# Traumatic Stress and Resilience Among Transgender and Gender Diverse Youth

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## **KEYWORDS**

- Social stress Discrimination Transphobia Adverse childhood experience
- Resilience Coping Transgender Gender diverse youth Toxic stress

#### **KEY POINTS**

- Traumatic stress during childhood elicits neurobiologic, behavioral, and psychosocial impacts across the lifespan.
- Transgender and gender diverse (TGD) youth face higher rates of abuse and traumatic stress as compared with their cisgender peers.
- Traumatic stressors facing TGD youth include discrete experiences of abuse and recurrent socially-embedded forms of stigma, discrimination, and marginalization.
- TGD youth encounter traumatic stressors across multiple social settings, including at school, at home, and in community settings.
- Clinicians can help TGD youth build resilience by bolstering existing strengths; helping youth heal from trauma; and facilitating connections to supportive activities, peers, and role models.

# INTRODUCTION

Childhood trauma is a significant public health problem with lasting consequences. Traumatic stress increases the risk for virtually all mental health conditions and adversely impacts health, academic performance, and coping. The Substance Abuse and Mental Health Services Administration (SAMHSA) defines trauma as an experience of physical, emotional, or life-threatening harm with lasting effects on health and well-being. The terms "toxic stress" and "traumatic stress" refer to stress that overwhelms an individual's support systems, buffering relationships, and coping strategies.

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A traumatic experience may present as a single event, such as a physical assault, or a chronic exposure, such as maltreatment in a school setting or family rejection. Transgender and gender diverse (TGD) youth often experience acute and chronic traumatic stressors related to identity-based marginalization and discrimination. Ongoing interpersonal trauma is more likely to cause posttraumatic stress disorder (PTSD)—and is associated with more severe forms of PTSD—than noninterpersonal trauma.<sup>4</sup>

TGD youth face the gamut of common childhood stressors and additionally face higher rates of interpersonal and community-embedded trauma as compared to their cisgender peers. Neurobiologic models of chronic stress and social stress theory provide useful frameworks for conceptualizing how experiences of discrimination, stigma, and rejection across social settings affect mental health. Despite the higher rates of interpersonal traumas facing TGD youth, TGD youth are often quite resilient, particularly when able to access social supports, skill building, and affirming trauma-informed services. Clinicians who identify and address traumatic stress affecting TGD youth patients, while also providing guidance for improving social relationships and accessing supportive activities, can have a profoundly positive impact on mental health.

# **NEUROBIOLOGICAL UNDERPINNINGS OF TOXIC STRESS**

In youth who experience chronic social stress, including family rejection, discrimination, stigma, and/or rejection, physiologic stress response mechanisms become dysregulated. During an acute stress response, changes in neurotransmitters, hormones, and immune mediators promote adaptation and stability, a process known as "allostasis." These time-limited responses are generally protective and helpful to an individual under duress. Chronic activation of stress response systems, however, leads to lasting mental and physical changes that may damage organ systems. Underlying neuroendocrine systems are unable to achieve allostasis when stressors do not remit. As stress builds, an individual exceeds their innate capacity to cope, leading to allostatic overload. Multiple neuroendocrine systems are implicated in the "wear and tear" in the body and brain associated with chronic childhood stress. This model of allostasis (achievement of stability via stress activation) versus allostatic overload (pathophysiologic changes resulting from overuse) helps explain clinical presentations among youth with trauma histories.

Two key neurobiologic systems are known to be affected by toxic stress: the hypothalamic-pituitary-adrenal (HPA) system, which involves glucocorticoids; and the sympathetic adrenomedullary system, which centers on adrenaline (epinephrine and norepinephrine). Areas of the brain implicated in posttraumatic stress symptoms (specifically the hippocampus, amygdala, and prefrontal cortex) are especially sensitive to stress hormones.<sup>6</sup> The amygdala, a region that encodes emotional memories and informs emotional responses, may become hyperresponsive to threats, leading to hypervigilance and a heightened fear response in the absence of true danger - also referred to as "altered fear conditioning." 8,9 Neuroimaging studies have also demonstrated decreased hippocampal volume and abnormal hippocampus functioning in PTSD.<sup>10</sup> Damage to the hippocampus, which helps encode emotional, episodic, and spatial memories, contributes to memory impairment and mood dysregulation seen in PTSD. 11 Lastly, alterations in the shape and/or volume of multiple regions of the prefrontal cortex—in particular the medial prefrontal cortex—impede the extinction of fear responses and downregulation of amygdala activation. 12,13 Stressrelated changes in the prefrontal cortex also impact circadian rhythms and memory more generally.6

### PSYCHOSOCIAL IMPACTS OF IDENTITY-RELATED TOXIC STRESS

Childhood trauma is associated with lasting health effects across the lifespan. Studies have linked childhood trauma to poor physical health, 14-17 greater psychological stress, 15,18 increased risk for psychopathology, 15,16,19-22 and increased risk of substance use. 15 Early studies on childhood trauma centered on childhood adversity, as characterized by the Adverse Childhood Experience (ACE) study. 15 In the ACE study, investigators retrospectively examined adult health outcomes in association with exposure to childhood maltreatment (physical, emotional, and sexual abuse), physical and emotional neglect, and household challenges. Household dysfunction included parental interpersonal violence, a family member with mental illness or substance use, a family member in prison, or parental separation/divorce. The ACE study found a strong direct correlation between the number of ACEs and poor health outcomes. Experiences of early adversity tended to cluster, and data showed a doseresponse relationship between the number of ACEs and negative health outcomes in adulthood. For example, participants reporting four or more ACEs had a 4 to 12 times increased risk for alcoholism, drug abuse, depression, and suicide attempts as compared to those who reported no ACEs.<sup>15</sup>

Subsequent studies have added peer rejection, peer victimization, community violence exposure, and socioeconomic status to the ever-growing list of ACEs<sup>23</sup> and emphasized that ACEs all occur within a social context. Historical definitions of ACEs may fail to capture the nuance and pervasiveness of social stress experienced by TGD youth. This expanded definition better captures the experiences of many TGD youth who are repeatedly exposed to peer and family rejection and victimization at higher rates than their cisgender peers.<sup>24</sup>

Risk factors for the development of PTSD following a traumatic event are divided into factors before, during, and after the event. Risk factors before a traumatic event include younger age (when an individual has limited self-regulatory capacity); female sex; lower education level or intelligence; family history of depression, anxiety, or PTSD; history of mental health disorder, temperament, genetic, and/or neurobiologic factors, such as stress reactivity; and a prior individual history of trauma. <sup>25</sup> Risk factors during the event include the level of exposure, intensity of the experience, perception of the event, and whether the trauma is interpersonal and/or intentional. Risk factors after the event include limited social support, limited access to resources/services, ongoing stress, and limited coping skills. Critically, almost none of the risk factors for developing PTSD are within the individual's control. TGD youth often face numerous risk factors for PTSD while experiencing limited social support and reduced access to resources and services. They are also more likely to have experienced prior traumatic events and to face ongoing stressors and instability than cisgender youth.

TGD youth face discrete episodes of maltreatment and abuse and socially embedded discrimination, stigma, and marginalization across community settings. Minority social stress theory explains that both the direct negative consequences of social stressors and the internal experience of anti-transgender discrimination and messaging influence psychological processes. Social stress impacts youths' perception of the external world, fosters concealment of identity, and worsens self-image. Recurrent exposures to traumatic experiences and marginalization compound over time to lower self-image, impede self-efficacy, and decrease health-promoting behaviors. Data clearly show an increased risk for substance use, depression, stress, shame, and loneliness among TGD youth. TGD youth of color, gender minority status intersects with racial-ethnic identity to potentiate social stress. Intersectional framework explains that TGD youth of color experience profound inequities across

community, school, legal, and social welfare settings because of compounding marginalization based on race/ethnicity and gender identity and expression.

Clinically, providers often observe internalizing symptoms related to anxiety, depression, and/or PTSD, and, in some youth, externalizing symptoms, such as irritability or reactivity. TGD youth experience disproportionate rates of depression and anxiety disorders as compared to cisgender heterosexual youth. <sup>29–31</sup> LGBTQ individuals also carry a risk of PTSD 1.6 to 3.9 times higher than their cisgender heterosexual peers. <sup>24</sup> Relatedly, the rates of nonsuicidal self-injury, suicidal ideation, planning, and suicide attempts are higher among TGD compared to their cisgender peers. <sup>31</sup> Depression and victimization are significantly associated with higher odds of suicidal ideation among transgender youth <sup>32</sup> and transgender adults. <sup>33</sup> A staggering 45% of LGBTQ youth in the national 2021 Youth Risk Behavior Survey reported seriously considering attempting suicide within the last year, whereas 22% reported an actual attempt in the past year. <sup>34</sup>

Rates of disordered eating are also higher among LGBTQ individuals, <sup>35</sup> with disordered eating behaviors often beginning in childhood or adolescence (as with the general population in the United States [US]). <sup>36</sup> LGBTQ children aged 9 to 10 years old in the Adolescent Brain Cognitive Development Study were more likely to have full or subthreshold binge eating disorder than their cisgender heterosexual peers. <sup>37</sup> Although limited, data on TGD youth and young adults show elevated rates of self-reported eating disorders and, specifically, elevated rates of compensatory behaviors, such as fasting, vomiting, and laxative pill use. <sup>36,38</sup> Increased rates of disordered eating behaviors among TGD youth stem from traumatic experiences, discrimination, gender dysphoria, and body dissatisfaction. <sup>35,36,38,39</sup> Eating disorders are associated with more severe psychiatric symptoms and risk behaviors in early adulthood, <sup>39</sup> presenting additional complex challenges for TGD youth with trauma.

As with cisgender youth, TGD youth with trauma histories are more likely to engage in substance use than peers who have not experienced childhood trauma. 40,41 Among a large national sample, TGD adolescents had higher odds of alcohol use, marijuana use, and illicit drug use over the last year than cisgender adolescents. Experiences of bullying and harassment were associated with increased risk of substance use. 42 Another large cross-sectional analysis conducted among diverse California middle and high school students similarly found elevated rates of heavy alcohol, cigarette, marijuana, illicit drug, and polysubstance use when comparing TGD and cisqender youth (2.4-5 times the odds, depending on the substance). Both recent use (in the last 30 days) and lifetime use were elevated. Not surprisingly, TGD youth were at greater risk for substance use at an earlier age than cisgender peers. Victimization partially mediated the relationship between TGD identity and substance use. 40 Both adolescent PTSD<sup>41</sup> and depression<sup>43,44</sup> have bidirectional, reciprocal effects with substance use, wherein the presence of one increases risk for the other. Adolescents may use substances to mitigate PTSD or depression symptoms, while simultaneously exacerbating underlying symptoms in the long-term. Furthermore, substance use also increases the risk of victimization 45,46 and decreases response to PTSD45 and depression treatments. 43,44

# PHYSICAL HEALTH IMPACTS OF IDENTITY-RELATED TOXIC STRESS

Minority stress, discrimination, trauma, victimization, and stigma all influence the general health and well-being of LGBTQ people. LGBTQ people experience worse health and more disabilities than their cisgender heterosexual peers, with TGD individuals experiencing the greatest differences in overall health.<sup>47</sup> In addition to minority stress

associated with their LGBTQ identities, Black, Native American, and other people of color experience racism and intergenerational and historical racial trauma, which further compounds poor health outcomes.<sup>47</sup> People who experience multiple traumatic events, especially during childhood, are more likely to have a greater burden of persistent somatic symptoms, such as fatigue, dizziness, headaches, gastrointestinal symptoms, and pain.<sup>48-50</sup>

Dysregulation of the HPA axis is one of the lasting effects of childhood adversity, maltreatment, and LGBTQ-related structural stigma. <sup>51–56</sup> HPA axis dysregulation and stress-related disorders are associated with increased inflammatory factors, decreased anti-inflammatory factors, and altered immune responsiveness affecting overall physical health. <sup>57,58</sup> PTSD is also associated with metabolic and autoimmune disorders and increased risk for cardiovascular disease. <sup>59</sup> The autonomic nervous system is undermodulated or overmodulated in PTSD, contributing to a range of gastrointestinal, cardiac, and pulmonary complaints. <sup>49</sup> Neurologic symptoms like gait disturbances, psychogenic nonepileptic seizures, and visual symptoms may also be present. In children and adolescents, traumatic stress has also been associated with catatonia, pseudoneurologic symptoms, and altered arousal states. <sup>49</sup>

The increased vulnerability to somatic symptoms is potentially related to altered physiologic responses and perception of bodily sensations following traumatic events. Individuals experiencing interpersonal trauma or multiple traumatic events are more likely to report more severe somatic symptoms. As sense of threat, a common experience for LGBTQ youth, is associated with somatic symptoms. Treatment of PTSD has been shown to improve somatic symptoms.

# **DISTINCT STRESSORS FACING TGD YOUTH**

The true prevalence of traumatic stress among TGD youth is difficult to accurately estimate, because childhood trauma is often underreported as a result of stigma and shame. Exposure to trauma is common in the general US population, with 58% of youth reporting exposure to assault or bullying, sexual victimization, maltreatment by caretaker, property victimization, or witnessed victimization in the past year. The prevalence of childhood trauma is even higher among LGBTQ youth. In a recent cross-sectional study of lifetime exposure to ACEs in LGBTQ youth, 58% reported emotional neglect, 56% reported abuse, and 41% reported living with a family member with mental illness. As with the foundational ACE study, ACEs tended to cluster, with 43% of LGBTQ youth reporting four or more ACEs by age 18. TGD youth report higher rates of maltreatment and ACE scores than cisgender LGBTQ youth. Numerous studies have shown an association between childhood gender nonconformity and an increased risk of childhood abuse. In one study, greater gender nonconformity before 11 years of age was associated with greater exposure to childhood abuse and higher rates of PTSD.

Family rejection represents a common form of childhood trauma facing TGD youth. 66 Parental rejection behaviors increase risk for substance use, depression, and suicidality among TGD youth. 66-68 In addition to the direct mental health impacts, family rejection contributes to disproportionate rates of child welfare contact and out-of-home placements for TGD youth. 69 TGD youth additionally face disproportionate rates of homelessness, with family rejection and maltreatment being the leading causes. 70-72 Family conflict, adversarial relationships, and a lack of parent-child closeness are also linked to drug use. 73-76

LGBTQ youth are also more likely than cisgender heterosexual youth to face bullying and victimization from peers.<sup>77</sup> In a recent national assessment conducted

by the Centers for Disease Control and Prevention, almost 25% of LGBTQ students reported bullying at school within the last year, and 30% reported online bullying.<sup>34</sup> One in five LGBTQ students reported ever being forced to have sex, with female students experiencing disproportionate risk compared to male students.<sup>34</sup> In the 2021 National School Climate Survey, 76% of LGBTQ students reported verbal harassment based on identity in the past year.<sup>78</sup> Bullying continues through college and is associated with increased stress, anxiety, and depression, and lower self-esteem.<sup>79,80</sup> Unsurprisingly, LGBTQ youth who experience bullying and victimization in school settings report lower self-esteem and higher levels of depression.<sup>78</sup>

In addition to experiences of bullying and harassment by peers, LGBTQ students experience many other forms of school-based discrimination, including exclusion from school spaces and activities, hearing homophobic and transphobic comments from teachers or staff, and being encouraged to ignore perpetrators and/or to change their own behavior to avoid victimization. More than two-thirds of LGBTQ students report feeling unsafe in school because of factors related to gender or sexual orientation, with 32% missing at least one day of school in the past month as a result. Victimization is itself also associated with an increased risk of school discipline directed toward the LGBTQ student. Bullying and harsher discipline in school settings increase rates of school dropout among LGBTQ youth. These experiences of discrimination are associated with symptoms of PTSD in TGD individuals, even when adjusting for previous traumatic experiences.

The rise of anti-transgender bills around the United States further marginalizes TGD youth, who already face high rates of victimization and discrimination in home and school settings. Public restriction or loss of civil rights among the LGBTQ community contributes to feelings of stigma, hopelessness, internalized homophobia/transphobia, and poor self-image.<sup>83,84</sup> Overall, young LGBTQ Americans experience more profound impacts of discrimination on their psychological well-being than previous generations.<sup>85</sup> TGD youth frequently follow news about transgender rights, with 85% reporting they follow the news closely. More than 85% of TGD youth surveyed nationally reported worsened mental well-being as a result of exposure to debate about anti-transgender state laws. 86 These data align with prior analyses of the effects of political climate on LGBTQ youths' mental health. In the late 2000s, LGB youth living in states that banned samesex marriage had higher rates of suicide attempts than LGB counterparts in states that legalized same-sex marriage.<sup>87</sup> Data among LGB adults similarly showed higher rates of psychiatric disorders and psychological distress among those living in states that banned same-sex marriage before it was federally recognized<sup>88</sup> and those living in states that do not protect LGBTQ people from employment discrimination or hate crimes.<sup>89</sup>

High rates of abuse and maltreatment, family rejection, and pervasive sociopolitical stress compound to increase psychiatric symptoms, risk behaviors, and maladaptive coping (including substance use and self-harm) among TGD youth. Homelessness, bullying, social stigma, and family rejection are specifically associated with an elevated risk of suicide. 66,90 Additional articles in this special issue detail the roles of school and family environments in the mental well-being of TGD youth.

# RESILIENCE AND PROTECTIVE FACTORS FOR TGD YOUTH

Providers can support the mental well-being of TGD youth by recognizing and promoting recovery from trauma and by helping youth build resilience. According to the American Psychological Association, resilience commonly refers to "the process by which people adapt well in the face of trauma, stressors, and adversity." Multiple factors contribute to resilience among TGD youth, including individual coping

strategies, interpersonal communication and support, access to resources, and school and community connectedness. Resilience factors can exist at the individual level (eg, self-efficacy skills, strategies for managing stress in helpful ways, social skills, ability to define one's identity), at the relationship level (eg, receiving encouragement and support from others, positive parent-child attachment, family cohesion), and at the community level (eg, reliable support from social networks, engagement in positive extracurricular and community-based activities). Some resilience factors center internal characteristics and skills, whereas others focus on the social support systems around the youth.

The literature on PTSD delineates a set of protective factors that helps prevent the development of clinical PTSD following a traumatic event. Protective factors include: supportive relationships, networks of support, and access to support groups, services, and resources; the response of others to the traumatic event (especially important for children and adolescents); adaptive coping strategies; a strong system of meaning or faith; and opportunities for expression and mastery, stability, hope, or optimism. As with PTSD risk factors, many of these protective factors are outside of the individual's control. Yet, providers who work with TGD youth can often impact the youth's social environment through direct family education and communication; connections to other supportive spaces or resources (e.g., online or in-person youth groups or activities); and safety, interpersonal, and communication skill building.

For many TGD youth, mental health challenges emerge in childhood or adolescence, as gender expression and roles play a larger role in peer socialization. Caregiver attachment and security are foundational to trust and interpersonal relationships throughout the lifespan and highly protective for transgender youth. TGD youth with strong early attachments are often better equipped to buffer socially-embedded discrimination and adversity. Importantly, prepubescent TGD children supported in their gender identity by parents exhibit comparable rates of depression as matched cisgender peers and only slightly higher anxiety scores. <sup>93</sup>

Regardless of age, parental support and engagement are highly impactful. Studies have consistently shown that parental support and engagement lower the risk of alcohol and drug use in general adolescent populations <sup>94–96</sup> and for LGB adolescents. <sup>97–99</sup> In particular, parental trust, warmth, and involvement decrease tobacco, alcohol, and marijuana use. <sup>100</sup> Research conducted over two decades by the Family Acceptance Project has demonstrated that LGBTQ youth who experience more acceptance and support from their parents display lower rates of depression and suicidality and higher self-esteem. <sup>66,101</sup> Parental behaviors impact youths' social support, self-worth, and overall health. Specific supportive family behaviors associated with improved youth mental well-being include advocating for the youth when mistreated by others, seeking supportive community spaces for the youth, and supporting the youth's gender expression. <sup>66</sup> The Family Acceptance Project provides helpful culturally-tailored guides and handouts for use with families of TGD youth. <sup>101,102</sup>

Peer, community, and school connectedness present additional key targets for bolstering resilience among TGD youth. Positive social support or sense of belonging improves self-esteem; lowers rates of psychological symptoms; and decreases unhealthy adolescent behaviors, such as substance use and high numbers of sexual partners. LGBTQ youth who report acceptance from peers regarding their identity also tend to use substances less than peers who do not experience identity acceptance from peers. Meanwhile, positive relationships with teachers and school staff improve feelings of safety at school, 104 ease the burden of navigating structural barriers at school, 104 and reduce absenteeism among TGD youth. Participation in Gay-Straight Alliance student groups, which offer interpersonal support and

educational, advocacy, and/or recreational activities to LGBTQ students and their allies, is associated with better psychological well-being and more social connectedness among LGBTQ students. <sup>106</sup> In fact, the presence of a Gay-Straight Alliance group on a school campus is associated with better overall student well-being <sup>107</sup> and lower rates of risk behaviors among students, including substance use and high numbers of sexual partners. <sup>108</sup>

# IMPLICATIONS FOR CLINICAL CARE

Trauma-informed care (TIC), as defined by SAMHSA, is a systems-based approach designed to create safe environments that are responsive to the signs and symptoms of trauma. A trauma-informed approach does the following: "(1) realizes the wide-spread impact of trauma and understands potential paths for recovery; (2) recognizes the signs and symptoms of trauma in clients, families, staff, and others involved with the system; (3) responds by fully integrating knowledge about trauma into policies, procedures, and practices; and (4) resists re-traumatization." Within health care settings, trauma-informed principles and practices support patients, families, and professionals through trust, collaboration, safety, and empowerment. TIC is of particular relevance to TGD youth, who have often experienced a multitude of traumatic stressors and barriers when presenting to care settings.

In addition to TIC, the gender affirmative framework is another key guiding set of principles for providing high-quality care to TGD youth and their families. TIC and gender-affirming care guide systems of care and individual providers in creating safe, supportive environments for TGD youth. 109 At its core, gender-affirmative framework contends that gender presentations are diverse, vary across cultures, and vary over time and that no gender identity or expression is pathologic. Gender is informed by biology, development, socialization, culture, and context. For some youth, gender is evolving and/or fluid, and for some youth gender is nonbinary. As discussed herein, clinical symptoms and risk-taking behaviors result from TGD youth's experiences in society and by cultural reactions to their gender identities and presentations. 110-113 Providers who adopt gender-affirmative framework engage in the following best practices: (1) approaching LGBTQ identities as natural, normal variations of human sexuality and gender; (2) acquiring and using accurate knowledge to effectively provide mental health care to LGBTQ clients; (3) addressing and counteracting anti-LGBTQ attitudes, stigma, and minority stress; and (4) providing support and promoting resilience and pride. 114-116 SAMHSA further encourages providers to consistently use affirming language (including names and pronouns), support LGBTQ peer support, and ensure that services are responsive to the needs of TGD individuals. 117

Gender-affirming care is associated with reduced symptoms of depression, suicidal ideation, and suicide attempts. \$^{118-120}\$ The specific act of using pronouns and chosen names has also been shown to reduce depressive symptoms and suicidal behaviors. \$^{119}\$ Importantly, greater symptom reduction was directly associated with the use of pronouns and chosen name in a greater number of contexts. \$^{119}\$ When providers assist families in adopting accepting behaviors, TGD youths' self-esteem, social support, and health are all likely to improve. \$^{66}\$ The improvements in depression and suicidal ideation observed with gender-affirming care are lasting and significant. Over a 1-year follow-up period, gender-affirming care was associated with a 60% lower odds of moderate or severe depression and a 73% lower odds of suicidality. \$^{120}\$ Beyond improvements in depressive symptoms and suicidality, studies demonstrate that gender-affirming care is also associated with improvements in psychosocial functioning, physical health, quality of life, and general well-being.  $^{121-123}$ 

### **SUMMARY**

TGD youth experience higher rates of abuse, assault, and maltreatment than their cisgender peers. Some TGD youth further experience toxic stress associated with identity rejection by family, peers, communities, and societal attitudes and messages. Toxic stress often presents as pervasive interpersonal and community-based discrimination, rejection, and marginalization. Providers working with TGD youth and their families can improve mental well-being by addressing underlying trauma symptoms while bolstering individual skills, family and peer supports, and school and community connectedness.

# **CLINIC CARE POINTS**

- Providers should screen for childhood trauma and toxic stress symptoms among their TGD patients.
- TGD youth benefit from interventions that target individual coping strategies, healthy relationships, and community/school connectedness.
- Trauma-informed care and gender-affirming care principles guide high-quality care for TGD youth.

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