et al., 2018), surgical (James et al., 2016; Puckett et al., 2018; Tabaac et al., 2020), and legal (Goetz & Arcomano, 2022; James et al., 2016) gender-affirming services is profound, and may be even more so for those who experience the forms of executive dysfunction associated with ADHD (e.g., Castellanos et al., 2006). Our purpose in this article is to critically review the literature on TGD/ADHD experience in order to establish what is currently known and inform future research initiatives in this area. In keeping with the neurodiversity paradigm, we utilize identity-first language for autism and identity-first and person-first language interchangeably for ADHD (e.g., Brown, n.d.; National Center on Disability and Journalism, 2021; Walker, 2021, pp. 21–22, 91–103). Similarly, we will avoid inherent pathologization of neurodivergent experiences (Walker, 2021).

Materials and methods

Publications for screening were identified utilizing the publication databases Pubmed, Worldcat, and Google Scholar for key words related to TGD health and ADHD. Search terms included: “transg*,” “transs*,” “attention deficit*,” “ADHD,” “ADD,” “neuroqueer,” “neurodivergent,” “gender,” “gender diverse,” “binary,” “dysphoria,” “nonbinary,” and “non-binary” in various combinations. Additional texts were found by reviewing reference lists and through word-of-mouth referral. Searching concluded on December 25, 2021. Inclusion criteria were as follows: (1) Study must be primary literature. (2) Participant population must explicitly include TGD/ADHD persons. (3) The overlap must be meaningfully quantified, discussed, or represented in the paper (e.g., if a case report includes a TGD person with a history of ADHD, but the cited articles do not include mention of ADHD and the ADHD is only referred to as “well-controlled” or briefly in passing and otherwise not considered in formulation or overall treatment plan, that report would be excluded; if a cross-sectional study on

another topic in TGD persons mentioned in one demographic table the number of participants who had ADHD with no other mention of ADHD in the study, that would be excluded).

Per PRISMA guidelines (Figure 1): 36 publications were screened by title and abstract, one (Janssen & Leibowitz, 2018) was deemed a duplicate (full book of which others were chapters), so 35 abstracts were ultimately screened. Of these, two were secondary literature, and accordingly excluded: a peer-reviewed systematic review and a conference abstract. Accordingly, 33 full texts were assessed for eligibility; 16 were excluded. Twelve of those were excluded for not presenting data from participants who were explicitly TGD/ADHD, and four were excluded for not attending to both TGD- and ADHD-related concerns and the TGD/ADHD nexus.

Of note, Oswald et al. (2021) was important to our analysis of the literature, despite ultimately being excluded as its results were not stratified from overall data by gender modality (TGD vs. cisgender queer) or subcategory of neurodivergence (ADHD +/- autistic vs. autistic only). Oswald and colleagues presented the only study screened that was explicitly undertaken with community participation in study design and authorship and approached this subject from a non-deficit-based framework.

The remaining 17 articles were included in this systematic review. Searching, screening, and decisions about inclusion were conducted by author TG, with confirmation by author NA. Disagreements were discussed until a unanimous decision was reached. This systematic review was conducted by one TGD/ADHD author (TGG) and one TGD/autistic author (NA).

Results

Of the 17 articles identified (Table 1), 13 were conducted in the United States, three in Australia, one in Finland, and one in England. The entire literature was remarkably young, with all 17 published within the past seven years, and 76% ($n=13$) within the past four years. Methodologically, four articles were prevalence studies, four were case reports, three were cohort studies, four were retrospective chart reviews, and two were cross-sectional surveys.

The majority of articles ($n=11$; 65%) were authored by individuals who specialize in TGD care (three case studies; three cohort studies; three retrospective chart reviews; one cross-sectional study; one prevalence study). Four were from academic medical center-based researchers and clinicians who did not specialize in TGD health (three prevalence studies, one cross-sectional study). The remaining two additional articles in this systematic review came from a general pediatric endocrine clinic

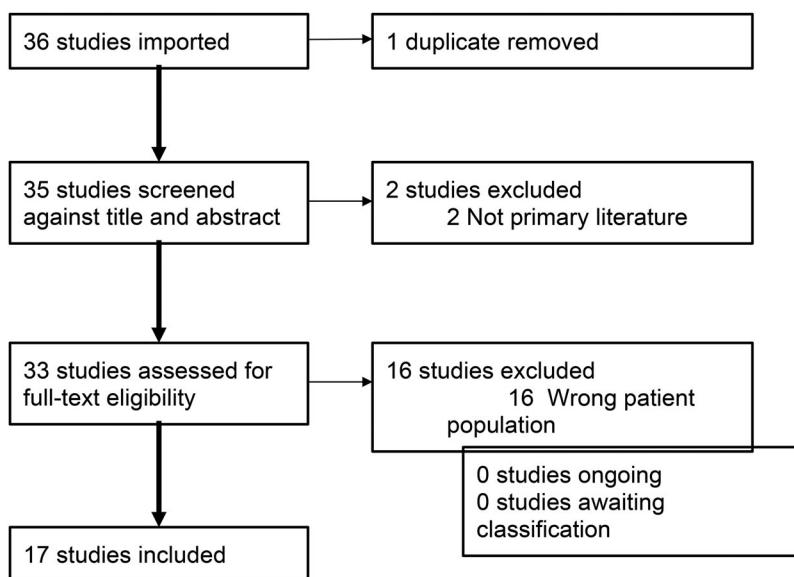


Figure 1. PRISMA screening: “Not primary literature” included one systematic review and one conference abstract that was a review of prior literature. “Wrong patient population” included studies that did not characterize TGD/ADHD experiences explicitly.

(retrospective chart review) and from a team at a Developmental Pediatrics clinic (case study). Of the reviewed publications, only the case reports ($n=4$) discussed the clinical or personal implications of the TGD/ADHD intersection. No papers were conducted with explicit TGD/ADHD community authorship, and none avoided a deficit framing when approaching ADHD. Main findings are synthesized below, organized by category of conclusion.

Prevalence

Of the 12 papers that reported a rate of ADHD among TGD persons (whether among their small single sample, or attempting to characterize prevalence for the population at large), four did so based on large electronic health records (EHR) databases. While this strategy enables larger sample sizes the data were not able to be verified by the researchers for accuracy in either axis. Regarding children and adolescents, in a large (TGD: $n=1333$; Total: $n=27,633$) sample, Becerra-Culqui et al. (2018) found a 2.4–5.6 times increased prevalence of ADHD among EHR-identified TGD children (three to nine years old) and 4.7–12.6 times increased prevalence among adolescents (10–17 years old), compared to age/demographic-matched (assumed-to-be) cisgender peers.

Considering adults, Cheung et al. (2018) found a prevalence of ADHD of 4.3% among EHR-identified TGD adults ($n=540$), which was greater

Table 1. Systematic review data table: Data extracted from the 17 studies included in this review are presented here, including (1) study methodology, (2) country in which it was conducted, (3) categorical perspective of the authorship (clinical specialty/setting), (4) patient population, (5) number of participants, and (6) pertinent findings of the study (defined as specifically regarding the TGD/ADHD nexus).

| Study | Study design | Country | Perspective | Recruitment | | Participants | Total # (n) | Relevant results |
|-----------------------|----------------------------|---------|--------------------------|-----------------|---|--|---|------------------|
| | | | | method | method | | | |
| Agana 2019 | Case report | US | Developmental Pediatrics | Clinic patient | 15yo trans girl with ADHD | n = 1 | Consider complexity of managing comorbidities with gender dysphoria | |
| Becerra-Culqui 2018 | Cohort study | US | TGD specialist | EHR data | children (3–9yo) and adolescents (10–17yo) | n = 588 trans feminine and n = 745 transmasculine; n = 13,151 cis male, n = 13,149 cis female referents (10 age/demographic matched of each, per trans enrollee) | EHR-identified TGD children exhibited several-fold higher rates of ADHD than matched cis peers (transfeminine: 14.9% vs. matched cis male 3.3%, cis female 6.1%; transmasculine: 15.6% vs. matched cis male 2.8%, cis female 6.9%), as did EHR-identified TGD adolescents (transfeminine: 25.1% vs. matched cis male 2.0%, cis female 5.3%; transmasculine: 16.2% vs. matched cis male 1.3%, cis female 3.3%) | |
| Bretherton 2021 | Cross sectional study | Aus | Non-specialist academic | Online | Australian adults (18+) self-identified as “trans” (non-binary inclusive) | n = 928 | Prevalence of self-reported ADHD diagnosis was 11% (vs. 1.1% in general adult population) | |
| Call 2018 | Case report | US | TGD specialist | Clinic patient | 6yo trans girl with ADHD | n = 1 | Clinical guidance for evaluation and management of ADHD and behavioral dysregulation | |
| Chen 2016 | Retrospective chart review | US | Pediatric Endocrinology | EHR data | Youth referred for gender dysphoria | n = 38 | 15.8% prevalence of current ADHD among pediatric patients referred for gender-affirming care | |
| Cheung 2018 | Prevalence study | Aus | Non-specialist academic | EHR data | Australian, trans adults (18+) | n = 540 | Prevalence of ADHD was 4.3% among EHR-identified TGD persons—higher than reported for the age-matched general population (1.1%). | |
| Christian-Brandt 2021 | Case report | US | TGD specialist | Clinic patients | 6 yo Mexican-American child with ADHD, exploring their gender | n = 1 | Guidance for family therapy targeting ADHD and behavioral dysregulation | |

(Continued)

Table 1. (Continued)

| Study | Study design | Country | Perspective | Recruitment | | Participants | Total # (n) | Relevant results |
|---------------------------|----------------------------|---------|-------------------------|-----------------|--|--|---|------------------|
| | | | | method | method | | | |
| Dawson 2017 | Prevalence study | US | Non-specialist academic | Online | Adult US residents (18+) | n = 54 transgender; total n = 6727 | Prevalence of ADHD with co-occurring mood/anxiety disorders was higher among TGD persons (ADHD only: (1, 1.9%); ADHD + Depression only (3, 5.6%); ADHD + Anxiety only (0, 0.0%); All three (7, 13.0%)) compared to cisgender peers (ADHD only (n, %): (237, 3.6%); ADHD + Depression only (143, 2.1%); ADHD + Anxiety only (64, 1.0%); All three (241, 3.6%))* ADHD was more prevalent among hospital discharge diagnoses for EHR-identified TGD individuals (4.1%) compared to peers** (0.4%) TGD youth were more likely to have an ADHD diagnosis (n = 1119; 29.8%) than their cisgender siblings (n = 1229; 18.6%); Odds ratio: 1.77 [1.59 – 1.97] | |
| Hanna 2019 | Prevalence study | US | Non-specialist academic | EHR data | Adults (18+), admitted for an inpatient hospital stay | n = 25,233 transgender; n = 254,412, 130 other** | | |
| Hisle-Gorman 2021 | Cohort study | US | TGD specialist | EHR data | TGD youth and their cisgender siblings, who used the Military Health System | n = 3754 TGD youth; n = 6603 paired cisgender siblings | | |
| Holt 2016 | Retrospective chart review | Eng | TGD specialist | EHR data | Youth (5–17yo) referred to the Gender Identity Development Service in London | n = 218 (n = 137 AFAB; n = 81 AMAB) | Prevalence of ADHD documented in patients' medical records was as follows: By age group: 5–11y: 14.6%, 12–18y: 6.8%; By sex assigned at birth: AMAB 12.3% (N = 10), AFAB 5.8% (N = 8) | |
| Hopkinson and Sharon 2018 | Case report | US | TGD specialist | Clinic patients | 15yo trans boy with prior ADHD diagnosis, probable on evaluation; 17yo trans boy with prior ADHD diagnosis, confirmed on evaluation | n = 2 | Consider factors impacting patient, family, and provider decision-making around accessing desired gender-affirming care in TGD patients with multiple co-occurring psychiatric conditions. | |
| Kaitiara-Heino 2015 | Retrospective chart review | Fin | TGD specialist | EHR data | "Sex reassignment" applicants presenting to 1 of Finland's 2 adolescent gender identity services | n = 47 | 11% (5/47) were currently undergoing psychiatric treatment for ADHD | |

(Continued)

Table 1. (Continued)

| Study | Study design | Country | Perspective | Recruitment method | Participants | Total # (n) | Relevant results |
|--------------|----------------------------|---------|----------------|---|--|---|---|
| Kolbuck 2019 | Cross sectional study | US | TGD specialist | Clinic patients | TGD children/parent dyads | 71 pairs | 21% of the TGD children participants met Child Symptom Inventory diagnostic criteria for ADHD |
| Kuper 2019 | Cohort study | US | TGD specialist | Clinic patients | TGD adolescent/parent dyads | n = 149 adolescents and n = 247 parents/guardians | TGD adolescents reported more ADHD symptoms than their parents observed in them (Cohen's effect size: fathers: 0.45; mothers: 0.43) |
| Strang 2014 | Retrospective chart review | US | TGD specialist | Cases: Clinic patients; Controls: local periodicals and children's programs | DC Metro area children's hospital patients, 6–18yo | ADHD: n = 126 (38 females, 88 males***); Autism: n = 147 (24 females, 123 males); medical/neurodevelopmental disorder (referred) controls: n = 116 (57 females, 59 males); Local control (non-referred): n = 165 (61 females, 104 males) and Non-referred participants in the CBCL standardization: n = 1605 (754 females, 851 males) | Participants with ADHD were: 1) more likely to have parent reported "gender variance"—as assessed by the CBCL—(4.8 %) than those in either the neurodevelopmental disorder control group (1.7 %) or non-referred comparison groups (0–0.7 %), and 2) 6.64 times more likely to repeatedly endorse a "wish to be the other gender" than non-referred controls. |
| Wanta 2019 | Prevalence study | US | TGD specialist | EHR data | Individuals with EHR in any of 26 US health care systems | n = 7,322,050 | EHR-identified TGD persons were more likely to have an ADHD diagnosis (n = 1070; 10%) than assumed-to-be cisgender peers (n = 916,370; 1.7%) |

If at least one author of the study was listed as being based in a gender clinic and/or could be identified from their professional web presence as specializing in TGD health, that study was classified as having authorship specializing in TGD health. Abbreviations in the table are as follows: "US" = United States; "Aus" = Australia; "Eng" = England; "Fin" = Finland; "EHR data" = data extracted from electronic health record database; "TGD" = transgender and gender diverse; "cis" = cisgender; "CBCL" = Child Behavior Checklist; "yo" = year-old. Additional notes important to understanding authors' language are as follows: * of significant concern, defines cis people as "binary men and women" and groups all TGD persons into one "transgender" group; accordingly, only the comparisons with the coalesced cisgender groups are presented here; **: authors assumed all individuals not marked with a diagnostic code signifying TGD status to be cisgender—to avoid confusion around undetermined identities, here such peers are written as "other"; ***, "females" and "males" here, per article language, signifies sex assigned at birth; method of establishment was not specified (presumably based on external genitalia).

than the national reported prevalence for the general population (1.1%). In a much larger sample, Hanna et al. (2019) reported a similar prevalence (though also a much larger intergroup difference) from comparing prevalence of ADHD among hospital discharge diagnoses for EHR-identified TGD individuals ($n=25,233$; 4.1%) compared to assumed-to-be cisgender peers ($n=254,412,130$; 0.4%). In that study, it is unclear whether the hospital discharge diagnoses in that health system listed all EHR diagnoses or only those considered to be contributing to the admission. In another large chart review ($n=7,322,050$), Wanta et al. (2019) found a much higher prevalence of ADHD diagnosis among EHR-identified TGD persons (10%) than assumed-to-be cisgender peers (1.7%).

Four clinic-based studies utilized much smaller-scale retrospective chart reviews. Holt et al. (2016) reported prevalence of ADHD diagnosis among children and adolescents referred to a gender clinic ($n=218$) as 14.6% for 5–11-year-olds and 6.8% among 12–18-year-olds. Two smaller studies (Chen et al., 2016; Kaltiala-Heino et al., 2015) on pediatric patients referred for gender-affirming care ($n=47$ and $n=38$, respectively), found current ADHD diagnosis prevalences of 11% and 15.8%, respectively. Another (Hisle-Gorman et al., 2021) found TGD youth ($n=3754$) significantly more likely than non-TGD siblings ($n=6603$) to have an ADHD diagnosis (29.8% vs. 18.6%; Odds ratio: 1.77). Note, however, that in this study the above average prevalence observed among all participants may be attributable to the high heritability of ADHD (e.g., Brikell et al., 2015; Larsson et al., 2014). Authors did not report independently reviewing the criteria by which an ADHD diagnosis was established prior to documentation in the EHR in any of these four papers.

Some clinic-based studies with smaller participant numbers were able to administer ADHD testing and/or gender questionnaires to verify classification. Kolbuck et al. (2019), in one such study, found that 21% of the TGD children participants ($n=71$) met diagnostic criteria for ADHD. Another (Strang et al., 2014) found that 4.8% of children and adolescents with ADHD ($n=126$) had parent reported “gender variance” (as assessed by the Child Behavior Checklist), which was significantly more prevalent than among the control groups (neurodevelopmental disorder: 1.7%; non-referred groups: 0–0.7%). Those with ADHD were also 6.64 times more likely to repeatedly endorse a “wish to be the other gender” than non-referred controls. In contrast, two studies utilized self-reported gender data and self-reported ADHD diagnosis. Of these, the prevalence of ADHD among TGD persons was notably much higher than in some of the EHR-based studies on adults. Bretherton et al. (2021) reported an ADHD rate of 11% (among $n=928$ TGD participants), compared to 1.1% in that general adult population. Dawson et al. (2017) found TGD adults ($n=54$),

compared to cisgender participants ($n=6673$), were 2.7 times as likely to have ADHD with co-occurring depression, and 3.6 times as likely to have ADHD with both depression and anxiety.

Considerations for clinical care

The four case studies offer specific clinical guidance based around a pediatric or adolescent TGD/ADHD patient vignette. Agana et al. (2019) offers brief guidance on interdisciplinary concerns for caring for TGD adolescents with ADHD from a primary care perspective. Call (2018) provides a chapter on clinical evaluation and management of ADHD and behavioral dysregulation in TGD children. In the same textbook, Hopkinson and Sharon (2018) provide a chapter with two complex cases with divergent outcomes and needs with regards to clinical management to illustrate factors impacting patient, family, and provider decision-making around accessing desired gender-affirming care in TGD patients with multiple co-occurring psychiatric conditions. Christian-Brandt et al. (2021) provide information about family therapy to target ADHD and behavioral dysregulation in gender diverse children.

ADHD/TGD experience

In a clinic-based study, Kuper et al. (2019) found that TGD adolescents ($n=149$) reported more ADHD symptoms than their parents ($n=247$) observed in them (Cohen's effect size: fathers: 0.45; mothers: 0.43). This suggests that even those closest to the TGD/ADHD persons poorly understood their lived experience.

Discussion

Since 2014, 17 primary research articles have been published on the TGD/ADHD intersection, with three published in 2021 alone. The existing data—as reported in 12 studies—unanimously suggest a significantly increased prevalence of ADHD among TGD persons. The extent of and reasons for this increase remain unclear. The majority of these studies originate from facilities or practitioners that focus on the provision of TGD healthcare. No studies explicitly engaged the TGD/ADHD community in defining research questions and/or authorship of the publication, and characterization of TGD/ADHD lived experience remains extremely limited.

In focusing almost exclusively on the etiology of and specific challenges presented by the TGD/ADHD nexus, these studies explicitly approach this area from deficit-framing that posits that both TGD and ADHD can only

be undesirable. This resonates with Shapira and Granek's (2019) and Jackson-Perry's (2020) arguments that attempts to determine a causal relationship between autism and TGD identity constitute epistemological violence and reinforce the idea that gender variance is a symptom of autism.

Future work would benefit from shifting focus to centering TGD/ADHD community members' voices and needs. For example, no studies to date investigated how executive functioning deficits related to ADHD likely disadvantage TGD/ADHD individuals when juggling the many discrete tasks and cognitive abilities required to access gender-affirming medical, surgical, and legal care (Goetz & Arcomano, 2022; James et al., 2016; Pampati et al., 2021; Puckett et al., 2018; Tabaac et al., 2020). Research guiding clinical care and development of non-clinical support resources could be highly beneficial.

As mentioned above, Oswald et al. (2021), while ultimately excluded from this systematic review for not meeting all inclusion criteria, provides a counterbalance to the articles included in it. Specifically, they approach the TGD/ADHD nexus from a "neuroqueer" framework that works to decenter the neurotypical² perspective that ADHD is inherently negative or undesirable. This is complementary with the social model of disability, which posits that it is society that disables an individual, not the individual condition (e.g., Walker, 2021, pp. 60–63). In line with this, Oswald et al. (2021) explicitly included neuroqueer individuals and communities in designing, conducting, and analyzing the study while refusing to use the deficit framing so common in this area. In doing so they offer a model for future exploratory research in the area of TGD/ADHD identity and experience. In particular, their qualitative interviews elicited participants' desire to be perceived authentically with regards to their neurodivergence and gender/queerness and identified the ways in which this desire paradoxically increased their experiences of prejudice and oppression. Oswald et al. (2021) related how participants overcame this by finding empowerment and connection through online community-building. Such findings—which comment on the nuances of struggles and sources of resilience as a neuroqueer individual in a hegemonically cisheteronormative, neurotypical society—were enabled by the exploratory methodology and community engagement throughout the research process.

Limitations

Interpretation of the reviewed studies is subject to several notable caveats based on the manner of data acquisition. Generalizability of the studies conducted in specialized clinics is limited, as these participant populations cannot necessarily be considered representative of the population at large.

There are inherent limitations to any data derived from reviewing patient EHRs for prior diagnosis, rather than on intentional, standardized clinical evaluation of all participants. Such methods fail to count those who received care for ADHD at an outside provider, or had not obtained official diagnosis. Obtaining an ADHD diagnosis can be expensive and may be not available to individuals who are uninsured or underinsured (Bussing et al., 2003; Chung et al., 2019; Stevens et al., 2005). Indeed, TGD individuals are disproportionately likely to be low income and/or under- or uninsured (Carter et al., 2020; James et al., 2016). Research also indicates that TGD persons are less likely to receive ADHD diagnosis and treatment during childhood (Call 2018; Christian-Brandt 2021; Janssen & Leibowitz 2018; Kivalanka et al. 2018). These disparities are likely compounded further among individuals who are also Black, Indigenous, and People of Color, and/or low income whose lived experiences are that they are less likely to receive an ADHD diagnosis or treatment (Bussing et al., 2003; Chung et al., 2019; Coker et al., 2016; Joho, 2021; Shi et al., 2021; Stevens et al., 2005). Similarly, such studies also relied upon individuals having diagnoses such as “gender dysphoria” in order to discern TGD status, and accordingly likely missed TGD individuals who had not sought gender-affirming medical care. Accordingly, TGD/ADHD persons are likely overlooked when researchers consider EHR diagnoses alone.

TGD/ADHD individuals are also more likely to experience stigma related to ADHD and invalidation of gender identity, which disincentivizes presenting for psychiatric evaluation and treatment (Dawson et al., 2017). Focusing on billing codes related to “gender dysphoria” and gender-affirming care can also exclude those who have not sought gender-affirming care and/or felt comfortable discussing gender with their medical providers (e.g., Fix et al., 2020; Friley & Venetis, 2022; Lerner et al., 2021). While current data on TGD/ADHD experiences specifically are limited, ADHD-related executive dysfunction (e.g., Castellanos et al., 2006; Martinussen et al., 2005; Willcutt et al., 2005) likely poses a significant barrier to accessing gender-affirming services—as has been shown for and reported by autistic/TGD individuals (Strang et al., 2021a, 2021c). Lack of access to gender-affirming care was subsequently related to worse mental health and suicidality (Coleman-Smith et al., 2020; Strang et al., 2021a), while accessing GAHT was associated with improving executive functioning among autistic/TGD individuals (Strang et al., 2021b). Similarly, ADHD-related stigma may delay and/or reduce access to gender-affirming care services, which would further confound these data, and the pathologization of gender non-conformity as a symptom of ADHD (or vice versa) may further limit recognition and treatment—both of which been robustly shown for autistic/TGD persons

(e.g., Coleman-Smith et al., 2020; Cooper et al., 2021; Hall et al., 2020; Strang et al., 2018a, 2018b).

Our search methodology was limited by the variability in terminology in the literature used to refer to TGD and ADHD individuals and how understanding of these experiences has changed over time. Accordingly, we may have missed studies that were on this topic, but did not use language that was coherent with our contemporary lexicon.

Conclusion

The existing literature on the TGD/ADHD nexus is young and can be characterized as small and insufficient—with only 17 articles published to date, none predating 2014. The reviewed body of literature on the TGD/ADHD nexus is young, insufficient, and focuses almost entirely on the etiology of and possible problems caused by this overlap. As such it implies that TGD and ADHD are alone, and especially together, problematic. Not surprisingly, this literature has not evidenced any participation from TGD/ADHD individuals in any stage of study design, conduct, or interpretation, though it is possible—and perhaps even likely—that such scholars served in these capacities without explicitly disclosing their community membership in the articles.

There is a clear need for research that approaches TGD/ADHD identity with the aim of exploring the lived experiences and needs of these individuals. Research on how gender-affirming care impacts treatment of ADHD symptoms would also be both welcome and fruitful. Conversely, investigating the impact of ADHD symptoms on gender affirmation journeys would be highly meaningful. Exploration of the specific impact of anti-ADHD prejudice and ableism on TGD people (e.g., Hsu 2022; Rodríguez-Roldán, 2020) would be similarly fruitful.

Overall we encourage future researchers exploring the TGD/ADHD nexus to approach this area with sensitivity and intentionality. TGD/ADHD individuals should be included at all stages of research, including design, conduct, and interpretation. Further its focus should not be limited to incidence, etiology, and prevention, but also cover access to healthcare and positive experiences of TGD/ADHD identity. Ultimately, researchers should always be mindful of just who is included in their research, and who is left behind.

Notes

1. Neurodivergence, as coined by Kassiane Asasumasu in 2000, signifies “having a mind that functions in ways which diverge significantly from dominant societal standards of ‘normal’” (Walker, 2021, p. 38). Since its inception, neurodivergent (sometimes

abbreviated “ND”) has evolved into most common use describing autistic individuals and/or those with Attention Deficit Hyperactivity Disorder (ADHD), though the broad term can include other experiences as well (e.g. depression, dyslexia, personality disorders).

2. Neurotypical, which can be abbreviated “NT” and used as an adjective or as a noun, means “having a style of neurocognitive functioning that falls within the dominant societal standards of ‘normal’” (Walker, 2021, p. 40). Neurotypical is a neutral descriptor counterpoint to *neurodivergent*, similar to how *cisgender* describes those who are not *TGD*.

Ethics statement

This paper is a systematic review and therefore IRB approval was not required or relevant.

Disclosure statement

The authors report there are no competing interests to declare.

Funding

NA is supported in part by funding from the Social Sciences and Humanities Research Council’s Joseph-Armand Bombardier Canada Graduate Scholarship. TGG is supported in part by the NIH grant: R25MH119043 (University of Pennsylvania, Department of Psychiatry).

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Data availability statement

All data are publicly available in the reviewed papers, as cited.

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