The missing clinical guidance: a scoping review of care for autistic transgender and gender-diverse people



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Summary

The co-occurrence of autism and gender diversity has been increasingly studied in the past decade. It is estimated that ~11% of transgender and gender-diverse (TGD) individuals are diagnosed with autism. However, there is insufficient knowledge about appropriate gender-related clinical care for autistic TGD individuals. We performed a scoping review of current clinical guidance for the care of TGD individuals to identify what was said about autism. Clinical guidance documents were searched in PubMed, Web of Science, Google Scholar, Embase, Guidelines International Network, and TRIP medical database, as well as reference mining and expert recommendation. Evidence was synthesised by narrative synthesis, recommendation mapping, and reference frequency analysis. Out of the identified 31 clinical guidance documents, only eleven specifically mentioned the intersection between autism and TGD. Key concepts among the available recommendations included advocating for a multidisciplinary approach; emphasising the intersectionality of autism and gender-diverse experiences during assessments; and—importantly—recognising that autism, in itself, does not serve as an exclusion criterion for receiving gender-related care. However, detailed and practical clinical guidance is lacking due to a gap in evidence. Empirical research into the care experiences and outcomes of autistic TGD individuals using a developmental, lifespan, and strengths-based approach is needed to generate evidence-informed and tailored guidance.

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Introduction

There has been growing recognition of the intersection of gender diversity and autism. Transgender and gender-diverse (TGD) individuals experience gender identities and/or gender expressions that differ from their gender assigned at birth²—we use the phrase here to be as broad and comprehensive as possible. Autism is a neurodevelopmental condition involving challenges

with social-communication alongside restricted-repetitive behaviours and strong needs for sameness and predictability,³ that result in disability particularly in the context of societal barriers.⁴ The co-occurrence of autism and being TGD was first systematically studied in 2010,⁵ and empirical evidence across the clinical and general populations of this above-chance co-occurrence has been accruing since then. Many autistic people^o

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^oWe used identity-first language (as opposed to person-first language) in this paper, to respect the relative majority preference of the English-speaking autistic community at this time.¹

Research in context

Evidence before this study

The scientific community and wider society have increasingly attended to the co-occurrence of autism and gender diversity, yet there has been insufficient evidence to guide the optimal clinical care to meet the unique clinical needs at this intersection. We knew of only one clinical guidance document specifically addressing care for autistic transgender and gender-diverse (TGD) people (i.e., Strang et al., 2018). We searched PubMed and the Cochrane Database of Systematic Reviews for reviews and meta-analyses in any language which looked at the best care and support practices for autistic TGD people, from database inception to September 29, 2023. This preliminary search identified the Strang et al. (2018) and various other guidelines, but no systematic reviews or meta-analyses on this topic.

Added value of this study

To the best of our knowledge, this is the first scoping review that investigates the clinical care guidance specifically for autistic TGD people. We delineate what current clinical guidance is available, the key concepts of which include a multidisciplinary approach, emphasising the intersectionality of autism and gender-diverse experiences during assessments, and recognising that autism, in itself, does not serve as an exclusion criterion for receiving gender-related medical care. We demonstrate where clinical guidance is lacking, and what should be addressed in the future.

Implications of all the available evidence

This review underscores a critical gap in the availability of detailed clinical recommendations for care for individuals at the intersection between autism and TGD. Actively accumulating empirical evidence of the care experiences and long-term outcomes of autistic TGD individuals is needed to improve practical and ethical clinical care quidance.

show higher-than-expected levels of gender diversity,⁶⁻⁸ and there is a higher prevalence of autism and autistic traits in TGD compared with non-TGD individuals.^{9,10} So far, the meta-analytic prevalence of autism diagnosis among TGD individuals is estimated to be about 11%¹⁰—significantly higher than the most inclusive estimate of autism prevalence in the general population (2.76%).¹¹

Despite the increased co-occurrence and growing body of research, there is scant clinical care guidance available for autistic TGD individuals, primarily because the limited amount of long-term outcome studies of TGD people do not distinguish between findings for autistic and non-autistic individuals.12 Despite the continuously growing research,13,14 there are still unknowns in the field of gender care broadly. 15 In general, healthcare considerations should apply inclusively to autistic and non-autistic people. Nevertheless, there are key additional and essential considerations when taking into account autistic people's communication and information processing features as well as the longstanding healthcare inequities that they may have faced, 16 spanning from, for example, the adaptations of anaesthesia care¹⁷ to the adaptations of psychiatric interventions.18 In this context, there are unique clinical challenges and unmet care needs in daily practices for autistic TGD individuals, that may have been observed but overlooked, or that clinicians feel particularly puzzled and uncertain about when providing care, especially considering an individual's developmental and cognitive characteristics and needs.12 Common clinical challenges may include difficulties with self-advocating around gender-related needs, the experience of being TGD being doubted due to co-occurring autism, and the impact of autism on gender expressions (e.g., so-called 'black and white' thinking about gender, not knowing how to obtain and choose appropriate clothing, etc.). To the best of our knowledge, there is only one initial clinical care guidance for this intersection developed by clinician experts—Strang et al., published online in 2016 and in print in 2018 "—which we used as a comparator for the interpretation of the synthesised data in this scoping review given its comprehensive coverage on clinical care issues specifically pertaining to autistic TGD individuals. Due to the high co-occurrence rate of autism and TGD, there is a pressing need for guidance on caring for autistic TGD people to not be restricted to specialists, but to be integrated into generic clinical care for TGD individuals.

This lack of mainstream clinical guidance for autistic TGD individuals is therefore a critically unmet clinical need, exacerbated by the increasing politicisation of TGD identities and polarisation of views on the intersection between autism and TGD. For example, some US states now explicitly mention autism as a reason for restricting gender-related care.²⁰ Thus, it is paramount to incorporate updated research-based and evidenceinformed guidance that considers the best interests of autistic TGD individuals and tailors to their developmental and cognitive needs, in the broader clinical care guidance pertaining to TGD people. We therefore aim to review the current clinical guidance documents relating to the care of TGD individuals that are widely used by practitioners, to explore what-if anything-has been highlighted about the intersection between autism and TGD, while also comparing these mentions with the most comprehensive guidelines so far specifically for autistic TGD individuals.19

Methods

We first ran a preliminary search of PubMed and the Cochrane Database of Systematic Reviews, finding no systematic reviews studying how autism is considered in the guidelines for the care of TGD individuals (see Research in Context). We thus conducted a scoping review on the clinical guidance documents available for the care for TGD individuals, to map what is currently recommended and what is missing about clinical care pertaining to autistic TGD individuals. This scoping review (not pre-registered) was executed using the Joanna Briggs Institute protocol²¹ with findings reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for scoping reviews (PRISMA-ScR).²² A scoping review provides the most appropriate methodology given the need to review a broad, diverse set of clinical guidance to identify and map the knowledge and information gaps.²³ Scoping reviews are often characterised by narrower searches or use in more nascent fields without much pre-existing evidence, as in this case.²⁴ This study was also carried out as a participatory effort, including two autistic coauthors (ZIW and SEK, the former of whom is a physician-intraining and the latter of whom is TGD) to assist in the interpretation of findings and preparation of this report.

Search strategy and selection criteria

Clinical guidelines regarding the broad care and support needs of TGD people were considered for inclusion because they constitute the highest form of healthcare evidence.25 The Institute of Medicine defines a Clinical Practice Guideline (CPG) as 'statements that include recommendations, intended to optimize patient care, that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options.'25 However, we aimed to widen the scope beyond CPGs to any document functionally used or referenced by clinicians in everyday practice. We therefore use the term, 'clinical guidance document' to refer to any document published by a nationally or internationally recognised clinical organisation, professional association, or group of clinical experts using a structured method to develop a consensus of care for a particular group of patients or clients—defined similarly by Douketis and Weitz (2014)26—that we intend to include in this review. This enabled us to also include Position Statements, Service Contracts and 'Blueprints' as these were, in practice, functionally (although not methodologically) equivalent to CPGs. A Position Statement is defined as a document that presents a consensual viewpoint or opinion on a particular issue, while a Service Contract is defined as 'a formal agreement between a commissioner organization and one or more healthcare provider organizations for the provision of patient care services.'27 While there is no universal definition for a clinical guidance 'blueprint', the Health Policy Project 2015 (one of the documents included) define it as 'a comprehensive evidence base on trans health and human rights issues in this region.'28

We excluded clinical guidance documents of which the latest edition was published before 2010; this is when the first systematic study of the co-occurrence of autism and gender diversity was published.5 We also excluded documents which were either too broad (i.e., covered too large a patient population) or too specific or narrow (i.e., covered too small a patient population). For example, documents regarding the care of queer 2SLGBTQI+ individuals more generally were excluded as being too broad, and guidance for a specific type of gender-affirming treatment (e.g., hormone therapy, genital reconstruction) or for special tests in the TGD population (e.g., cancer screening) were excluded as being too specific or narrow (hence unlikely to contain autismrelated recommendations). We also excluded documents that were not originally written in English, those of unclear authorship or origin, and those that did not fit our definition of a clinical guidance document, including reviews, editorials, commentaries, interpretations, general advocacy statements, secondary clinical resources (e.g., UpToDate), and documents published in other forms (e.g., books and booklets) or non-full-text format.

The following databases were searched between July 1 and November 30, 2023, to identify clinical guidance documents published in or after 2010: PubMed, Web of Science, Google Scholar, Embase, Guidelines International Network (GIN), National Institute for Health and Care Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), Canadian Medical Association: Clinical Practice Guidelines Database (CMA Infobase), and TRIP database (a guideline-specific database). The following search terms were used: 'transgender', 'gender diverse', 'gender dysphoria', 'transsexual', 'gender identity disorder', 'gender incongruence', 'gender nonconformity', 'gender variance', 'guidelines', and 'guidance'. The full search strategy was as follows:

 (transgender OR gender diverse OR gender dysphoria OR transsexual OR gender identity disorder OR gender incongruence OR gender nonconformity OR gender variance)

AND

- (guidelines OR guidance)
- Using 'Guidelines' filter (where available)

Filtered by date range: 2010-2023

Further clinical guidance documents were identified through reference mining of identified documents and expert recommendation. During peer-review of this paper, the 'Independent review of gender identity services for children and young people' commissioned by NHS England (i.e., the 'Cass Review')¹⁵ was published with a corresponding systematic review of clinical guidelines by Taylor et al.²⁹; some of these

guidelines were not identified by our initial search but upon detailed review we determined that they met our inclusion criteria. We therefore included eight additional clinical guidance documents from Taylor et al.,²⁹ as well as one additional document suggested by peerreview that we also determined to be meeting our inclusion criteria.³⁰ See Fig. 1.

Following the search, all identified citations were collated and uploaded into Microsoft Excel. Titles and abstracts were screened by two author-reviewers (LB and AIRvdM) for assessment against the inclusion criteria. Potentially relevant sources were retrieved in full and assessed in detail against the inclusion criteria. Reasons for exclusion at this point were recorded and reported. Interrater reliability for abstract and full-text screening was indexed using kappa. Kappa for abstract screening was 0.977, and kappa for full-text screening was 0.915, indicating near-perfect agreement. Note that the Strang et al. (2018) guidelines19 were excluded from the data analyses as they were a priori positioned as the comparator to illustrate the current state of clinical care guidance (for TGD individuals in general) when it applies to autistic TGD individuals (see 'Data synthesis' below). Any disagreements between the two author-reviewers were resolved through discussion with the senior author (M-CL). This process was repeated when the nine additional clinical guidance documents were added during peer-review (with agreement on inclusion for the additional documents being unanimous; they were not included in the kappa statistics above).

Data charting

Data were extracted from the included documents by recording all mentions in the documents of 'autism', 'autistic', 'autistic disorder', 'ASD', 'Asperge*', 'PDD', 'PDD-NOS', 'pervasive development disorder', and 'childhood disintegrative disorder'.

Extracted data included:

- 1. Title of document
- 2. Author(s) of document
- 3. Year of publication
- 4. The intended population age range (categorised into children and adolescents, adolescents or youth, adolescents and adults, adults, or all ages)
- 5. Country or region the guidance is applicable to
- 6. Type of document (CPG, Position Statement, Service Contract, or Blueprint)
- 7. Whether the document mentioned the cooccurrence between autism and TGD
 - If yes, what clinical recommendations were given for serving individuals with the cooccurrence

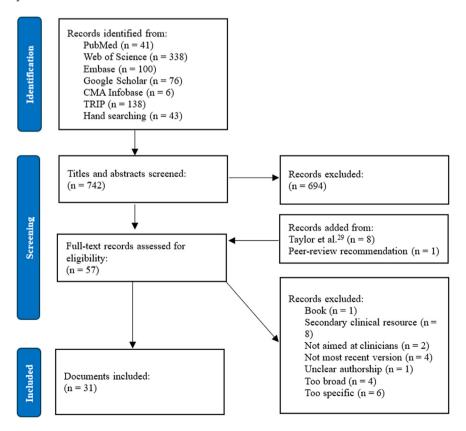


Fig. 1: PRISMA-ScR flowchart.

If yes, what studies were cited as evidence for these recommendations

Data synthesis

Results were synthesised by three complementary approaches. First, we provided a *narrative synthesis* of the data present in the clinical guidance documents,³¹ to identify topics related to autism and set out the currently available mainstream clinical guidance relating to the care of autistic TGD individuals.

Secondly, we conducted a recommendation mapping between the clinical guidance documents and the recommendations in Strang et al. (2018),19 which were previously known to the authors to be the most comprehensive clinical guidelines for the intersection between autism and TGD available to date (which was also confirmed by our preliminary search). Strang et al. (2018) used the Delphi method to obtain consensus among clinician experts to define appropriate clinical care. Here, our recommendation mapping determined which extracted recommendations provided by Strang et al. (2018) were included in the clinical guidance documents, and conversely, if there were any recommendations in the documents that Strang et al. (2018) did not include. Six key, overarching recommendations of the Strang et al. (2018)19 guidelines were identified for comparison with the recommendations of the included clinical guidance documents. Certain sections (Social, Medical Treatments, Medical Safety, Risk of Victimization and Safety, Young Adulthood, School and Employment, and Romantic Relationships) were not mapped here as they were for focused areas; they do include valuable insights which may help to provide targeted therapeutic support, including that the co-occurrence can increase the risk of social isolation, bullying and exploitation, suicidal ideation, stigma at school and in employment, difficulties in romantic relationships (including struggling to understand the implications of failing to disclose their TGD status), and non-adherence with medication. These sections aside, the six key recommendations from Strang et al.19 are paraphrased below:

- 1. Recognise that the prevalence of autism is high within the TGD population.
- 2. Recognise that autism may affect the presentation of gender diversity.
- 3. Screen for autism among referrals for gender-related care.
- 4. Establish an appropriate clinical team with clinicians trained in *both* autism and gender diversity.
- 5. Provide autism-related support and services in tandem with gender assessment, and note their impact on the presentation of gender diversity—for example, assessing whether gender diversity changes or remains stable over the course of autism-related interventions.

Clinicians may need to ensure the assessment process for autistic TGD individuals provides extra psychoeducation, structure for gender exploration, and time.

Results were synthesised by returning to all the mentions of autism in the clinical guidance documents (Appendix Table 1) and, for each document, going through the six recommendations above and recording the findings based on the categories below:

- 1. Blue: The recommendation had been included in detail, e.g., 'autistic children may find it difficult to self-advocate for their gender-related needs and may communicate in highly individualistic ways' (p. S70).²
- 2. Orange: The recommendation had been mentioned briefly (e.g., signposting reference to Strang et al., 2018), indirectly, or generically (e.g., 'associated mental health needs' as opposed to referencing autism directly). Further information is given to explain this mapping.
- 3. Yellow: The recommendation had not been included at all.

Finally, we conducted a *reference frequency analysis* of what studies concerning the intersection between autism and TGD were most cited. This is to provide an overview of the literature landscape and identify the most influential research to date that contributes to the mention of autism in the clinical guidance documents (i.e., what current evidence-base is being drawn from) to inform best care.

Role of the funding source

The funders of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the article.

Results

The initial database search combined with reference mining yielded 742 records. They came from PubMed, Web of Science, Embase, Google Scholar, CMA Infobase, TRIP, and hand searching, with no results found from GIN, NICE, or SIGN. From the screening process, 694 records were excluded, leaving 48 remaining documents. After the initial peer-review of this paper, 9 further documents were added that met the criteria for inclusion (Fig. 1). Full-text screening of these 57 documents further excluded 26 documents. This resulted in 31 eligible clinical guidance documents that were included for final analyses (Appendix Table 1): 20 CPGs, 7 Position Statements, 2 Service Contracts, and 2 Blueprints. The publication year ranged from 2012 to 2023, with the most recent being NHS England's interim service specification for children and young people, updated after the Cass Review interim report (2023),³² and the oldest being the Spanish Society for Endocrinology and Nutrition's guidelines from 2012.³³ All documents were published by international, national, or state-level bodies or committees. They originated from the United States (7), the British Isles (5), Canada (5), Europe (5), Australia (1), New Zealand (1), India (1), the Caribbean (1), South Africa (1), and Other Asia and Pacific regions (1). The remainder (3) were international (i.e., World Professional Association for Transgender Health (WPATH) Standards of Care version 8 (SOC8),² Endocrine Society,³⁴ and Society for Adolescent Health and Medicine³⁵).

Several documents were aimed at all ages (12), while others were for adults (7), children and adolescents (7), adolescents or youth (4), and adolescents and adults (1). Note that the Strang et al. (2018) guidelines (used for our recommendation mapping) are aimed at adolescents. Similarly, in the other documents in which autism was mentioned, it was mostly in reference to children and/or adolescents, either because the guidelines were for children and/or adolescents, or because the mention of autism was specified to be in relation to children and/or adolescents. This is also the case for SOC8,2 the most comprehensive guideline for overall gender-related care to date, that topics related to autism are more prevalent in the chapters pertaining to children and adolescents, and only very briefly mentioned in the chapter for adults. Other documents which did not refer to autism exclusively in the context of children and/or adolescents were Oliphant et al.36 (who refer to 'the transgender community' broadly), the NHS England service specification for adults,³⁷ the American Psychiatric Association (who refer to 'transgender children and adults'),³⁸ and the Danish guideline, which mentions autism under the section, 'Gender reassigning medical treatment on adults'.³⁹

Narrative synthesis

Five key concepts addressed by the included documents were identified (summarised pictorially in Fig. 2):

1. Autism prevalence is high in the TGD population

The co-occurrence of autism and TGD was mentioned in only 11/31 clinical guidance documents, with 7 of these 11 documents either explicitly emphasising it in reference to children and/or adolescents, or having children and/or adolescents as the intended age range. Most of the 11 documents explicitly noted the high prevalence of the intersection—the exceptions being the NHS England service specification for adults³⁷ and Danish guideline,³⁹ which outlined recommendations for the co-occurrence of autism and TGD but did not explicitly mention its above-expected prevalence.

2. Features of autism may complicate the assessment process for gender diversity

Several documents highlighted specifically how autism influences the assessment process. This included three sub-concepts:

A. Autism may affect clinical communication

In 4/31 of the included documents, i.e., SOC8,² Oliphant et al. (endorsed by the Australian and New Zealand Professional Association for Transgender

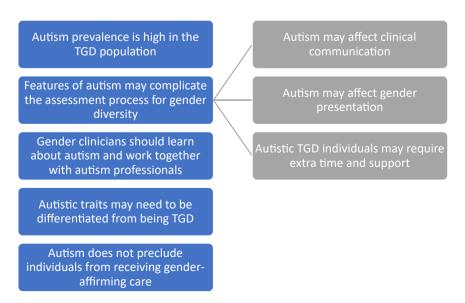


Fig. 2: Overview of key concepts. TGD, transgender and gender-diverse.

Health),³⁶ American Psychological Association,⁴⁰ and NHS England service specification for adults,³⁷ communication challenges were mentioned, for example:

"[A]utistic children may find it difficult to self-advocate for their gender-related needs and may communicate in highly individualistic ways [...] They may have varied interpretations of gender-related experiences given common differences in communication and thinking style. Because of the unique needs of gender diverse neuro-divergent children, they may be at high risk for being misunderstood (i.e., for their communications to be misinterpreted)." (p. S70).²

SOC8 recommends specifically in children that 'relevant developmental factors, neurocognitive functioning and language skills' should be considered during assessment—particularly in the context of autism—in order to make adjustments to optimise an individual child's 'comfort, language skills, and means of self-expression' (p. S72).² SOC8 further specifies that in adolescents, 'Neurodevelopmental differences, such as autistic features or autism spectrum disorder (see Statement 6.1d, e.g., communication differences; a preference for concrete or rigid thinking; differences in self-awareness, future thinking and planning), may challenge the assessment and decision-making process.' (p. S63).²

B. Autism may affect gender presentation

In 6/31 documents, including SOC8,² Oliphant et al.,³⁶ American Psychological Association,⁴⁰ RCHM,⁴¹ National LGBT Health Education Center,³⁰ and NHS England's interim service specification for children and young people,³² it was mentioned that autism can affect an individual's gender presentation. For example, Oliphant et al. note that 'some [autistic] people may express their gender identity non-verbally'³⁶ and SOC8 specifically highlights that clinicians need to differentiate being TGD from autistic 'special interests' or 'rigid thinking', alongside other mental health and developmental issues, during the assessments for recommending gender-affirming medical or surgical treatment for adolescents.²

C. Autistic TGD individuals may require extra time and support

Only 4/31 documents, i.e., SOC8,² National LGBT Health Education Center,³⁰ Oliphant et al.,³⁶ and RCHM⁴¹ mentioned that autistic TGD individuals may require extra time and support during their assessments due to the additional nuances and complexity of their clinical presentations. The National LGBT Health Education Center³⁰ guidance focuses specifically on this, providing a brief list of principles to guide the

support of an individual's gender identity exploration, including:

- 1. "Remain open to each patient's perspective and lived experience; avoid using research findings to invalidate the patient's experience [...]
- Seek to understand the patient's gender identity narrative [...]
- 3. Explore additional perspectives with the patient [...]
- 4. Explore opportunities for community and peer support [...]
- 5. Provide guidance around ways gender can be explored further [...]
- 6. Understand how the patient's gender identity exploration may be part of a broader endeavor of finding one's place in the world [...]
- 7. Recognize that a diverse gender identity can be a source of strength [...]
- 8. Provide psychoeducational, navigation, and social support to patients and families."30
- 3. Gender clinicians should learn about autism and work together with autism professionals

This recommendation was found in 5/31 documents, namely SOC8,² NHS England's interim service specification for children and young people³² and their service specification for adults,³⁷ Oliphant et al.,³⁶ and the American Psychiatric Association.³⁸ These documents suggested that healthcare professionals working with TGD individuals across different age groups receive specific training in autism and/or that they collaborate with autism experts when working with autistic TGD individuals.

4. Autistic traits may need to be differentiated from being TGD

SOC8² specifically mentions the risk of conflating autistic traits with being TGD, in the context of adolescence:

"[I]t is critical to differentiate gender incongruence from specific mental health presentations, such as obsessions and compulsions, special interests in autism, rigid thinking, broader identity problems, parent/child interaction difficulties, severe developmental anxieties (e.g., fear of growing up and pubertal changes unrelated to gender identity), trauma, or psychotic thoughts." (p. S63).²

The Danish guideline also describes 'autism with a special interests [sic]' (presumably with the topic of the interest being gender transitions or the desire to socially and/or medically transition) as an example of 'psychiatric contraindications and precautionary conditions in both medical and surgical gender reassignment treatment'."

5. Autism does not preclude individuals from receiving gender-affirming care

This was only explicitly mentioned by the National LGBT Health Education Center,³⁰ Oliphant et al.,³⁶ and RCHM.⁴¹ Oliphant et al. write:

"It is important to acknowledge that the person presenting is the expert on their own experience. Although some [autistic] people may have difficulty in articulating their gender identity, this should not create an unnecessary barrier to access any relevant gender affirming services."

(p. 23).³⁶

Recommendation mapping

Six key recommendations of the Strang et al. (2018)¹⁹ guidelines were identified for comparison with the recommendations of the included clinical guidance documents (Fig. 3).

Of the 31 documents, 20 documents did not explicitly include any recommendations aligned with Strang et al. Of the 11 documents that did, the main recommendations aligned with Strang et al. were: (1) the recognition that autism prevalence is high in the TGD population; (2) the need to establish an appropriate clinical team with clinicians trained in both autism and gender diversity; and (3) acknowledging that autism may affect the presentation of gender diversity. None of the documents explicitly stated the need to screen for autism in referrals for gender-related care, and only a few included the need to provide autism-related supports in tandem with gender assessment, and to provide extra psychoeducation, structure and time in the assessment period. SOC8 provided the most detailed guidance in relation to autism, directly including relevant recommendations from Strang et al. into its main Statements of Recommendations, for example:

"6.1.d- Receive training and develop expertise in autism spectrum disorders and other neurodevelopmental presentations or collaborate with a developmental disability expert when working with autistic/neurodivergent gender diverse adolescents" (p. S49).²

"7.3- We recommend health care professionals working with gender diverse children receive training and develop expertise in autism spectrum disorders and other neurodiversity or collaborate with an expert with relevant expertise when working with autistic/neurodivergent, gender diverse children" (p. S70).²

It also cited the highest number of papers on the topic (i.e., 11 publications), not counting Strang et al. (2018); this is perhaps unsurprising given that many of the same authors of Strang et al. (2018) were contributors to SOC8. Oliphant et al. and the National LGBT Health Education Center, on the other hand, were more

abbreviated but both included recommendations taken directly from Strang et al. (2018) in some places.

None of the included clinical guidance documents had specific recommendations which were not included in Strang et al. (2018), although the National LGBT Health Education Center³⁰ did extend these recommendations by providing a more practical set of principles to guide clinicians in their conversations with autistic TGD individuals (listed above in 'Narrative synthesis').

Reference frequency analysis

The most cited study, by five clinical guidance documents, was de Vries et al. (2010)⁵ (i.e., the first systematic empirical study of the co-occurrence between autism and TGD), with Strang et al. (2018)¹⁹ (i.e., the clinical guidelines used for our recommendation mapping) being the next most common, cited by four documents. Thirdly, van der Miesen et al. (2016),⁴² a narrative review of the clinical and empirical data related to the co-occurrence, was the next most common, cited by three documents.

Other references on the intersection between autism and TGD cited at least once by the clinical guidance documents include: the Autistic Self Advocacy Network et al. (2016) advocacy statement⁴³; Ehrensaft (2018)⁴⁴; George and Stokes (2018)45; Glidden et al. (2016)46; Hisle-Gorman et al. (2019)8; Jacobs et al. (2014)47; Janssen et al. (2016)⁴⁸; Jones et al. (2012)⁴⁹; Kuvalanka et al. (2018)⁵⁰; May et al. (2016)⁵¹; Nobili et al. (2020)⁵²; Øien et al. (2018)53; Pasterski et al. (2014)54; Shumer and Tishelman (2015)55; Spanos et al. (2021)56; Strang, Kenworthy et al. (2014)57; Strang, Powers et al. (2018)58; Strang, Knauss et al. (2021)⁵⁹; van Schalkwyk et al. (2015)60; and VanderLaan et al. (2015).61 Relatively few studies have been cited across all 31 guidance documents; many of which do not directly provide recommendations for caring for autistic TGD individuals, and a few of which are only tangentially related to the cooccurrence.

Discussion

This is the first scoping review of current clinical guidance documents for TGD people to determine if they have included any guidance regarding the care of autistic TGD individuals—a common intersection. Surprisingly, the intersection between autism and TGD is mentioned only in a minority (11 out of 31) of the included clinical guidance documents. When mentioned, some included further consensual recommendations: advocating for a multidisciplinary approach, emphasising the intersectionality of autism and gender-diverse experiences during assessments, and—perhaps most importantly—recognising that autism, in itself, does not serve as an exclusion criterion to receiving gender-related care. The most detailed

| | | Strang et al. (2018) recommendations | | | | | | | |
|----|--|--|--|---|--|---|--|--|--|
| | | Recognition that autism prevalence is high in the TGD population | Recognition that autism may affect the presentation of gender diversity | Screening for autism among referrals for gender-related care | Establish appropriate clinical team with clinicians trained in both autism and gender diversity | Autism-related supports to be provided in tandem with gender assessment | Provide extra psychoeducation, structure and time in the assessment period if needed | | |
| 1 | Oliphant 2018 (NZ) | | | | | | | | |
| 2 | WPATH 2022 | | | | | "It is critical to differentiate gender incongruence from [] special interests in autism [] Mental health challenges that interfere with the clarity of identity development and gender-related decision-making should be prioritized and addressed." | | | |
| 3 | National LGBT Heath Education Center 2020 (US) | | | Signposting reference to Strang et al. (2018) | | | | | |
| 4 | NHS Children and Young People 2023 (UK; the British Isles) | | | | | | | | |
| 5 | American Psychiatric Association 2018 (US) | | | | | | | | |
| 6 | American Psychological Association 2015 (US) | | | | | | | | |
| 7 | RCHM 2020 (Australia) | | | Signposting reference to | Strang et al. (2018 | 3) | | | |
| 8 | ESSM 2020 (Europe) | | | | | | | | |
| 9 | AAP 2018 (US) | | | | | | | | |
| 10 | Denmark 2018 (Denmark; Europe) | | | | | | | | |
| 11 | NHS Adults 2022 (UK; the British Isles) | | | | | | | | |
| 12 | Endocrine Society 2017 | "GD/gender incongruence may be accompanied with psychological or psychiatric problems [ref to autism-TGD studies]" | | | | | | | |
| 13 | SAHCS 2021 (South Africa) | | | "Comprehensive care should include screening for mental health conditions [] Over half (56%) of TGD clients in this study had a mental health condition, such | | | | | |

Fig. 3: Recommendation mapping. For each document, the authorial/endorsing body, region (in brackets), and mapping across six selected key recommendations from Strang et al. (2018) are given: blue (included in detail), orange (included briefly), and yellow (not included). NZ, New

| | | | l ra .: . | | |
|----|---|--|---------------------------------|--|--|
| | | | as [] autism-spectrum disorder" | | |
| 14 | AACAP 2012 (US) | | | | |
| | AHA 2023 (India) | | | | |
| | BC 2015 (Canada) | | | | |
| | BC 2023 (Canada) | | | | |
| | CPS 2023 (Canada) | | | | |
| | HPP 2015 (Other Asia and Pacific) | | | | |
| | ICGP 2021 (Republic of Ireland; the British Isles) | | | | |
| | NWT 2020 (Canada) | | | | |
| | Ontario 2021 (Canada) | | | | |
| | PAHO 2014 (Caribbean) | | | | |
| | PESTHSIG 2017 (US) | | | | |
| | RCGPNI 2017 (Northern Ireland; the British Isles) | | | | |
| 26 | RCPsych 2013 (UK; the British Isles) | | | | |
| 27 | SAHM 2020 | | | | |
| | SIAMS-SIE- SIEDP-ONIG 2014 (Italy; Europe) | | | | |
| | SSEN 2012 (Spain; Europe) | | | | |
| | SSEN 2015 (Spain; Europe) | | | | |
| 31 | UCSF 2016 (US) | | | | |

Fig. 3: (continue)

guidance is from the WPATH SOC8,² which is likely the most widely used international guideline currently. However, it is crucial to underscore that the majority of the examined guidance documents still exhibit only a fairly superficial overview of these aspects, with a limited range of empirical studies used to support the clinical guidance. They often lack the necessary depth,

practicality, and specificity required for front-line clinicians to effectively navigate the complexities of providing clinical care for autistic TGD people. The Strang et al. (2018)¹⁹ guidelines did highlight the divergence between their Delphi participants when it came to the question of, for example, 'specific criteria for commencing medical interventions'. This observation

Zealand; WPATH, World Professional Association for Transgender Health; LGBT, Lesbian Gay Bisexual Transgender; NHS, National Health Service; RCHM, Royal Children's Hospital Melbourne; ESSM, European Society of Sexual Medicine; AAP, American Academy of Pediatrics; SAHCS, South African HIV Clinicians Society; AACAP, American Academy of Child and Adolescent Psychiatry; AHA, Adolescent Health Academy; BC, British Columbia; CPS, Canadian Paediatric Society; HPP, Health Policy Project; ICGP, Irish College of General Practitioners; NWT, Northwest Territories; PAHO, Pan American Health Organisation; PESTHSIG, Pediatric Endocrine Society Transgender Health Special Interest Group; RCGPNI, Royal College of General Practitioners Northern Ireland; RCPsych, Royal College of Psychiatrists; SAHM, Society for Adolescent Health and Medicine; SIAMS, Italian Society of Andrology and Sexual Medicine; SIE, Italian Society of Endocrinology; SIEDP, Italian Society of Pediatric Endocrinology and Diabetes; ONIG, Osservatorio Nazionale sull'Identità di Genere; SSEN, Spanish Society for Endocrinology and Nutrition; UCSF, University of California, San Francisco.

underscores the urgent need for more practical and detailed guidance, and empirical research to inform the evidence base, for practitioners to deliver care to address clinical needs related to the intersection between autism and TGD. Importantly, we note that research on the care of TGD people, 13,14,29,62,63 including those pertaining to autistic TGD people, 12,64 is continuously growing and quickly evolving but many emerging new studies are not represented in the clinical guidance documents at this time (as shown by our Reference frequency analysis). Upcoming clinical guidance should closely monitor and incorporate the rapidly emerging research and draw from a wide range of knowledge of academics and clinicians in the field, particularly those with experiences with the intersection between autism and TGD (as done in the development of WPATH SOC8), and ensure that a wide range of lived experiences are properly included in developing clinical recommendations so they can be feasible, practical, empowering (e.g., mitigating stigma), strengths-based, and personalisable (e.g., addressing specific executive function needs).59,65,66

Addressing this evidence gap will involve participatory research and longitudinal studies to understand the gender developmental and gender-related care experiences and outcomes of autistic individuals, particularly by life stages as well as local healthcare contexts (which vary widely by regions and jurisdictions). It is noteworthy that the examined guidance documents predominantly focus on adolescents, despite the intersection between autism and TGD being prevalent across the lifespan. 10 This pattern is exemplified in the SOC8,2 in which autism is only very briefly mentioned in the 'Assessment of Adults' chapter, with much more coverage in the 'Adolescents' and 'Children' chapters - a trend mirrored in other examined documents. 40,41 Better evidence-based and evidence-informed clinical guidance will need to be guided by long-term follow-up and outcome studies and adequate inclusion of lived experiences from autistic TGD individuals across different life stages and gender (care) journeys, including those who experience de-transition or re-transition, 67-70 or who report regret in gender-affirming medical interventions (e.g., surgery).71 Furthermore, optimal clinical guidance should transcend interdisciplinarity, extending to interorganisational collaboration, and involve experts specialised in the intersection between autism and TGD. We advocate that the intersection between autism and TGD should not just be treated as a subspecialty topic to be signposted towards, but instead be centred and integrated within more comprehensive, widely read guidelines to enhance care accessibility and quality.

This scoping review has several limitations. First and most obviously, we limited ourselves to autism and did not examine the intersection of gender diversity with other neurodevelopmental or psychiatric conditions. Furthermore, the converse approach, the examination of clinical guidance documents pertaining to autistic

individuals and regarding their gender identities, was not conducted. Second, the recommendation mapping practice was applied across all included clinical guidance documents against Strang et al. (2018)19; while considered the most comprehensive care guidance for the intersection between autism and TGD to date, their recommendations are tailored explicitly to autistic TGD adolescents, making it theoretically less generalisable to clinical guidance documents on adults (e.g., the NHS England service specification for adults).³⁷ However, our clinical opinion is that the six selected recommendations from Strang et al. (2018) summarised and used in this study (Fig. 3) are general considerations and are applicable across the lifespan (especially considering that autism is a neurodevelopmental condition). Third, we excluded clinical guidance documents not written in English, such as guidelines covered by the recent systematic review on gender care broadly,29 i.e., those from Finland,⁷² Norway,⁷³ and Sweden.⁷⁴ This may have limited the breadth of the findings. Fourth, in using the search terms 'guidance' and 'guidelines', and using the 'Guideline' filter when available, we recognise this may be more restrictive than our given broad definition of a 'clinical guidance document'. Finally, our conclusions were limited by the currently scarce evidence-base itself, as the examined clinical guidance documents were based on a small body of empirical literature, which included no long-term follow-up studies to support any intervention or service model for the autistic TGD population (albeit without a grey literature search, and again, limited to documents in English).12

This evidence gap is understandably related to the broader state of evidence in gender care, a heavily debated topic which has been made most public recently by the Cass Review¹⁵ in the UK and the European Society for Child and Adolescent Psychiatry statement (which specifically mentions that autism commonly precedes symptoms of gender dysphoria).75 The Cass Review has some mentions about autism, which acknowledges how autism can alter the presentation and assessment of gender diversity, and recommends assessments for autism and utilising multi-disciplinary teams to integrate expertise about autism. The Cass Review also warns of missing the holistic profile of the individual, including the presence of neurodivergence, in the midst of focusing on gender. We agree with this holistic approach, but also believe that autistic and nonautistic TGD individuals equally deserve access to developmentally informed gender-related evaluations and medical care, as well as social and legal support. In the context of an ever-growing evidence-base in gender care broadly (such as new longitudinal intervention outcomes studies^{76–78} published after the literature review window for the Cass Review), clinical practice should consider published clinical guidance documents as well as practice options informed by the ever-evolving empirical literature. Shared decision-making in gender-

related care for autistic TGD individuals needs to integrate this evolving evidence, to navigate options based on the best interests of the individual considering their rights, values, and autonomy (and accounting for those of one's parents or guardians as age, developmentally, and culturally appropriate). We view that evidenceinformed decision-making should also include all inner experiences, as these inner experiences and clinical care processes also deeply involve human rights and social justice, as noted by the Autistic Self Advocacy Network, National Center for Transgender Equality, and National LGBTQ Task Force (2016): "denying transgender and gender non-conforming autistic people the respect, dignity, and equal access to services that they need can worsen the social marginalization that many of them face. And it can have serious health impacts—and, sometimes, result in tragedy".43 We believe that a holistic approach is highly suitable for placing inner experiences within the existing and growing evidence and weighing possible gender-related treatment options and uncertainties in outcomes together with the individual (and their parents/guardians when appropriate).

Practically, we consider that the SOC8 provides useful medical decision-making guidance (e.g., for informed consent/assent in Statement 6.12.c) that is actually applicable to autistic and non-autistic TGD individuals alike and across broad life stages, beyond adolescence per se: for example, assessing for emotional and cognitive maturity based on one's future-thinking, self-reflective capacity to consider possible changes of gender-related needs and priorities over time, and day-to-day management of care.2 We also want to emphasise that clinicians' awareness of and tuning-in to autism-related thinking and communication styles, autism-informed psychoeducation about the knowns and unknowns in gender-related care and outcomes, as well as extra support, structure, environmental adaptation and time built into care may be necessary to support autistic TGD individuals for gender discernment, self-advocacy, and genderrelated care.12,18,79

In conclusion, while there is an extensive body of research on the co-occurrence rates of autism and TGD, this scoping review underscores a critical gap in the availability of detailed and practical clinical recommendations for optimal care for this intersection, likely due to the limited (despite growing) empirical research and scarce evidence-base to date tailored to the common intersection between autism and TGD. Long-term follow-up studies are urgently needed to fill this lacuna in evidence. Future endeavors should also prioritise the development of clinical guidance that facilitates tailored care for individuals at the intersection between autism and TGD, especially for adults. Notably, our findings should be situated in the broader political contexts of growing legislation banning gender-affirming care in some regions currently,80,81 by which autistic TGD individuals (and those with other

intersecting neurodevelopmental and psychiatric conditions) are particularly affected. Our call to action is therefore intended to advance both ethical considerations and pragmatic solutions for the well-being of this long-minoritised, under-represented, and under-studied population.

Contributors

PS and M-CL conceptualised the study. LB performed the literature search, data collection, analysis, and interpretation, and prepared the first draft of the manuscript. AIRvdM conducted independent data validation. LB, AIRvdM and M-CL accessed and verified the data. AIRvdM and M-CL critically revised the manuscript. PS provided methodological guidance and critical review. SEK and ZJW critically reviewed the manuscript and provided lived experience inputs. M-CL acquired funding support and provided overall supervision of the project. All authors were responsible for the decision to submit the manuscript.

Data sharing statement

Only clinical guidance documents available online were used as data in this report, hence all data used were available through either open-access sources or via institutional access. No additional data were collected from any participants, and no additional documents related to this report have been generated.

Declaration of interests

Dr. Bo has nothing to disclose.

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Appendix A. Supplementary data

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