Neuropsychiatric Disease and Treatment

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REVIEW

Gender Dysphoria: Optimizing Healthcare for Transgender and Gender Diverse Youth with a Multidisciplinary Approach

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Abstract: Transgender and gender diverse (TGD) youth and their families are seeking medical and mental health care at increasing rates. As the number of multidisciplinary pediatric gender programs expands, we consider the history and evidence base for gender affirmative care and highlight existing models of care that can flexibly accommodate the diverse needs of TGD youth and their families. Comprehensive multidisciplinary care includes both medical and mental health providers who work collaboratively with TGD youth and their caregivers to assess gender-related support needs and facilitate access to developmentally appropriate medical and mental health interventions. In addition to direct health-care services, multidisciplinary care for TGD youth and their families extends into community training, education, community outreach, nonmedical programming, and advocacy for TGD youth.

Keywords: transgender, gender diversity, gender-affirming care, multidisciplinary care

Introduction

Transgender and gender diverse (TGD) are terms that refer to individuals whose gender identities or expressions do not conform to culturally defined norms associated with their designated sex at birth. As an increasing number of TGD youth and their families are presenting to pediatric providers for medical and mental health-care services,[1,2] clear guidelines are needed to identify how best to provide effective and comprehensive care for TGD youth. Compared to their cisgender peers, TGD youth experience significant physical and mental health disparities, including higher rates of depression, anxiety, suicidality, substance use and poorer health status,[3–5] which are attributable in part to the effects of gender minority stigma and discrimination[6,7] and lack of access to quality health care.[5,8,9] The presence of these health disparities during childhood and adolescence highlight the need to improve access to high quality and developmentally appropriate health care for TGD youth and their families. There is a growing consensus among professional medical and psychological/psychiatric health organizations that collaborative, multidisciplinary gender affirmative care is an effective way to promote healthy development and reduce stigma and discrimination for TGD youth.[10–13] A multidisciplinary approach to care flexibly accommodates the diverse needs of TGD youth. Medical and mental health providers work collaboratively with parents and youth to destigmatize gender diversity, assess familial and community challenges and support needs, and facilitate access to developmentally appropriate medical and mental health interventions. To understand how multidisciplinary care approaches can optimize health outcomes for TGD youth, it is important to first understand concepts related to gender diversity (Table 1), the development and evolution of gender affirmative care models over time and treatment needs for TGD youth.

Received: 10 October 2022
Accepted: 20 January 2023
Published: 28 February 2023

Table 1 Key Terminology in Gender Health Care

Term	Definition
Cisgender	Describes identifying with the gender corresponding to one's designated sex at birth. For example, a designated female at birth individual identifying as a woman or a designated male at birth person identifying as a man.
Designated sex at birth	The sex label that a child is given at birth most often based on the appearance of the external genitalia but also can include hormones and chromosomes. Most people are designated male or female, and this is what is put on their birth certificate. Of note, more states in the United States now allow for a designation of "intersex" on the birth certificate of children born with variations in chromosomes, hormones, or genitalia that do not fit neatly within binary male-female categories.
Gender	The way cultures categorize and assign social norms to groups of people. These groups are often based on designated sex at birth but understandings of gender vary across time and culture.
Gender-affirming treatment	Medical or surgical treatments that help a person physically change their body to align more closely with their gender identity. Gender-affirming treatments can include puberty blockers, hormones like estrogen or testosterone, and surgery.
Gender dysphoria	A diagnosis introduced in the DSM-5 to capture clinically significant distress associated with identifying with a gender different from the one corresponding to designated sex at birth. A person might feel uncomfortable with their physical body or with the social roles associated with their perceived gender. The experience of gender dysphoria is highly individual and not every gender nonconforming person experiences gender dysphoria.
Gender expression	Cultures often relate physical appearance, clothing choices, accessories, communication patterns, social roles, and behaviors to gender. The way a person uses these gendered items and behaviors is called gender expression. Gender expression is highly individual and may or may not be reflective of a person's other identities.
Gender fluid	Describes a non-binary gender identity that is a dynamic and changing, as opposed to being static. Gender fluid people can move between genders and may or may not use different gender expressions or pronouns at different times.
Gender identity	A person's innate sense of their own gender. This can be the same or different from the gender corresponding to their designated sex at birth. A person could feel like a man, woman, non-binary or agender etc., regardless of their designated sex at birth.
Non-binary	Describes identifying outside of the male-female gender binary. Non-binary can be used as an adjective or an umbrella term encompassing several different gender identities.
Pronouns	Words used to substitute the name of a person. In English language, pronouns are gendered and can be an important part of someone's gender expression. Using the appropriate pronouns for somebody can be a way to affirm their gender identity.
Transgender	Describes not identifying with the gender corresponding to one's designated sex at birth.
Transition	Changes a person makes to their appearance, behaviors, or body to affirm their gender identity. There are different types of transitions. A social transition can include changing one's appearance or asking others to use a different name and/or pronouns. A legal transition can include changing one's name and gender marker on government issued documents, like a birth certificate. A medical transition can include using gender-affirming hormones to induce physical changes which affirm one's gender identity. Surgeries?
Transphobia	On an internalized level, transphobia refers to the shame or discomfort experienced by TGD people as a result of internalizing stigmatizing messaging. On interpersonal and systemic levels, transphobia can refer to the harassment and discrimination of people based on their perceived gender identity. TGD people experience transphobia in different forms, ranging from internalized self-hatred and bullying to discrimination in medical and legal settings.

Gender Diversity

Gender identity refers to a person's internally held sense of self as being female, male, a blend of female or male or an alternative gender.[14] Gender identity is conceptually distinct from designated sex at birth, though these concepts are often incorrectly conflated due to cisnormative assumptions that that sex is binary and immutable and sex designated at birth determines gender.[15] "Male" and "female" sex are designated at birth typically based on the appearance of external

genitalia. In cases in which there are variations in chromosomal, gonadal or phenotypic sex characteristics (ie, a difference of sex development or "DSD" or intersex variation) a child is still typically designated male or female, though increasingly there are options to designate a nonbinary gender marker at birth.[16] The term "cisgender" describes people for whom gender identity aligns with designated sex at birth and "transgender" refers to people for whom gender identity differs from designated sex at birth. Transgender is an umbrella term that includes individuals who identify as transgender men, transgender women, nonbinary, agender, gender fluid, genderqueer or gender nonconforming, or otherwise not cisgender. These terms are not exhaustive and reflect the many ways in which people experience and describe their gender. For nonbinary youth in particular, the expectations and experiences associated with exclusively binary male or female identities may not reflect how they experience their gender.[17] The term nonbinary can be used to describe a gender identity that is neither male or female; includes a blend of male and female; moves between genders (eg, genderfluid); exists beyond the gender binary (eg, genderqueer) or reflects an absence of gender (eg, agender). Individuals may experience their gender identity as fixed or fluid, and gender fluidity may be a consistent experience or a component of gender exploration.[17]

Gender expression refers to how individuals choose to present themselves including through clothing, hairstyles, physical appearance and behavior. Gender expression can also be fluid and may not align with cultural norms associated with designated sex at birth or gender identity (eg, boys wearing dresses). As terms to describe gender continue to evolve and people may use multiple terms to describe their gender identity, it is best practice for providers to ask people to share the language they use to describe their gender rather than make assumptions about a person's gender identity based on appearance or behavior.

Gender identity diversity is observed throughout history and across cultures as a normal, nonpathological aspect of human diversity.[18,19] Our knowledge about the true size and demographics of the TGD population in the United States (US) is limited because, historically, national surveys rarely included questions about gender identity. As population-based surveys in recent years have assessed gender identity more systematically, we can estimate somewhere between 0.7%[20] to 9.2%[21] of high-school aged students and between 0.04%[22] and 0.6%[23] of adults identify as TGD in the US. The range in reported prevalence rates reflects differences in samples and survey methods used to distinguish between cisgender and transgender people. There are two general approaches to collecting data on gender that are transgender-inclusive: using one-step measures that ask a single question to identify transgender people or using two-step measures that include one question about designated sex at birth and a second question about gender identity. One-step measures (eg, "Do you consider yourself to be transgender?") may simultaneously produce false positives from cisgender respondents who do not understand the question and exclude respondents who are not cisgender but do not identify explicitly as transgender.[15] The two-step method helps to accurately enumerate both transgender and cisgender people by distinguishing between designated sex at birth (eg, "What sex were you designated at birth on your original birth certificate?") and current gender (eg, "What is your current gender?") and providing response options for people who use terms outside of the gender binary. Also, sex traits and gender characteristics (gender identity, gender expression, social and cultural expectations about gender) may change over time and two-step methods help to capture the complexity and fluidity of these concepts.[15] In 2017, the Youth Risk Behavior Survey (YRBS) generated the first nationally representative prevalence estimate of US high school students who were identified as "transgender" (1.8%).[24] Because some TGD youth may not describe themselves as "transgender", this estimate likely underrepresented the prevalence of TGD youth. Notably, a modified version of the YRBS survey using a two-step method in 2018 found 9.2% of high school students in a racially and ethnically diverse urban school district reported incongruence between their designated sex at birth and gender identity.[21]

Improvements in measurement and data collection explain only part of the observed increase in prevalence of TGD youth. In the last half century shifts in social and cultural expectations about gender identity and expression, combined with major changes in the political and legal status of LGBTQ+ people have increased both the visibility and acceptance of gender diversity. Today, TGD youth may feel less pressure to conceal their gender identity or conform to a binary conception of gender than in past decades. Even in state-level population-based surveys using imprecise one-step measures, the estimated prevalence of youth ages 13–17 who identify as transgender increased from 0.7%[23] to 1.4%[20] from 2017 to 2022. These surveys also found a higher prevalence of American Indian Alaskan Native (AIAN), Hispanic/

Latinx, Black and multiracial youth (1.8%, 1.8%, 1.4%, and 1.5%, respectively) identified as transgender compared to White (1.3%) and Asian (1.0%) youth[20] reflecting important variability in gender diversity across race and ethnicity. The racial and ethnic differences are not statistically significant but are consistent with findings from other population-based samples that individuals from AIAN, Latinx and biracial/multiracial groups appear more likely than White people to identify as transgender. Overall, the increased prevalence of gender diversity among youth is likely attributable to multiple factors including improved precision in gender terminology (eg, inclusion of nonbinary as an answer option in surveys) and assessment methods, and cultural shifts in social norms about gender identity and expression.

History of Pediatric Gender Health Care

Historically, variations in gender identity were considered pathological and attributable to a mental disorder. Based on diagnostic criteria in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM), individuals describing a persistent "stated desire" to be another gender and "persistent repudiation of" primary sex characteristics were diagnosed with gender identity disorder (GID).[25] With gender dysphoria (GD) replacing GID in the DSM-5, the diagnostic focus shifted from nonconforming behavioral expressions or identities relative to designated sex at birth per se to clinically significant affective distress stemming from gender incongruence.[26] Distress comprises discomfort with primary or secondary sex characteristics but also includes a strong desire to express oneself or be seen as by others as gender that differs from designated sex at birth. The GID diagnosis focused on a person's nonconforming identity and behaviors whereas the GD diagnosis focuses on distress related to gender incongruence. This shift emphasizes that gender is an aspect of a person's identity and that being TGD is not inherently pathological and does not constitute a mental disorder. The DSM-5 recognizes that not all gender diverse people may experience gender dysphoria or distress related to their gender incongruence. However, among those that do experience dysphoria, psychosocial or medical interventions to support gender affirmation may be considered.

Multidisciplinary care for TGD youth has evolved significantly over the past 50 years in response to changing interpretations of gender diversity and accumulation of data over time (see Figure 1). Historical approaches to care were situated in the belief that transgender identities are pathological in nature and associated with poor quality of life and psychosocial outcomes, develop in response to psychosocial factors, and are malleable in childhood. Thus, such corrective or "reparative" approaches were primarily situated in psychiatry and psychology disciplines with treatments focused on discouraging gender-nonconforming behaviors and encouraging and reinforcing gender-normative behaviors relative to designated sex at birth.[27] Social and medical transition were only considered after persistent attempts to change transgender identity failed and patients reached adulthood. Physicians providing medical and surgical interventions to adult patients sought to prevent patient regret, legal liability and public backlash by gatekeeping access to hormone therapy and surgical interventions to those patients who completed comprehensive assessments by psychiatrists,

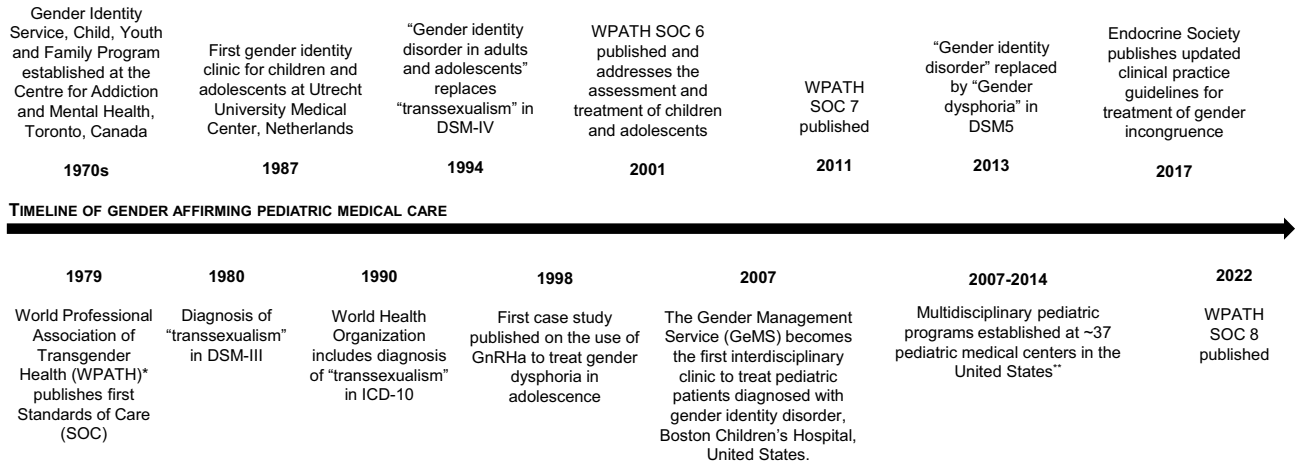

Figure 1 Timeline of gender-affirming pediatric medical care.
Notes: *Known as the Harry Benjamin Gender Dysphoria Association until 2011; **From Hsieh & Leininger, 2014.

psychologists, and other mental health providers and were deemed likely to successfully "pass" by normative, binary standards of gender expression and who were required to have "real-life experience" living full-time in their identified gender.[28,29]

The Dutch were pioneers in medical treatment for TGD youth.[30] Their approach emerged from shifting beliefs about transgender identities, including increased recognition of the role biological factors may play in transgender identity development (in contrast to the earlier focus on psychosocial factors) and an understanding that gender diversity is not inherently pathological. The Dutch approach also emphasized that transgender identities that persist into adolescence are unlikely to change, and thus, medical treatments designed to reduce gender dysphoria and increase gender congruence can optimize psychosocial outcomes. Central to this "wait and see" approach was more protracted assessment periods to ensure transgender identity persisted into adolescence prior to referral to medical specialists for pubertal suppression treatment.

Over the last decade, we have seen a significant shift in approach to pediatric transgender healthcare with the gender affirmative model widely adopted as preferred practice, particularly in the United States.[19,31,32] Central to this paradigm shift away from pathologizing gender diversity is the recognition and appreciation of gender diversity as normal variations on human diversity and centering youths' autonomy to live authentically, including support for social gender transitions at any point in a young person's gender journey and medical/surgical interventions to reduce gender dysphoria following pubertal onset.

Gender Affirmative Care

The gender-affirmative care model (GACM) focuses on supporting individuals to live authentically without privileging any outcome other than prioritizing emotional well-being.[19] This approach to care is necessarily collaborative and individualized, and recognizes there is no "right way" or single trajectory for TGD youth exploring non-medical and medical interventions.[17] Psychosocial interventions may include support around gender exploration, critically interrogating how one's socialization and understanding of gender roles and norms may impact their understanding of their gender. In cases in which gender dysphoria is present, whether related to discomfort or distress with one's gendered body or how others perceive and interact with them out in the world, gender-affirming interventions may include those that support people to present publicly as their authentic selves as a means of reducing gender dysphoria. These gender-affirming interventions comprise those that are non-medical/social in nature and those that are medical/surgical in nature, and typically are presented as options in a staged manner with "reversible" interventions offered first, prior to "partially irreversible" and "irreversible" treatments.

Social interventions are generally considered reversible and involve transitioning to live in line with one's gender of experience rather than the gender presumed based on designated sex at birth. Research suggests that prepubertal children who make a binary social gender transition (ie, from boy to girl or girl to boy) have developmentally normative levels of depression and only minimally elevated levels of anxiety based on both parent-report[33] and self-report.[34] As puberty progresses, non-medical interventions such as chest binding, tucking, voice therapy and hair removal are options that can help TGD youth explore their embodiment goals. Among older TGD adolescents and young adults, chosen name use in more contexts (ie, home, school, work, with friends) is associated with lower depression, suicidal ideation, and suicidal behavior, and these mental health symptoms are lowest when youths' chosen name is used in all four social contexts.[35]

Medical and/or surgical interventions available to treat gender dysphoria vary based on a youth's age, developmental stage, and individualized treatment goals.[10,11] These treatments typically require that youth have a substantiated diagnosis of gender dysphoria, a demonstrated capacity to understand the reversible and irreversible effects of the desired treatment, and accurate and appropriate expectations with respect to treatment outcomes. For minors, support from a consenting parent or legal guardian also is required. Youth in the early stages of puberty may be treated with gonadotropin-releasing hormone analogues (ie, "puberty blockers") which suspend pubertal progression and halt development of undesired, gender incongruent secondary sex characteristics. Puberty blockers are considered reversible as they do not induce any permanent changes to the body and are intended to provide additional time for youth to mature and consider, along with their parents and treatment team, whether additional medical and/or surgical interventions are aligned with their embodiment goals. Emerging evidence suggests puberty blockers improve some aspects of mental

health among TGD youth, though results are mixed. Three longitudinal studies have been published.[36–38] In one study, the proportion of TGD youth scoring in the clinical range for overall emotional and behavioral problems decreased from 44% to 22% with puberty blocker treatment.[37] A second study reported that TGD youth who were treated with puberty blockers had better psychosocial functioning as measured by overall clinical impression one year following treatment initiation compared to TGD youth receiving psychosocial support alone.[36] A last study reported no change in overall emotional and behavioral problems between baseline and 12-, 24-, and 36-months following initiation of puberty blockers[38] There has also been a cross-sectional study that found TGD youth treated with puberty blockers had fewer overall emotional and behavioral problems than gender clinic-referred, untreated youth.[39]

For adolescents in the later stages of puberty, treatment with gender-affirming hormones (GAH; ie, testosterone, estrogen) will induce desired, gender congruent secondary sex characteristics, such as facial and body hair growth and voice deepening (mediated by testosterone) or breast development (mediated by estrogen). GAH are considered partially irreversible because some of the physical changes induced by testosterone and estrogen are reversible (eg, fat distribution), whereas other physical changes are irreversible (eg, breast development; voice deepening). There have been five United States-based studies that have prospectively examined psychosocial outcomes of GAH.[40–43] Three of these studies reported improvements in depression,[40,42] anxiety,[42] body dissatisfaction,[42] suicidality,[41] and general well-being[41] following 1 year of treatment. A fourth study examined 104 youth and over a 1-year period, 69 of these youth received puberty blockers, GAH, or both. While they did not find improvements in mental health functioning over time, when comparing youth who received treatment to those who did not, authors found a 60% lower odds of depression and 73% lower odds of suicidality among treated youth.[43] The only study to look at longer term psychosocial outcomes reported significant improvements in depression, anxiety, positive affect, and life satisfaction following 2 years of GAH treatment and found that improvements in these domains were significantly associated with increasing appearance congruence.[44]

Surgical interventions may include breast/chest surgery (eg, breast augmentation; mastectomy with chest contouring), genital surgery involving removal of undesired reproductive organs (eg, orchiectomy, hysterectomy, oophorectomy), or surgical construction of desired genital anatomy (eg, vaginoplasty, phalloplasty/metoidioplasty), and other non-genital, non-chest surgical interventions (eg, facial feminization surgery, tracheal shave). Most surgical interventions are offered only to adults,[10] but chest masculinization surgery is a notable exception available to adolescents experiencing significant and impairing chest dysphoria who desire chest surgery and have parental support and consent.[45] A recent multicenter, prospective, control-matched study showed that gender-affirming chest masculinization surgery was associated with significant improvement in chest dysphoria, gender congruence, and body image satisfaction 3-months post-surgery and that surgery was associated with low complication rates.[46]

Professional Guidelines and Standards of Care

When engaging TGD youth and their families in shared decision-making about medical interventions, health-care providers rely on the World Professional Association of Transgender Health (WPATH) Standards of Care (SOC)[10] and the Endocrine Society Clinical Practice Guidelines.[11] The WPATH SOC version 7 specify that a young person with a pattern of gender nonconformity and diagnosis of gender dysphoria may be eligible for puberty blockers as soon as pubertal changes have begun (Tanner Stage II) and for GAH at age 16 with the caveat that initiating hormone therapy prior to age 16 may have psychosocial benefits for TGD youth. For surgical interventions, such as vaginoplasty, phalloplasty and chest surgery, it is recommended that patients should be the age of majority (ie, age 18 in the United States) and there is a similar caveat that chest surgery prior to age 18 may be beneficial. The guidelines emphasize that withholding interventions for adolescents is not a neutral option and may exacerbate gender dysphoria and contribute to gender minority stress experiences, and mental health distress.

Both the SOC and Endocrine Society Guidelines recommend that TGD youth seeking to initiate puberty blockers or GAH complete a comprehensive biopsychosocial assessment prior to initiating medical treatment. The purpose of the assessment is not to evaluate or confirm a young person's gender identity but to help youth and their caregivers navigate shared decision-making about gender-affirming medical interventions. The assessment process is completed by a mental health provider who works with TGD youth and caregivers to (1) explore a young person's understanding of their gender

identity and their embodiment goals; (2) assess overall mental health functioning and criteria consistent with a diagnosis of gender dysphoria; (3) ensure the patient and caregivers understand the reversible and irreversible effects of the desired treatment and demonstrate appropriate expectations for treatment outcomes; and (4) confirm caregiver support and consent for treatment. Gender-affirming medical and surgical interventions may affect future fertility,[47] therefore, discussions with medical and mental health providers about potential fertility loss and options for fertility preservation are a component of the comprehensive biopsychosocial assessment.[48,49] The process can also be an opportunity for mental health providers to promote and build caregiver capacity for acceptance and support and offer referrals for ongoing mental health supports, if needed. Typically, mental health providers write a letter to summarize the assessment process to share with medical providers prescribing puberty blockers or GAH.

The recently released WPATH SOC Version 8 is largely the same as SOC 7 with a few changes related to the assessment process for TGD youth.[50] The new SOC no longer require a mental health provider to complete the comprehensive biopsychosocial assessment prior to initiating gender-affirming medical interventions. Rather, a health-care professional (HCP) with (1) at least a master's degree (or equivalent), (2) competencies in assessing TGD individuals and (3) relevant training and familiarity with the World Health Organization's International Classification of Diseases (ICD) for diagnosis can complete the comprehensive biopsychosocial assessment of TGD youth seeking medical interventions. In place of specific age requirements for initiating medical interventions, SOC 8 now emphasizes the patient's maturity level as it relates to their capacity to make an informed decision about medical interventions. Though SOC 8 suggests any health-care professional (ie, physician, nurse practitioner) with the necessary competencies can complete the assessment described, the guidelines highlight mental health providers as the most appropriately trained to do so. Notably, mental health providers can dedicate the clinical time required to meet collaboratively with youth and caregivers (both together and separately) to gather information about the youth's gender identity development, psychosocial development and functioning, including diagnostic assessment of co-occurring mental health and/or developmental concerns, embodiment goals for treatment and capacity for decision-making.[50]

The authors of SOC 8 note a clinical benefit for TGD youth who receive care from multidisciplinary teams including relevant disciplines (eg, primary care, adolescent medicine, endocrinology, psychology, psychiatry, speech/language therapy, social work, surgery, and support staff).[11,42,51] The delivery and access to gender health specialist and multidisciplinary teams varies globally; the resources and personnel required to staff a multidisciplinary program are not available in all pediatric academic medical settings let alone community-based care settings. Recognizing that not all TGD youth and families are in positions to access multidisciplinary care (eg, due to geographical location, high demand for care and long waitlists) the SOC 8 clinical recommendations explicitly state that it is not required for all disciplines to be represented on a multidisciplinary care team for youth to access timely gender-affirming medical care.

Current State of Pediatric Multidisciplinary Care

Thegender affirming care model includes integrated medical, mental health and social supports for TGD youth and their families and serves as a framework for multidisciplinary care. Broadly, the goals for care include respecting patient's affirmed gender identity, collaborating with youth and their caregivers to make informed health-care decisions, and adhering to evidence-based standards of care.[52] Though most multidisciplinary teams include adolescent medicine or endocrinology, nursing, and psychology and/or social work professionals, the structure and implementation of care varies across programs. A primary distinction between programs is the timing and degree of involvement from clinic-based mental health providers in assessment, treatment planning and ongoing therapy. The goal is to balance the tension between access to gender-affirming mental health care and finite availability of clinic-based mental health providers with specialized gender health training. We categorize the different models of care described in the literature based on the role of mental health providers in multidisciplinary care. The first model is a mental health-led model in which patients meet first with a clinic-based mental health provider for a comprehensive assessment. These programs offer targeted, clinic-based mental health services exclusively for the comprehensive biopsychosocial assessments required to initiate pubertal suppression and hormone therapy. Ongoing therapy is not clinically indicated for all patients seeking gender-affirming medical interventions, therefore multidisciplinary programs do not require a patient be engaged in therapy for a specific length of time before initiating medical care. For programs that rely on clinic-based mental health providers to complete

comprehensive biopsychosocial assessments, patients who need ongoing mental health treatment will be referred to community-based providers.[52] The second model is a hybrid approach that relies on both clinic-based mental health providers and community-based mental health providers to complete comprehensive biopsychosocial assessments for medical interventions[48] Programs with hybrid models reduce delays in accessing medical care for patients who are already engaged with a gender-affirming community mental health provider. These patients can complete the comprehensive biopsychosocial assessment with their community-based provider rather than waiting to be seen by the clinic-based mental health provider. The third model is the informed consent model, which does not include a comprehensive biopsychosocial assessment or require that adolescent patients work with a mental health provider prior to initiating medical interventions. The informed consent model is proposed in the literature as a hypothetical alternative to mental health-led and hybrid models and, to our knowledge, there are no publications describing the implementation of this model with pediatric patients.

The health-care needs of TGD youth and their families seeking care from multidisciplinary programs are variable. Based on the literature describing the models of care in different multidisciplinary programs, patients and their caregivers establish care by first completing an intake call with a social worker who gathers information about pubertal development, gender history and psychological functioning in order to determine urgency for medical interventions. In both the clinic-based mental health provider model and the hybrid health-care model, these initial intake calls are an opportunity to address the high demand for services, match patients with appropriate treatment, and quickly provide community support services, community mental health referrals and psychoeducation about care options before the first visit. As described below, the pathway to initiate gender-affirming medical interventions after the initial intake call varies depending on whether there are flexible points of entry for care through multidisciplinary clinic sessions[48] or patients are required to meet with a clinic-based mental health provider before meeting with medical providers.

Mental Health-Led Model

Programs that rely on clinic-based mental health providers for comprehensive biopsychosocial assessments typically require that patients and their caregivers first meet with the psychologist, psychiatrist or licensed clinical social worker to complete a comprehensive psychological evaluation before being referred to a medical provider.[49,52] Patients who wish to initiate pubertal suppression or GAH meet with the psychologist in a multi-hour appointment that includes interviews with patient and caregivers and a battery of psychosocial and gender-related measures. For a program with a primary goal of providing medical interventions to TGD adolescents diagnosed with gender dysphoria, prepubertal children are referred to community providers for assessment and ongoing therapy, as needed. These programs do not provide ongoing mental health services to TGD youth and their families but will refer families to community-based mental health providers. If there is a clinic-based psychiatrist, they may provide psychopharmacological treatment where needed.[52] The results of the comprehensive assessment are reviewed with the multidisciplinary team and patients will begin hormone therapy if they demonstrate persistent gender dysphoria, stability in co-occurring mental health symptoms, the cognitive and emotional capacity to engage in shared decision-making about medical interventions, and the caregiver consents to initiating hormone therapy. After the comprehensive biopsychosocial assessment is complete, the patient and family meet with the medical provider to complete a medical history, review the anticipated effects of GnRHa or GAH, and potential risks and side effects. Once patients initiate treatment, they are seen for medical and psychiatric follow-up every 3–6 months to monitor the effects of hormone therapy. Though clinic-based mental providers do not see patients on an ongoing basis, TGD youth and their caregivers are encouraged to engage in ongoing care with community-based providers as needed to address co-occurring mental health issues and to help caregivers.

Hybrid Clinic- and Community-Based Mental Health Provider Model

Programs with a hybrid model offer flexible points of entry for youth who are accessing care based on the individual needs of the young person and their family.[41,48] A hybrid mental health model for multidisciplinary gender care does not require patients to be seen by a clinic-based mental health provider for the comprehensive biopsychosocial assessment if they have an established gender dysphoria diagnosis and a referral from a community mental health provider. In this model, a patient's community mental health provider may refer the patient directly to multidisciplinary team or

endocrinology to begin GnRHa or GAH.[41] This approach is designed to prevent delays in medical care for patients who would otherwise need to wait for the clinic-based psychologists to complete an evaluation. Hybrid program models do not require that comprehensive biopsychosocial assessment for gender-affirming medical interventions be completed by program-based mental health providers, but may offer these options for patients who are not engaged in care with a community-based provider.[48]

In some hybrid programs, all patients are seen once by a clinic-based mental health provider together with a medical provider during multidisciplinary clinic sessions. The joint session allows patients to share their treatment goals, gender history and psychosocial functioning once with the multidisciplinary team and facilitates collaboration between medical and mental health providers over the course of treatment. The session is not a comprehensive biopsychosocial assessment for medical care, but rather an opportunity to provide individualized treatment recommendations and resources based on the patient's reported needs. These visits may include broad psychoeducation about gender development and gender diversity, supportive and affirming parenting practices (eg, use of name and pronouns) and specific information about medical interventions. . Treatment recommendations may include establishing care with community- or clinic-based mental health provider to help the youth and their caregivers engage more effectively in shared decision-making about social or medical transition steps, and to promote affirming parenting practices.[53] For youth and families interested in starting GnRHa or GAH, the treatment recommendations may include follow-up with the medical provider (to complete a comprehensive medical history and psychoeducation regarding the effects of GAH, timeline of changes, and side effects associated with hormonal therapy) and with a community or clinic-based mental health provider (to complete the comprehensive biopsychosocial assessment).

In other programs, only patients without community mental health providers will be seen by clinic-based mental health providers, who administer standard, baseline clinical measures, questionnaires and screening tools to assess mental health functioning (eg, caregiver support) and gender-related issues (eg, gender minority stress and resilience).[41] Patients with community-based mental health providers can be referred directly to meet with a medical provider alone or in multidisciplinary clinic sessions. Depending on the community-based mental health provider's experience working with TGD youth and their families, they may be comfortable conducting a comprehensive biopsychosocial assessment if the patient is ready to initiate GAH. Community-based mental providers vary in their levels of comfort and expertise with comprehensive biopsychosocial assessments and gender-affirming care for TGD youth and their families. With patient permission, consultation with clinic-based mental health providers is a valuable way to increase access to care and build capacity among community providers who are already working with TGD youth. Paired with educational resources (eg, patient education handouts, peer-reviewed articles about gender-affirming care), consultation calls with clinic-based providers may focus on gender identity, social and medical transitions, strategies for engaging youth and caregivers in shared decision-making conversations, and components of the comprehensive biopsychosocial assessment. These consultations are an opportunity to counteract misinformation about gender-affirming care and help community providers address caregivers questions and concerns.

Other programs have introduced single-session nurse-led assessment clinics as the clinical entry point with biopsychosocial assessment, hormone education and support provided for TGD youth and their families during a 90-minute consultation.[54] These consultation sessions split time alone with the patient for biopsychosocial assessment to identify risk and protective factors and joint consultation with patient and caregivers providing local community support services, mental health services, peer support groups, and services relevant to TGD populations. This model is used to tailor interventions to meet the needs of the TGD youth (eg, immediate provision of menstrual suppression using oral contraceptives for TGD youth designated female at birth). The nurse can provide information on medical interventions, answer questions, prepare youth and caregivers to begin multidisciplinary assessment for medical interventions, and empower young people to access community-based supports earlier. These single-session consultations increase access to care and help fast-track patients requiring urgent care to be seen for multidisciplinary assessment sooner than would otherwise happen.[54]

Informed Consent Model

The informed consent model is an alternative to models that require a comprehensive biopsychosocial assessment prior to initiating medical interventions. In an informed consent model, a medical provider discusses a patient's history and care goals, provides education about the medical treatment, ensures patient understanding and reviews consent detailing the effects of treatment before prescribing GAH.[33] A patient would not be required to meet with a mental health provider or obtain a letter of support before initiating pubertal suppression or GAH. Instead, individuals can access hormones after completing hormone education and reviewing treatment consent in a single appointment with a medical provider. For TGD adults, the informed consent model is the standard of care and existing data for adults suggest low rates of regret.[55] Advocates for an informed consent model for adolescents highlight how requiring a comprehensive biopsychosocial assessment and letter of support is a potential financial and logistic burden, particularly when there are a limited number of mental health providers who are adequately trained in gender affirming care.[56] For some youth, both finding and waiting to establish care with a mental health provider to complete the comprehensive biopsychosocial assessment can substantially delay medical care contributing to health-care inequity for TGD individuals. Furthermore, concerns have been raised that requiring a letter of support from a mental health letter puts clinicians in a gatekeeper role that is not conducive to open and honest discussions about potential questions, concerns, or ambivalence about gender-affirming medical or surgical treatment.[56]

Broader concerns about the role of mental health providers in gender-affirming care are grounded in a history of harm perpetrated by providers who pathologized gender non-conforming behavior and attempted to dissuade gender variance in childhood through behavioral reinforcement and punishment techniques (ie, gender identity change efforts or "GICE").[28] Shifting to an informed consent model that does not require a letter of readiness from a mental health provider can increase access to gender-affirming medical care; however, the tradeoffs in terms of long-term mental health outcomes and satisfaction with medical transition are unclear. The most robust longitudinal data on the outcomes of gender-affirming medical and surgical interventions come from clinical models that include a comprehensive diagnostic assessment process across multiple sessions with a mental health provider over time before initiating medical interventions.[37,57]

Given the well-documented mental health disparities experienced by TGD youth relative to their cisgender peers,[58] it is important to focus on care models that increase access to evidence-based, gender-affirming healthcare which includes medical and mental health providers with adequate training in culturally responsive care practices for TGD youth and their families. The health-care needs of TGD youth and their caregivers vary—not all TGD youth need ongoing mental health treatment—however, it is clear that well-informed mental health providers can be critically important in supporting TGD youth and their families.[53,56] Caregiver support and affirmation are associated with lower rates of emotional distress among TGD youth.[59] In addition to supporting shared decision-making about medical interventions, mental health providers are well-positioned to help the caregivers of TGD youth navigate their own concerns and emotional responses and develop their capacity for acceptance and affirmation.[53,60]

Training, Education, and Community Outreach

Multidisciplinary programs situated in academic medical centers have the resources and infrastructure to train the next generation of gender health-care providers and conduct research exploring health-care needs and outcomes for TGD youth. Currently, there are few training programs at the graduate or post graduate level that provide specialized training in gender-affirming care. Curricula for gender-affirming care in multidisciplinary settings should include foundational knowledge about gender diversity and development, and how to engage youth and parents in shared decision-making and comprehensive biopsychosocial assessments for medical interventions. Trainees will need to develop familiarity with unique issues that impact TGD youth's mental health, including stigma and minority stress, and strategies to foster resilience and identity pride.[60] Providers and trainees, who are often cisgender, benefit from structured training opportunities for self-reflection regarding cisgender privilege and the intersecting experiences with structural discrimination and oppression (eg, racism, heterosexism) that TGD youth may experience.[61] To increase the diversity of health-care providers working with TGD youth, programs can create training pipelines for LGBTQ+ trainees interested in gender-

affirming healthcare. Exposure to multidisciplinary pediatric gender care can have widespread effects on healthcare provision, as trainees are better equipped to adapt and implement gender-affirming practices with transgender youth in other health-care settings (eg, primary care).

Even at the pediatric level, TGD individuals are disproportionately impacted by health-care inequity and discrimination.[62] To reduce stigmatizing health-care experiences for TGD youth, innovative and sustainable strategies (eg, web-based learning collaboratives) are needed to disseminate culturally responsive, gender-affirming care training to licensed community providers who work outside of gender specialty clinics.[63] Pediatric providers in health-care settings can implement changes in clinical practices and collaborate with health-care administration to implement policy changes that shift system-wide practices (eg, offering options to include chosen name, gender identity in electronic medical records).

In addition to clinical consultation with community-based providers, health-care providers and staff can provide education and community outreach to attenuate TGD youth's experiences with discrimination in community settings. Education may include professional development workshops and consultation with schools or youth-serving agencies to help personnel better understand the needs of TGD youth. The research shows LGBTQ+ students face heightened risk for violence, harassment, and social exclusion in school, which are linked to lower levels of school engagement and academic achievement and increased health risk behaviors such as substance abuse, suicidal ideation and depression.[64] Education and advocacy can happen at the individual and system levels to improve inclusive practices and school climates for TGD youth. Common issues include access to bathrooms and locker rooms, staff use of chosen name and pronouns in classrooms, on school documentation and in electronic systems, and development of anti-bullying policies and practices that create safe, inclusive school climates. Dedicated community outreach staff on multidisciplinary teams are necessary to develop relationships with school and community-organization administrators and complete training and consultation.[48]

Adjunctive Programming and Resources

Promoting physical and mental health wellness includes providing informal support services for TGD youth and their caregivers (eg, youth play groups, support groups for teens and caregivers) and identifying gender-affirming providers and resources for non-medical interventions. Program staff can lead social and support groups for TGD youth who may feel isolated in their communities. These groups serve as a safe, affirming space to meet other gender diverse peers and include developmentally appropriate programming for children (eg, play activities) and teens (eg, sexual health education, panel discussions with transgender adults).[48] Caregiver support groups are also spaces to build community and share information with other caregivers who may be experiencing similar stressors. Program staff familiar with common questions and caregiver concerns can share resources and provide additional education on topics relevant to caregivers.[48]

There are a range of nonmedical interventions that can help address gender dysphoria and multidisciplinary programming can provide access to these services if they are not available in the community. Adjunctive programming may include access to legal advocacy services to assist with legal name and gender marker change, vocal therapy, gender inclusive hair removal services (eg, electrolysis, laser hair removal) and information about where to purchase shapewear or chest binders. Program staff can create resource lists with community supports and services that have been vetted and identified as gender inclusive. Physical wellness groups for TGD youth lead by certified personal trainers can provide a comfortable, affirming space for youth to exercise and be active without feeling distressed about locker room access or potential discrimination.[48]

Pediatric programs can provide support and preparation for TGD youth as they transition from pediatric to adult care settings. In adult primary care, patient autonomy increases, and caregiver input or support may decrease. Adolescent patients, accustomed to the additional support provided in pediatric care settings (eg, follow-up from social work, school advocacy), may have difficulty navigating the higher degree of autonomy expected in adult care. To prevent gaps in care, pediatric programs can use standardized assessments for transition readiness, check in with adolescents to determine the topics of health-care transition (eg, medical insurance, caregiver involvement, future goals for treatment) that need to be discussed and develop individualized transition plans.[65] When possible, collaborations between pediatric and adult

medical providers before and during transition to adult care can prevent discontinuity in care and improve healthcare access.

Recommendations

Optimizing health outcomes for TGD youth involves more than providing access to evidence-based care in multidisciplinary gender programs. Chronic experiences with discrimination, rejection and stigma in both health-care settings and community contexts negatively impact the mental health and well-being of TGD individuals.[6,8,66] Therefore, supporting TGD youth requires multidisciplinary programming and services that extend beyond gender-affirming medical and mental healthcare. Among the published examples of multidisciplinary pediatric gender programs,[41,48,49,52] the pathway through medical and mental health care may vary but treatment goal—to facilitate access to developmentally appropriate medical and mental health interventions and support the well-being of TGD youth and their families—remains consistent. In addition to a core team of health-care providers that include medical and mental services it is clear that multidisciplinary care extends into training, education, community outreach, and nonmedical programming for TGD youth. The following common themes emerged as recommendations for effective pediatric multidisciplinary care:

Training in Gender-Affirming Care Practices for Healthcare Providers

For gender programs affiliated with academic medical centers, education for trainees from multiple disciplines (eg, medical, surgical, nursing, psychiatry) can occur in situ, and these trainees may become the next generation of pediatric gender health providers in multidisciplinary programs. Improving access to multidisciplinary gender-affirming care is one means of reducing distress associated with gender dysphoria for TGD youth, but there are many other ways clinical providers can improve health outcomes for TGD youth. Training health-care providers who operate outside of multidisciplinary gender programs to understand gender diversity know how to support TGD youth within their discipline is essential. Youth living with caregivers who are not affirming or supportive are unlikely to be able to access care in a multidisciplinary gender program. However, well-trained primary care providers who meet regularly with youth and families, are uniquely positioned to provide (1) developmentally appropriate psychoeducation to youth and caregivers about gender diversity, (2) routine gender-affirming clinical services (eg, menstrual suppression) and community supports; and (3) offer referrals to multidisciplinary gender care as needed.

Adjunctive Programming and Resources

Programs that flexibility meet needs of TGD youth should include more than mental health and medical services. Youth and caregivers often need nonmedical services (eg, support groups) and resources (eg, legal name change), and may lack awareness of how to access these services without guidance. The expertise of staff and health-care providers in multidisciplinary programs can be leveraged in professional development workshops, clinical consultation and direct advocacy with school and community settings to positively impact the health and well-being of youth in the spaces where they live.

Healthcare Providers as Advocates for TGD Youth

The advocacy of health-care providers can play an important role in reducing stigma and discrimination that TGD youth experience both inside and outside health-care settings. In recent years, the proliferation of misinformation and mischaracterization of gender-affirming health care has led to harmful legislative efforts that included banning TGD youth from participating in sports and accessing gender-affirming medical care in the United States.[62] Beyond ensuring that TGD youth and their families can access evidence-based gender-affirming health care there are many ways to advocate for TGD youth within professional, organizational and community settings.[62] Health-care providers can dispel misinformation and myths about TGD youth and their families, and provide research-supported information about the negative impact of denying access to care on the mental health and well-being of TGD youth. Kuper et al[62] offer a summary of advocacy action items while considering the substantial amount of time and effort advocacy work requires, and potential negative consequences (eg, online harassment and threats). In addition to family advocacy that occurs in the

provision of medical and mental healthcare, providers can join professional organizations to draw awareness to gender diversity and emerging research related to gender-affirming care. In organizational and community settings, providers can advocate for gender inclusive and affirming policies and practices.

Conclusion

As more TGD youth and their families seek medical and mental health services, there is a need to expand access to comprehensive, evidence-based gender-affirming care. The multidisciplinary gender-affirming care model, which includes medical, mental health and non-medical supports remains an effective way to meet the unique needs of TGD youth and their families. Currently, access to gender-affirming care for TGD youth is limited by factors including the limited number of adequately trained health-care providers, geography and sociopolitical factors. The role of health-care providers and multidisciplinary program staff extends beyond direct service to include education, consultation and advocacy.

Author Contributions

All authors, CC, DC and BY (1) made a significant contribution in the conception, design, and interpretation of data reviewed for this manuscript; (2) drafted, wrote, and critically reviewed the article with CC leading revisions before submission; (3) have agreed on the journal to which the article will be submitted and (4) reviewed and agreed on all versions of the article before submission. All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Disclosure

Dr Diane Chen reports grants from National Institutes of Health, Received honorarium for presenting Grand Rounds in February 2022 from Children's National Hospital, outside the submitted work. The authors report no conflicts of interest in this work.

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