

# Reducing Suicide Ideation in Transgender Adolescents with Mindful Self-Compassion: An Open Trial

Karen Bluth<sup>1</sup>  · Ani Bryce<sup>1</sup> · Christine R. Lathren<sup>2</sup> · Jinyoung Park<sup>3</sup> · Samantha Pflum<sup>1</sup> · Matthew Clayton<sup>4</sup>

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## Abstract

**Objectives** This open trial aimed to determine the feasibility and acceptability of a modified version of Mindful Self-Compassion for Teens for transgender adolescents and assess changes in suicide ideation and other measures of emotional well-being. As an exploratory measure, we investigated potential moderators of suicide ideation outcomes, such as self-compassion.

**Method** Two cohorts of transgender and gender-diverse adolescents recruited from the US and Canada ( $n = 35$ ; age range 13–17,  $M = 14.9$ ,  $SD = 1.19$ ) participated in an eight-session online self-compassion program. Quantitative measures of wellbeing (i.e., suicide ideation, depression, resilience) were collected at baseline, post-intervention, and 2-month follow-up, and qualitative data (through open-ended questions on an electronic form) were collected at post-intervention and 2-month follow-up.

**Results** Suicide ideation decreased with large effect sizes from baseline to follow-up, and most other measures of wellbeing improved with small to moderate effect sizes. Feasibility was confirmed, and acceptability differed markedly between cohorts, with the cohort with greater acceptability improving in mental health attributes to a greater degree. Self-compassion and thwarted belongingness, a factor related to suicide ideation, moderated suicide ideation such that those with greater self-compassion or less thwarted belongingness experienced less suicide ideation.

**Conclusions** Self-compassion programs can be beneficial to help transgender adolescents manage the stressors and negative emotional outcomes arising from the anti-trans sociopolitical discourse that has been pervasive in the US. We provide recommendations for future implementations, including that someone who is transgender be part of the instructional staff. Future studies would benefit from larger sample sizes and randomized control trials to confirm the present findings.

**Preregistration** This study is not preregistered.

**Keywords** Adolescents · Transgender · Gender diverse · Suicide ideation · Depression · Self-compassion · Nonbinary · Suicidality

Suicide is the second leading cause of death for adolescents between the ages of 14 and 18 in the US (Ivey-Stephenson et al., 2020). According to the 2011–2021 CDC Youth Risk

Behavior Survey Data Summary and Trends Report, in 2021, almost a fourth of youth had considered suicide in the previous year, and 10% had attempted suicide at least once in the previous year (Center for Disease Control, 2023). Further, statistics on suicidal behavior in transgender and gender-diverse adolescents are even more alarming; in a study of over 120,000 11–19-year-olds, Toomey et al. (2018) reported that the rate of suicidal behavior in transgender and gender-diverse adolescents is up to five times higher than that of cisgender adolescents (i.e., those whose gender aligns with the sex assigned at birth). Yet another study in the UK confirmed this finding, reporting it as 5.5 times higher (Biggs, 2022). The most recent statistics report that for transgender and gender-diverse adolescents, 23% of transmen, 16% of transwomen, and 17% of nonbinary youth report attempting suicide over the past year, and 56% of transmen and 48%

✉ Karen Bluth  
bluth@med.unc.edu

<sup>1</sup> Department of Psychiatry, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599, USA

<sup>2</sup> Department of Physical Medicine and Rehabilitation, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599, USA

<sup>3</sup> Department of Psychology and Neuroscience, Duke University, Durham, NC, USA

<sup>4</sup> Department of Psychology and Neuroscience, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

of transwomen and 48% of nonbinary adolescents report seriously considering suicide over the past year (The Trevor Project, 2023). The emotional distress experienced by transgender adolescents can be largely attributed to external factors they experience daily, as 27% of transgender adolescents report feeling unsafe traveling or being at school, a rate that is four to five times that of cisgender adolescents (Johns et al., 2019). As the literature on the prevalence of suicidal behavior and associated psychosocial factors in transgender and gender-diverse adolescents has grown, it has become increasingly evident that current adolescent mental health data do not adequately capture the pervasiveness of suicidal behavior in this marginalized group.

The disproportionate levels of suicidal behavior and depression in adolescents who are transgender or gender diverse, defined here as those who identify with a gender different from the sex they were assigned at birth, are largely due to minority stressors caused by societal structures that reinforce cisnormativity and transphobia (Pellicane & Ciesla, 2022). These stressors span across many contexts (e.g., home, school) and include victimization, rejection, and harassment from peers and family, not having access to affirming healthcare, as well as emotional distress due to internalized stigma (Toomey, 2021). Minority stress theory places identity-based stressors on a “continuum” between distal and proximal, where distal stressors are external forms of discrimination such as bullying, and proximal stressors are internal psychological processes such as negative self-evaluation, all of which result in long-term psychological distress (Meyer, 2003). As gender minorities, transgender and gender-diverse adolescents experience both distal (e.g., others not affirming one’s gender) and proximal stressors (e.g., internalized transphobia), which in turn exacerbate the normative developmental emotional and social challenges that occur in adolescence (Testa et al., 2015). Further, childhood trauma, such as emotional, physical, and sexual abuse, is more prevalent among transgender youth than cisgender youth (Rafferty, 2021; Tobin & Delaney, 2019). The accumulation of these stressors impedes the progression of certain key developmental tasks, such as identity affirmation, which places a tremendous burden on health and wellbeing, heightening risk for depression and anxiety (Testa et al., 2017). Crucially, depression and anxiety both increase the likelihood of suicidal ideation (Cai et al., 2021; Sareen et al., 2005).

Although current treatments such as puberty blockers, hormone replacement therapy, and psychotherapy somewhat attenuate the symptoms of gender dysphoria (i.e., distress arising from experiencing a mismatch between one’s identified gender and sex assigned at birth), little has been done to address the specific psychological needs of this population (Peterson et al., 2016). Exacerbating the paucity of attention to the mental health needs of transgender adolescents,

recent restrictive state laws targeting transgender adolescents have been associated with fewer trans-specific mental health providers (Hollinsaid et al., 2022). As the population of transgender and gender-diverse children and adolescents has been reported to be as high as 8.4% of all children and adolescents in the US (Zhang et al., 2020), and the prevalence of suicide attempts is significantly higher in adolescents than in any other age group in the transgender population (Clements-Noelle et al., 2006), there is a clear need for an effective preventive intervention to address the elevated risk for suicide for transgender and gender-diverse adolescents.

According to the interpersonal psychological theory of suicide (Van Orden et al., 2010), suicide ideation is precipitated by the presence of two factors: thwarted belongingness and perceived burdensomeness. Transgender and gender-diverse adolescents regularly experience thwarted belongingness—defined as an unmet need for social connection and acceptance—in multiple ways, including bullying and rejection at school and at home, to legislative bans on participation in sports and using public restrooms. Further, peer victimization and harassment can decrease feelings of school belonging for transgender adolescents, and when school belonging is low, psychological well-being decreases, alongside heightened risk for suicidal thoughts and behaviors (Hatchel et al., 2019; Kosciw et al., 2020). Perceived burdensomeness—the belief that one’s existence places a burden on others such as friends and family—can develop if adolescents internalize transphobic narratives from family, peers, and society, or if they believe they require too much attention and energy from their family and/or peers (Hendricks & Testa, 2012). As the feeling of burdensomeness increases, young people are less likely to reach out to others for social support, thereby increasing suicide ideation (Hill & Pettit, 2014). Also, the capability to engage in suicidal behavior is higher after habituation to physical pain, which often occurs through self-harming behaviors (Van Orden et al., 2010). Reports indicate that 41.8% of transgender and gender-diverse adolescents report self-harm, whereas cisgender adolescents report less than half of that percentage (Peterson et al., 2016).

Despite the pervasiveness of suicidal behavior and of the factors that promote it, current behavioral programs for reducing depressive symptoms and suicide ideation in adolescents have limited efficacy; one review cited that only half the programs had any significant effect on suicide behaviors (Calear et al., 2016). Suicide prevention/intervention programs for youth incorporate cognitive behavioral therapy (Berk et al., 2004; Esposito-Smythers et al., 2011), educational interventions for youth and caretakers (Rotheram-Borus et al., 2000), rapid response outpatient services (Greenfield et al., 2002), skills-based treatments (Donaldson et al., 2005; Spirito et al., 2002), and utilization of youth-identified support persons or group therapy

(King et al., 2006; Wood et al., 2001). Although research demonstrates improvements in caretakers' knowledge in how to access resources, studies report limited effectiveness in reducing suicidality (Daniel & Goldston, 2009; Katz et al., 2013; Robinson et al., 2011). For example, a recent review of suicide prevention programs for post-secondary students determined that gatekeeper training programs (i.e., programs for counselors or teachers to learn how to identify risk level of students) were the most common type of program available, and although effective in providing information about detecting signs of suicide, encouraging help-seeking behaviors, and greater engagement with mental health services, it could not be determined whether these programs elicited a change in suicide ideation (Black et al., 2023).

Other suicide prevention programs addressed students directly, frequently in an online format, and these were also effective in increasing suicide literacy, identifying at-risk students, and lessening stigma about suicide (Black et al., 2023). Although online support was provided through the program, few students utilized these resources, and it is unknown whether these programs had any effect on suicide-related behaviors (Black et al., 2023).

The lessons learned from these suicide prevention programs for youth have implications for future program design. For instance, the most effective of such programs utilized professional interventionists (rather than classroom teachers), assigned homework, and were of relatively short duration (Stice et al., 2009). Further, given that adolescents become suicidal for different reasons, it is recommended that future interventions target the specific developmental and contextual needs of subgroups of suicidal adolescents (Daniel & Goldston, 2009). Informed by the mixed success of well-studied behavioral interventions, we investigated a new suicide prevention approach, rooted in self-compassion.

Self-compassion is a targeted response for suicide ideation and depression, and directly addresses the root cause of the emotional suffering faced by transgender youth. Comprised of three elements: mindfulness, or maintaining perspective rather than becoming overwhelmed or avoiding the difficulty; self-kindness, or treating oneself with tenderness and care rather than with harshness or judgment; and common humanity, or recognizing that difficult emotions are part of the human experience, rather than feeling isolated by them, it provides a way to support oneself when struggling (Neff, 2023).

Self-compassion demonstrably contributes to improvements in psychological health across populations (Baer et al., 2012). Found to be inversely associated with depression, anxiety, and psychological distress in adults and adolescents in meta-analyses (adults: MacBeth & Gumley, 2012; adolescents: Marsh et al., 2018), greater self-compassion is associated with lower suicidal behavior and ideation among community adults, college students, veterans,

and adults with cancer (Hasking et al., 2019; Rabon et al., 2019). In undergraduates, self-compassion has been found to mediate the relationship between negative affect and both non-suicidal self-injury and suicide ideation, meaning that the ability to be self-compassionate in response to negative affect may mitigate risk for self-injurious thoughts and behaviors (Hasking et al., 2019). Importantly, this outcome was also found in adolescents who displayed strong depressive symptoms, posttraumatic stress symptoms, and suicidality, as psychological symptoms were reduced when levels of self-compassion were elevated, and the impact of these psychological symptoms on suicidal behavior was reduced in individuals who were high in self-compassion (Xavier et al., 2016; Zeller et al., 2015). Further, in adolescents, self-compassion predicted lower depressive symptoms, anxiety, stress, and negative affect after an intensive mindfulness retreat, protected against negative effects of low self-esteem, and strengthened resilience (Bluth et al., 2018; Galla, 2016; Marshall et al., 2015). Most notably, in LGBTQ adolescents, those who faced greater victimization by peers reported lower rates of self-compassion and higher rates of suicide ideation and attempts (Hatchel et al., 2019). Conversely, LGBTQ adolescents with higher levels of self-compassion were associated with higher levels of resilience against bias-based bullying, which may prevent the adverse mental health outcomes that result from victimization (Vigna et al., 2018). Collectively, these findings support the premise that self-compassion is protective against suicidal behavior and depression among adolescents.

Interventions which focus on cultivating self-compassion result in decreases in psychopathology in cisgender populations (Ferrari et al., 2019). A meta-analysis of 27 RCTs ( $n = 1480$ ) of self-compassion interventions report improvements across 11 psychological outcomes, with medium effect sizes for depression, anxiety, and stress (Ferrari et al., 2019). Mindful Self-Compassion (MSC) is a structured 8-week course that was developed for adults with the goal of cultivating self-compassion (Neff & Germer, 2018). The name of the program includes the term "mindful" because mindfulness is foundational to self-compassion. Specifically, it is necessary to be aware of one's own emotional state to recognize that one is struggling, and, in turn, be self-compassionate. Previous evidence suggests that MSC is effective for adults in reducing depression, anxiety, and stress, and it also promotes general life satisfaction and compassion for the self, and for others (Friis et al., 2016; Neff & Germer, 2013; Smeets et al., 2014; Torrijos-Zarcelero et al., 2021).

A modified version of the MSC course was created for adolescents and called Mindful Self-Compassion for Teens (MSC-T), and previously known as Making Friends with Yourself. Findings from MSC-T implementation in community populations of adolescents demonstrated a significant decrease in depression and improved satisfaction with life

(Bluth et al., 2016), alongside increases in resilience and gratitude (Bluth & Eisenlohr-Moul, 2017). Further, both mindfulness and self-compassion covaried with emotional wellbeing outcomes, including stress and depression (Bluth & Eisenlohr-Moul, 2017) supporting the premise that mindfulness and self-compassion are critical factors responsible for decreasing stress and depression.

Moreover, a recent adaptation of MSC-T, Mindful Self-Compassion for Transgender Adolescents (MSC-TA), substituted trans-specific scenarios and stressors into various self-compassion exercises, and showed promise as it was associated with significant reductions in depression and anxiety, and significant increases in self-compassion, mindfulness, resilience, and life satisfaction (Bluth et al., 2023a, b); however, suicide ideation was not measured. To further this line of research, this open-trial examines MSC-TA for transgender and gender-diverse adolescents who report suicide ideation. Further, it explores if participation is associated with changes in suicide ideation, gender minority stressors, and thwarted belongingness and perceived burdensomeness, key factors often associated with suicide ideation.

Using a single armed pre-post-follow-up design and input from a community advisory board of those in the transgender community, the aim of the open-trial is to further refine MSC-TA and then test feasibility, acceptability, and preliminary outcomes of Mindful Self-Compassion for Transgender Adolescents (MSC-TA) with transgender and gender-diverse participants who self-reported at least minimal levels of suicide ideation. Our aims are the following: (1) determine if MSC-TA will be both feasible and acceptable; (2) assess whether suicide ideation, depression, thwarted belongingness, and perceived burdensomeness decrease post-intervention, while self-compassion and resilience increase; and (3) as an exploratory aim, investigate whether childhood trauma, gender minority stressors, interpersonal needs (thwarted belongingness and perceived burdensomeness), age, gender, or self-compassion moderated suicide ideation outcome.

## Method

### Participants

Participants were recruited from the US and Canada through posting the recruitment flyer on various social media platforms including Facebook groups, Twitter, LinkedIn, and Instagram. The flyer was also sent to school listservs using an electronic flyer delivery system, as well as to mental healthcare providers at gender clinics. Interested caregivers or adolescents registered their contact information on a secure online platform used to track recruitment and contact participants in clinical research studies; 135 individuals provided information on the platform. An undergraduate

research assistant then called each potential family and conducted a screening questionnaire with their caregiver to confirm eligibility; 49 families were able to be reached and completed the screening questionnaire. Eligibility at this stage was determined by being between 13 and 17 years of age, identifying as transgender or gender diverse, and having access to a computer or phone with Internet and a camera. Participants were considered eligible to advance in the recruitment process regardless of reporting a presence or lack of suicide ideation in the initial screening; however, caregivers were made aware that the adolescent would be assessed for suicide ideation during the second eligibility assessment with the study psychologist, and that a certain level of suicide ideation was necessary for eligibility. Participants were not eligible to enroll in the study if they were planning to begin gender affirming hormone therapy or puberty blockers during the 3-month study period, as hormone levels have been linked to alterations in mood (Baker et al., 2021). Thirty-five participants enrolled in the open trial. Demographics for the 34 who completed the study are in Table 1. Overall, 52% were transmasculine, 77% were White, and roughly 85% came from families where one parent/caregiver had at least a college degree. Seventy-nine percent engaged in self-injury at some time during their lives, and experiences of childhood trauma of all types were in the none to low range.

### Procedure

Prior to participant recruitment, a community advisory board (CAB) was formed that consisted of stakeholders in the transgender adolescent community: four transgender adolescents (one of whom took the MSC-T program previously), three transgender young adults (two who were leaders in the transgender community, one who was a social worker), a parent of a transgender adolescent, and a social worker who works with transgender adolescents. The CAB met three times over the course of the study via Zoom to advise the research team on issues such as optimal methods for recruitment, potential modifications to the program content, and best ways to disseminate findings to reach the transgender community. CAB members were compensated US\$90 for the first meeting (1.5 hr), and US\$70 each for second (1 hr) and third (1 hr) meetings.

Once a participant was determined to be initially eligible for the study, the research assistant asked the adolescent to join the call, and then reviewed a consent and an assent document over the phone with caregivers and adolescents and obtained verbal consent from both parties for the adolescent's participation. Next, the consenting caregiver and adolescent met over HIPAA-compliant Zoom with a mental health provider (i.e., either the study psychologist with a PhD in clinical psychology or a graduate level clinical

**Table 1** Characteristics of participants ( $n=34$ )

Characteristic	$M$ ( $SD$ ) or $n$ (%)
Age, $M$ ( $SD$ )	14.91 (1.19)
Gender, $n$ (%)	
Transgender female/woman	5 (15.2)
Transgender male/man/transmasculine	17 (51.5)
Nonbinary/gender queer/genderfluid	11 (33.3)
Race/ethnicity, $n$ (%)	
Black	1 (2.9)
Hispanic or Latino	3 (8.8)
White	26 (76.5)
Biracial or multiracial	4 (11.8)
Parent highest education, $n$ (%)	
High school or less	1 (2.9)
Some college	1 (2.9)
College graduate	10 (29.4)
Master's degree	13 (38.2)
Graduate or professional degree	6 (17.6)
Unsure	3 (8.8)
Ever self-harmed, $n$ (%)	27 (79.4)
Ever attempted suicide, $n$ (%)	7 (20.59)
Childhood trauma, $M$ ( $SD$ )	
Emotional abuse	1.82 (0.61)
Physical abuse	1.07 (0.38)
Sexual abuse	1.15 (0.69)
Emotional neglect	1.99 (0.62)
Physical neglect	1.18 (0.19)
Minimization/denial	2.87 (0.81)

*Note.* One participant was excluded in combined gender categories because their gender identity could not be collapsed with others,  $n=33$ . Acknowledging that the gender categories are not identical, they have been collapsed according to <https://www.hrc.org/resources/glossary-of-terms>. If the participant listed two parents, the parent with the highest education level is displayed. Childhood trauma cut-off scores for “none” and “low” respectively are emotional abuse  $\geq 9, \geq 13$ ; physical abuse  $\geq 8, \geq 10$ ; sexual abuse  $\geq 6, \geq 8$ ; physical neglect  $\geq 8, \geq 10$ ; and emotional neglect  $\geq 10, \geq 15$  (Bernstein & Fink, 1998)

psychology trainee in their last year of clinical training). Notably, both mental health providers had extensive experience working with transgender/gender-diverse adolescents. The mental health provider asked questions pertaining to the adolescent’s mental health history, first asking questions pertaining to childhood trauma (i.e., Childhood Trauma Questionnaire: Short Form: Bernstein et al., 2003), and second, assessed initial baseline suicide ideation symptoms (i.e., Depression Symptom Index–Suicidality Subscale [DSI-SS]; Joiner Jr et al., 2002). Participants were considered officially enrolled in the study if they scored 3 or higher on the DSI-SS and the mental health provider

determined them to be safe and sufficiently supported to participate.

Participants were assigned to one of two cohorts depending on date of enrollment. Cohort 1 occurred in July 2022 with 18 participants, and Cohort 2 occurred in January and February 2023 with 17 participants, for a total enrollment of 35 adolescents. Quantitative data were collected through survey measures distributed through RedCap, a secure, online data collection application for research purposes. Participants completed these survey measures directly prior to the intervention (pre-program), directly after the intervention (post-program), and 2 months following the intervention (follow-up). Caregivers were informed each time that a survey would be distributed to the adolescents. The post-program survey included an Intervention Satisfaction questionnaire and several open-ended questions to allow participants to report their experience with the intervention. At the end of the study, participants received a US\$150 gift card as compensation if they completed all three online surveys (US\$50/survey). Additionally, at mid-program, post-program, and follow-up, participants met individually with a study psychologist via phone or HIPAA-compliant Zoom at which time the DSI-SS scale was administered to assess suicide ideation and participant safety. Parents were notified if the psychologist felt that the adolescent was at imminent risk.

Several changes were made to the protocol between Cohorts 1 and 2, in collaboration with input from the IRB, community advisory board, our trans-identified trans youth research consultant, and study psychologist. (Of note, the reason for these modifications is discussed in detail in the “Results” and “Discussion” sections.) In Cohort 1, most participants shared contact information at the end of session 1 and created a group chat that was likely active throughout the remaining sessions and may have affected their experience of the program. Thus, in Cohort 2, participants were required to sign a form indicating that they would not share contact information prior to the completion of the study. Also, to clarify purpose of the study, the term *program* was changed to *course* in recruitment materials and consent forms to better represent the structured nature of the curriculum (some participants in Cohort 1 had expected the program to be more free-flowing, and similar to group therapy). Also, all potential participants were informed that instructors were cisgender women (some participants in Cohort 1 had expected instructors to be trans) and therefore limited in their personal knowledge of the trans experience. Finally, during the course itself, instructors reminded participants at the beginning of every exercise or guided meditation practice that participation was optional and indicated how long the practice would take (some participants in Cohort 1 requested more frequent reminders).

## Safety Monitoring

In addition to being evaluated by the study psychologist before, at mid-program, post-program, and follow-up, other safety measures were followed: (1) the study psychologist was present during all classes and was available to take an adolescent into a breakout room if they became dysregulated or requested additional 1:1 support; (2) prior to beginning of program, caregivers were required to provide their physical address, emergency contact information, alternative address if adolescent participant would be joining from a different location during any class, and phone numbers and email addresses for caregivers; (3) at the beginning of class, an adult had to come on screen to indicate they were physically available during class; (4) the mental health facility, emergency room, and child protective services unit closest to each participant's physical location was noted prior to the program to be used in the instance of an emergency; (5) if a participant logged off during class (e.g., tech issues, overstimulation), the research assistant would contact the parent immediately; (6) if participant endorsed recent (i.e., within the last month) self-harm at any time point on any survey, the study psychologist followed up with participant within 24 hr.

## Intervention

Mindful Self-Compassion for Transgender Adolescents (MSC-TA) includes the following elements which define self-compassion: (1) mindfulness, (2) self-kindness, and (3) common humanity. Modifications were made from the original MSC-T curriculum based on initial feedback from the CAB and findings from a previous study with transgender and gender-diverse teens (Bluth et al., 2023a, b). For example, the body scan, present in the standard MSC-T curriculum, was eliminated from the MSC-TA adaptation. In addition to the study psychologist attending each of the

eight class sessions that met twice weekly over 4 weeks, the research assistant was also present to provide support both to the instructors as well as for additional safety monitoring and technical support to the participants. Each class began with a brief mindful art activity which provided a transition to the class and allowed the participants to "settle in." A package of class materials including art supplies had also been sent via post to all participants prior to the start of the course. Classes included developmentally appropriate hands-on exercises, short videos, games, mindful movement, music meditation, and home practice assignments to reinforce practices. Classes were held virtually over the Zoom platform. Follow-up emails were sent after each class session to recap what was learned in class. Each of the eight sessions of the program had a different theme; themes and descriptions of these sessions are found in Table 2.

Two instructors co-led the class sessions for both cohorts. One had a PhD in child and family studies and was the developer of the MSC-T program and a former classroom teacher. In addition to teaching adolescents the program, she trains teachers internationally to teach MSC-T. The other was a clinical psychologist and trained MSC-T teacher, who had undergone a 40-hr training to teach MSC-T and was also the parent of a transgender adolescent. Also, an optional 2-hr workshop was offered to caregivers of the participating adolescents between the second and third classes so that they could gain knowledge about self-compassion and support their adolescents.

## Measures

### Feasibility/Acceptability

Using established guidelines from prior literature with adolescent mindfulness and self-compassion interventions (e.g., Bluth et al., 2016; Cohen et al., 2021; Mendelsohn et al., 2010; Sibinga et al., 2008), to determine feasibility, 75% of

**Table 2** Mindful self-compassion for transgender adolescents

Session 1	Discovering Mindful Self-Compassion	Introduction to concepts of mindfulness and self-compassion, safety measures for class established, both informal and formal practices are introduced
Session 2	Paying Attention on Purpose	Concept of mindfulness, wandering mind, and default mode network discussed; mindful eating; Soles of the Feet and Palm of the Hand meditations are presented
Session 3	Kindness	Kindness is defined and kindness practice is introduced; participants create their own kindness phrases; adolescent brain development is discussed
Session 4	Self-Compassion	Exercise encourages teens to turn from the Inner Critic toward the Compassionate Voice; music meditation is introduced
Session 5	Self-Compassion vs. Self-Esteem	Difference between these 2 is elucidated, perils of social comparison is discussed
Session 6	Living Deeply	Core values exercise; Giving and Receiving meditation is introduced
Session 7	Managing Difficult Emotions	Soften, soothe, allow practice is introduced; tools to contend with anger and unmet needs are practiced; 2 developing systems of the adolescent brain are explained
Session 8	Embracing Your Life with Gratitude	Gratitude and self-appreciation practices are presented; wrap-up of course takes place via writing a letter to oneself

participants were required to attend six out of eight of the class sessions, and 75% of participants needed to be retained in the study. To assess acceptability, the 9-item Intervention Satisfaction Survey, developed for this study, was used in which five of the nine questions referred to the format of the program (i.e., 90 min long, once per week, eight sessions in duration, in a group setting, on Zoom), and four questions referred to the content of the program (i.e., enjoying the program, helps me cope with stress, likelihood to recommend to others, useful in helping trans teens cope). Acceptability was established if at an average of 75% or more of participants endorsed the four content questions. The five questions referring to the format of the program were evaluated individually.

Additionally, open-ended questions at the end of the post-course and follow-up surveys provided participants with an opportunity to share any feedback about their experience with the intervention. These responses were analyzed qualitatively (discussed later) and contributed to acceptability findings.

### **Fidelity**

Each session had a checklist which contained the key elements of that session. For example, the checklist for session 4 had four elements: (1) Art activity: First letter of name, (2) Discussion: Self-criticism and safety, (3) Exercise: Motivating Ourselves with Compassion, (4) Music meditation. For each key element, the following rating scale was used: 0 (*no evidence of that element within the session*), 1 (*slight evidence*), and 2 (*definite evidence*). The research assistant attended each session and evaluated fidelity.

### **Home Practice**

Audio recordings of guided meditation practices were uploaded on a meditation app and were accessible to all participants. Participants were asked each week to report the number of times since the last session that they accessed the audio recordings on the platform. Participants were encouraged to be honest; research team members emphasized that no grade or evaluation would be given for number of times they practiced since the last session.

The online survey was comprised of the following self-report scales:

### **Self-Compassion Scale for Youths (SCS-Y)**

This 17-item scale to assess self-compassion was adapted from the adult 26-item scale to be more accessible for younger readers. Participants respond to a 5-point scale ranging from 1 (*Almost Never*) to 5 (*Almost Always*). Total scores range between 1 and 5, with a higher score indicating

higher levels of self-compassion. Examples of scale items include “When I’m sad or unhappy, I remember that other people also feel this way at times” and “I’m really hard on myself when I do something wrong.” To compute the total self-compassion score, the mean of the items (eight of which are reverse-scored) is calculated. Validity and reliability have been established for youths age 10–15 (Neff et al., 2021), and confirmed in a subsequent study that found high reliability, discriminant validity and concurrent validity with the 26-item self-compassion scale, and measurement invariance across country and gender (Cheung et al., 2023). Omega total coefficients were 0.88, 0.93, and 0.94 for baseline, post, and follow-up respectively.

### **PROMIS Pediatric Depression Scale (PROMIS)**

This 14-item scale is a short form of the PROMIS Pediatric Depression scale created by researchers for youth between the ages of 8 and 17 to assess both cognitive and affective depressive symptoms over the previous week. Participants respond to a 5-point scale ranging from 1 (*Never*) to 5 (*Almost Always*). Scores are summed across all items, with higher scores indicating higher levels of depression. Items include “I could not stop feeling sad” and “I didn’t care about anything.” Psychometrics of this widely used scale have been established (Irwin et al., 2010; Quinn et al., 2014). Omega total coefficients were 0.91, 0.94, and 0.98 for baseline, post, and follow-up respectively.

### **Connor-Davidson Resilience Scale (CD-RISC)**

This 10-item unidimensional version revised from the original 25-item Connor-Davidson scale (Connor & Davidson, 2003) refers to the ability to adapt positively following stress or trauma (Luthar et al., 2000). Respondents chose an answer on a 5-point scale ranging from 1 (*Not true at all*) to 5 (*True nearly all the time*). Examples of items are “I am able to adapt when changes occur” and “I am not easily discouraged by failure.” Higher scores indicate higher levels of resilience. Validity and reliability for this 10-item version have been established (Campbell-Sills & Stein, 2007; Gonzalez, 2016; Kuiper et al., 2019). Omega total coefficients were 0.84, 0.88, and 0.90 for baseline, post, and follow-up respectively.

### **Interpersonal Needs Questionnaire (INQ)**

The 15-item INQ is comprised of two subscales representing two factors related to suicidal desire: perceived burdensomeness (6 items) and thwarted belongingness (9 items). Perceived burdensomeness is defined as feeling as if one is a burden to others, such

as family and friends; thwarted belongingness is experiencing the desire to be accepted by a group and not having that desire be met. Respondents endorse a response on a 7-point scale ranging from 1 (*Not at all true for me*) to 7 (*Very true for me*). Higher scores indicate higher levels of perceived burdensomeness and thwarted belongingness. Validity and reliability have been established in previous studies (Hill & Pettit, 2014; Hill et al., 2015; Van Orden et al., 2012). Omega total coefficients for perceived burdensomeness were 0.91, 0.94, and 0.94 and omega total coefficients for thwarted belongingness were 0.90, 0.91, and 0.92 for baseline, post, and follow-up respectively.

### **Gender Minority Stress and Resilience Measure (GMSRM)**

The GMSRM has 9 subscales, with 5–9 items in each subscale. For this study, we used two stress-related subscales: non-affirmation of gender identity (6 items) and internalized transphobia (8 items), and two resilience-related subscales: pride (8 items) and community connectedness (5 items). Sample items for each subscale are “I have difficulty being perceived as my gender” (non-affirmation of gender identity); “When I think of my gender identity or expression, I feel depressed” (internalized transphobia); “My gender identity or expression makes me feel special and unique” (pride); and “I feel connected to other people who share my gender identity” (community connectedness). Responses were on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Two items in the community connectedness subscale are reverse-scored. All items within each subscale are summed. Higher scores indicate higher amount of that subscale (e.g., greater internalized transphobia). Criterion, convergent, and discriminant validity have been established, as well as internal reliability of subscales (Testa et al., 2015). Omega total coefficients for each factor for baseline, post, and follow-up are as follows: non-affirmation of gender identity, 0.93, 0.96, 0.96; pride, 0.95, 0.95, 0.92; internalized transphobia, 0.91, 0.95, 0.96; community connectedness, 0.88, 0.90, 0.94.

### **Demographic and Background Questions**

At baseline only, participants completed items on age, gender, race, and parents/caregivers’ educational background that were included in the online survey.

The following measures were administered by a clinical research team member over Zoom to assess background histories of participants:

#### **Child Trauma Questionnaire-Short Form (CTQ-SF)**

This 28-item scale, administered at baseline only, is a brief version of the original 70-item scale that measures history

of maltreatment and was administered at baseline only. Items refer to history of physical and emotional neglect, and physical, emotional, and sexual abuse. Respondents are asked to endorse frequency of occurrence on a 5-point scale, ranging from 1 (*Never true*) to 5 (*Very often true*). Each subscale has five items; sum of scores for each subscale ranges from 5 to 25, and cut-offs for severity levels have been established (Bernstein & Fink, 1998). Sample items include “When I was growing up, I didn’t have enough to eat” and “When I was growing up, people said hurtful or insulting things to me.” Measurement invariance was established across four samples in both clinical and non-clinical groups; criterion validity in adolescents was also established (Bernstein et al., 2003). The CTQ-SF has been used widely and has been demonstrated to accurately report trauma history retrospectively. Omega total coefficients for each factor for baseline are as follows: emotional abuse, 0.79; physical abuse, 0.98; sexual abuse, 0.99; emotional neglect, 0.86; physical neglect, 0.79; and minimization/denial, 0.72.

#### **Brief Non-suicidal Self-injury Assessment Tool (BNSSI-AT)**

Selected items from this tool were used to assess prevalence and frequency of non-suicidal self-injury (NSSI) occurrences at baseline, post, and 2-month follow-up. Selected questions included “When was the last time you intentionally hurt yourself?” assessed on a 7-point scale ranging from 1 (*Less than 1 week ago*) to 7 (*More than 2 years ago*), “How likely are you to intentionally hurt yourself again?” with a 5-point scale ranging from 1 (*Very likely*) to 5 (*Very unlikely*), and “Approximately on how many occasions have you intentionally hurt yourself?” assessed on a 7-point scale from 1 (*Only once*) to 7 (*More than 50 times*) (Whitlock et al., 2014).

The following measure was administered by a clinical research team member at baseline (over Zoom), mid-program (for safety monitoring only via phone), post-intervention (via phone), and 2-month follow-up (via phone):

#### **Depression Symptom Index–Suicidality Subscale (DSI-SS)**

This 4-item scale measures the existence and severity of suicidal thoughts, urges, and plans that adolescents had experienced over the last 2 weeks, and was administered at baseline, midprogram (safety monitoring only), post-intervention, and at 2-month follow-up. Respondents endorse one of four levels of severity in each of four items, and scores from 0 to 3. Higher scores indicate greater suicidality. For example, for the first item, a respondent chooses among *I do not have thoughts of killing myself* (0), *Sometimes I have thoughts of killing myself* (1), *Most of the time I have thoughts of killing myself* (2), or *I always have thoughts of killing myself* (3). Omega total coefficients were 0.50,

0.89, 0.91, and 0.73 for baseline, mid, post, and follow-up respectively.

## Validity

Several questions were inserted within the outcome scales to establish validity, i.e., whether participants were carefully reading survey questions. Two questions were included in the pre-survey, and three each in the post- and 2-month follow-up surveys. These questions were (1) *Select 'Not very often' for this question*, (2) *Select 'somewhat true for me' for this question*, and (3) *Select 'almost always' for this question*. As per previous studies (Bluth et al., 2018), if a participant scored incorrectly on at least two questions, their data would not be used in the study.

## Quantitative Data Analyses

First, we conducted Fisher's exact test for categorical variables and *t*-tests for continuous variables to determine if there were differences between the two cohorts; no significant differences were found (age  $p = 0.114$ , gender  $p = 0.852$ , race/ethnicity  $p = 0.132$ , parent highest education  $p = 0.696$ , ever self-harmed  $p = 0.831$ , emotional abuse  $p = 0.612$ , physical abuse  $p = 0.355$ , sexual abuse  $p = 0.354$ , emotional neglect  $p = 0.276$ , physical neglect  $p = 0.366$ , minimization/denial  $p = 0.185$ ). We then combined the data from the two cohorts and means, standard deviations, and Cohen's *d* effect sizes were calculated (mean difference divided by pooled standard deviation). A mixed-effect model with repeated measures (MMRM) was used to examine the change in outcomes over the course of the intervention. The fixed effect of interest was time. The dependency caused by the repeated nature of the data was accounted for using participant's ID as a random effect. Cohorts 1 and 2 were first analyzed separately and then together. In the combined model, the cohorts were treated as a random effect to account for intra-cohort correlation and allow for different intercepts for each cohort, recognizing the potential for variation between them. Next, for exploratory purposes, the interaction effect between self-compassion and time was examined on suicidality (DSI-SS) using MMRM, to explore whether the change in suicide ideation is moderated by the participant's level of self-compassion throughout the study. Other moderators—INQ, GMSRM, age, gender, and childhood trauma—were examined to explore possible time interaction effects further. R version 4.3.1 was used for the analysis. Considering the low-powered nature of the data and the issue of multiple testing, effect sizes will be reported as the main results. Statistical results will be reported in the web supplement.

## Qualitative Data Analyses

Three open-ended questions at the end of the post and follow-up surveys provided participants with an opportunity to share any feedback about their experience with the intervention. These questions were (1) what did you like about the Mindful Self-Compassion classes, (2) what didn't you like about the Mindful Self-Compassion classes, and (3) is there anything else that you would like us to know about this study or your experience in the program? Responses were analyzed via reflexive thematic analysis (Braun & Clarke, 2019) with the aim of understanding course acceptability. This methodology is a flexible, iterative, and immersive approach used to identify patterns and derive meaning from qualitative data and which acknowledges researcher subjectivity and influence on coding processes and theme development. The influence of researchers' own perspectives and life experiences are important in this analysis given transgender adolescents are a vulnerable group and none of the researchers identify as transgender or are adolescents.

Two analysts collaborated to generate codes and themes. One analyst, AB, was a cisgender White undergraduate adult woman with extensive experience practicing mindfulness as a teenager (including attending retreats and mentoring queer and transgender younger teens during retreats) and with working in LGTBQ+ advocacy and who is new to qualitative methods. AB was a research assistant in this study; she enrolled all participants, had ongoing communication with participants throughout the study, and was present at all class sessions and thus had an informed perspective of the dynamics of each cohort. The second analyst, CL, was a cisgender White middle-aged woman trained in mindfulness, nonviolent communication, and self-compassion. CL has an MD degree as well as a master's degree in public health and was a co-investigator in this study, has qualitative analysis experience, was not present during class sessions, and had no communication with participants. Once drafted, codes and themes were refined via input from co-author who is a cisgender White woman and mental health provider for transgender adolescents. Thematic groupings were also reviewed by a transgender research consultant who studies transgender adolescent health. This was done in order to consider alternative views and include diverse perspectives.

To begin, each analyst familiarized themselves with the qualitative comments, tagged by cohort number and a participant ID, by reading through comments several times. CL then began by applying codes to portions of text that were salient to their experience in the course using a mix of descriptive (e.g., "disliked Zoom") and latent (e.g., "safe space," "needs validation when difficulties arise") codes using Atlas Ti 8.1. AB then used the initial code list to generate codes, noting any codes that she did not feel applied

and adding new codes as needed. The two analysts then met to reflect on and revise codes through discussion. The final code list, which dropped one code and added three new codes from the initial list, included a total of 29 descriptive and latent codes. The two analysts then worked in iterative fashion, both together and separately, to identify patterns and generate themes.

## Results

### Safety Monitoring

All safety monitoring protocols were followed throughout both cohorts. Across the two cohorts, several participants requested to be moved into a breakout room with the study psychologist. These breakout room conversations lasted no more than 5 min and always resulted in the participant re-joining the class session. No child protective services or emergency services needed to be contacted during the study. Five participants endorsed engaging in self-harm in the previous month at post-survey and seven at the 2-month follow-up survey; a mental health provider contacted participant's family in all cases within 24 hr.

### Feasibility and Acceptability

Feasibility was assessed with attendance and retention data using the metric of 75% of participants attending six out of eight sessions and 75% of participants being retained in the study. In our study, 91% attended at least six of the eight sessions (82% of those in Cohort 1 and 100% of those in Cohort 2). Only one participant dropped out of the study

(after Session 3, from Cohort 1) indicating that the program did not meet their needs; therefore, the retention rate for the study was 97%. The program met pre-established feasibility criteria and was considered feasible for these participants.

To determine acceptability, we used the 9-item Intervention Satisfaction Survey which was administered in the post-survey. As acceptability differed significantly between cohorts, we are reporting these data by cohort (Table 3). In relation to the four questions relating to the course content, while only 12% in Cohort 1 indicated that they would recommend the course to other trans teens, 94% from Cohort 2 indicated that they would do so. Further, while only 24% of Cohort 1 participants agreed with the statement that the class would be useful in helping other trans teens cope, 100% of those from Cohort 2 endorsed this statement. In summary, only 31% of participants in Cohort 1 indicated that they agreed or strongly agreed with the four content statements, while 83% of participants in Cohort 2 did so. Thus, Cohort 2 met pre-established acceptability criteria while Cohort 1 did not.

Most of the items relating to the format of the course differed between cohorts as well. For example, compared to Cohort 1, a greater percentage of Cohort 2 participants enjoyed having the class in a group setting and indicated that the timing of the class (i.e., twice a week, 1.5 hr long) worked for them. However, a similar percentage of the two cohorts agreed that having it over 4 weeks on the Zoom platform was manageable.

### Fidelity

Fidelity of each class was assessed with fidelity instruments by a research staff member who was present during each

**Table 3** Intervention satisfaction survey results by cohort (Cohort 1,  $n = 17$ ; Cohort 2,  $n = 17$ )

	Type of statement	Agreed % ( $n$ )		Disagreed % ( $n$ )	
		Cohort 1	Cohort 2	Cohort 1	Cohort 2
An hour and 30 min for each class session was just the right amount of time	Format	29 (5)	41 (7)	47 (8)	41 (7)
Having a class session twice per week was just the right amount of sessions per week	Format	59 (10)	83 (14)	18 (3)	0 (0)
Having the class sessions for 4 weeks was just the right length	Format	53 (9)	59 (10)	24 (4)	24 (4)
I enjoyed participating in the class sessions in a group setting	Format	47 (8)	83 (14)	29 (5)	12 (2)
Overall, I really enjoyed the Mindful Self-Compassion classes	Content	24 (4)	77 (13)	59 (10)	6 (1)
What was taught in the class sessions will help me cope better with stress or problems	Content	41 (7)	59 (10)	41 (7)	12 (2)
I would recommend the Mindful Self-Compassion classes to other trans teens	Content	12 (2)	94 (16)	71 (12)	0 (0)
The Mindful Self-Compassion classes would be useful in helping other trans teens cope	Content	24 (4)	100 (17)	53 (9)	0 (0)
Having the class on Zoom really worked for me	Format	59 (10)	65 (11)	6 (1)	29 (5)

Some participants indicated that "neither agree nor disagree" with statements. These cases are not included here and therefore percentages do not add up to 100%

class session. Evidence of each required element on each of the eight session fidelity instruments was endorsed, indicating that each key element of each of the eight sessions was covered appropriately (see Supplementary materials in Bluth et al., 2023a, b, for examples of fidelity instruments).

### Home Practice

The number of times that participants accessed audio recordings of practices ranged from 0 times per week to 14 times per week, with  $M=0.63$ ,  $SD=1.54$ .

### Validity

We had established a priori that if one participant responded incorrectly to two validity questions, their data would be dropped from analysis. Two participants got one question wrong each on the post-intervention survey. As neither answered any other questions incorrectly, and no other participants answered any other questions incorrectly on either the pre-intervention survey or the follow-up survey, no data were dropped from the study.

### Quantitative Data

Means and standard deviations of cohorts separately and combined at three timepoints (i.e., baseline, post, follow-up) are presented in Table 4 with effect sizes. Using Cohen's  $d$  standards of 0.2 as a small effect, 0.5 as a moderate effect, and 0.8 as a large effect (Cohen, 1988), large effect sizes are evident in suicide ideation at 2-month follow-up in both cohorts separately and when combined (Fig. 1). Thirty-six percent of those responding at follow-up ( $n=10$ ) indicated that they had no suicide ideation, and 54% ( $n=15$ ) indicated improvement in suicide ideation scores. Self-compassion also increased in both cohorts from baseline to post-intervention with moderate to large effect sizes, and then decreases slightly in Cohort 1 from post to follow-up while Cohort 2 continued to increase in self-compassion during that time interval. Effect sizes for depression were small to moderate from baseline to post, and similar to the pattern evidenced with self-compassion, depression worsened somewhat from post to follow-up in Cohort 1 and decreased during the same time period in Cohort 2. Overall, depression improved with a small effect size although 75% ( $n=21$ ) of participants indicated improved scores at follow-up. Also, the two factors in INQ (i.e., perceived burdensomeness and thwarted belongingness) also evidenced small to moderate effects over time, with greater effects on perceived burdensomeness. Resilience increased over the course of the study with a small effect size in Cohort 1 and a large effect size in Cohort 2. Among the four factors of Gender Minority

Stress and Resilience (GMSRM), the pride factor showed no meaningful change from baseline to post but then decreased to follow-up resulting in an overall moderate decrease from baseline to follow-up in both cohorts. Other factors did not evidence any noted change.

Next, we tested interactions of time with self-compassion, gender minority stressors/resilience, gender, age, or childhood trauma to determine whether those constructs moderated the trajectory of suicidal ideation (DSI-SS) over time, using a mixed-effect model with time interaction effects. Results demonstrated that self-compassion  $\times$  time interaction effect was significant,  $\text{coef} = -0.04$ , 95% CI  $[-0.07, -0.01]$ ,  $p < 0.001$  (Fig. 2). Thus, the increase in self-compassion throughout the intervention was related to a significant decrease in suicide ideation over time. Also, thwarted belongingness and time interaction effect on DSI-SS was significant,  $\text{coef} = 0.03$ , 95% CI  $[0.00, 0.06]$ ,  $p = 0.05$  indicating that an increase in thwarted belongingness was positively associated with the increase in suicide ideation over time. Childhood trauma, gender minority stressors/resilience, age, and gender did not significantly moderate the trajectory of suicide ideation over time.

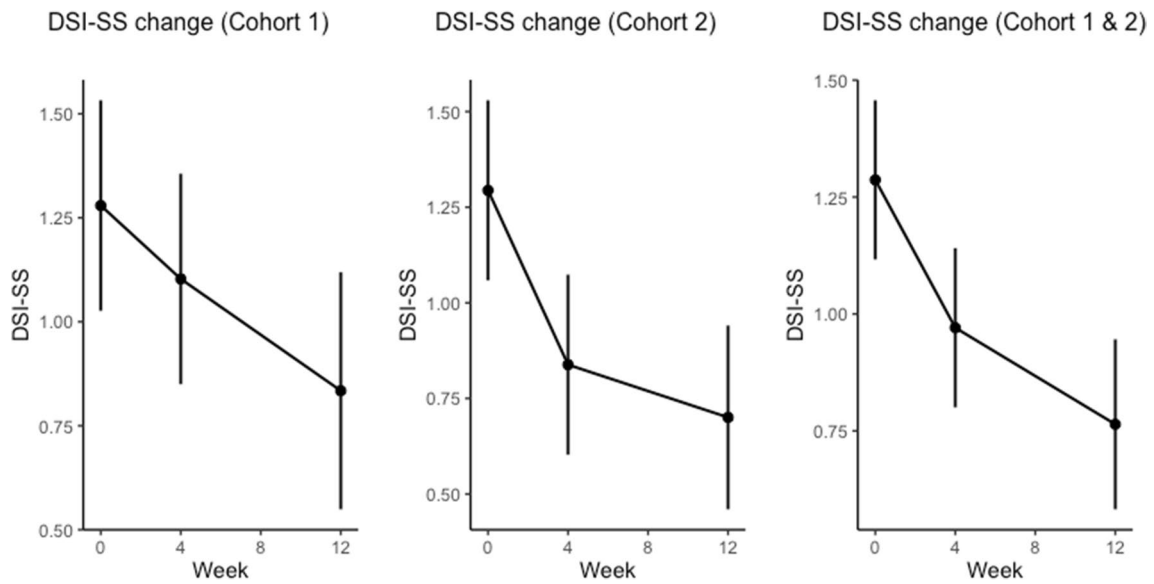
### Qualitative Data

Following the iterative qualitative process of developing codes and themes, the two qualitative analysts concurred that meaning could be derived from the data by exploring the underlying needs and desires expressed by participants regarding their experience in the self-compassion course. Guided by a list of universal human needs developed for use in nonviolent communication training (Rosenberg, 2002), which has a basis in Maslow's hierarchy of needs (Maslow, 1943), analysts examined codes for thematic patterns regarding ways participants' values/needs were both met and unmet through the course. This list included six primary categories of values/needs, each with numerous subcategories of secondary needs/values: (1) autonomy (e.g., choice, self-expression), (2) connection (e.g., partnership, support), (3) meaning (e.g., efficiency, stimulation), (4) peace (e.g., ease, harmony), (5) physical well-being (e.g., rest, comfort), and (6) play (e.g., adventure, relaxation). After several iterations and revisions where groupings were changed and renamed, as well as considering input from our research team, the analysts generated three final overarching themes, described as important needs expressed by participants in the self-compassion course: (1) experiencing acceptance and safety within a supportive community, (2) experiencing self-growth, and (3) experiencing a sense of mattering. Notably, each theme encompassed many overlapping subcategories of needs. In addition, for each theme, we discuss ways in which we perceived the value or need was met (or partially met) through the course, as well as ways the need or value

**Table 4** Means and standard deviations  $M$  ( $SD$ ) at three time points

Variable	Cohort 1 (n=17)			Cohort 2 (n=17)			Combined (n=34)				
	Baseline	Post	Follow-up	Baseline	Post	Follow-up	Baseline	Post	Follow-up		
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		
DSI-SS	1.28 (0.36)	1.10 (0.48)	0.90 (0.73)	1.29 (0.30)	0.84 (0.51)	0.69 (0.60)	1.29 (0.33)	0.97 (0.51)	0.78 (0.65)	-0.72 [-1.12, -0.31]	-0.99 [-1.45, -0.54]
Self-compassion	2.13 (0.48)	2.49 (0.61)	2.45 (0.65)	2.07 (0.38)	2.45 (0.51)	2.52 (0.65)	2.10 (0.43)	2.47 (0.56)	2.48 (0.64)	0.69 [0.28, 1.11]	0.70 [0.33, 1.07]
PROMIS	26.00 (6.56)	24.41 (6.62)	25.38 (8.75)	29.76 (4.32)	28.19 (5.44)	27.71 (7.21)	27.94 (5.76)	26.24 (6.29)	26.70 (7.86)	-0.27 [0.56, 0.02]	-0.19 [-0.50, 0.12]
CDRS	2.71 (0.59)	2.70 (0.62)	2.84 (0.70)	2.61 (0.42)	2.90 (0.56)	2.94 (0.63)	2.66 (0.51)	2.80 (0.59)	2.90 (0.65)	0.25 [-0.02, 0.53]	0.42 [0.07, 0.77]
INQ	11.46 (2.88)	11.40 (3.18)	10.92 (3.42)	12.36 (3.00)	11.34 (3.84)	11.34 (4.08)	11.94 (2.94)	11.40 (3.48)	11.16 (3.78)	-0.16 [-0.41, 0.09]	-0.29 [-0.56, -0.02]
Thwarted Belongingness	41.04 (4.23)	40.32 (2.64)	41.31 (4.63)	42.84 (3.60)	41.67 (4.50)	41.94 (4.14)	41.94 (3.96)	41.04 (4.23)	41.67 (4.32)	-0.21 [-0.50, 0.07]	-0.16 [-0.49, 0.17]
GMSRM	3.95 (0.89)	3.9 (0.94)	3.85 (1.22)	3.48 (0.88)	3.46 (1.09)	3.40 (0.89)	3.71 (0.90)	3.69 (1.03)	3.59 (1.05)	-0.04 [-0.23, 0.15]	-0.14 [-0.40, 0.12]
Pride	2.87 (0.80)	2.73 (0.85)	2.72 (0.69)	3.18 (1.11)	3.25 (1.01)	2.89 (1.02)	3.02 (0.97)	2.98 (0.95)	2.81 (0.88)	-0.10 [-0.30, 0.11]	-0.46 [-0.75, -0.16]
Internalized transphobia	3.32 (0.75)	3.32 (1.01)	3.33 (1.25)	3.04 (0.82)	3.04 (0.93)	3.08 (0.94)	3.18 (0.79)	3.18 (0.97)	3.19 (1.07)	0.00 [-0.22, 0.21]	0.02 [-0.26, 0.29]
Community connectedness	2.48 (0.83)	2.28 (0.82)	2.32 (0.82)	2.49 (0.73)	2.32 (0.79)	2.49 (0.66)	2.49 (0.77)	2.30 (0.79)	2.42 (0.72)	-0.24 [-0.53, 0.05]	-0.10 [-0.44, 0.25]

*Note:* *INQ* refers to Interpersonal Needs Questionnaire, *GMSRM* refers to Gender Minority Stress and Resilience Measure, *DSI-SS* refers to Depression Symptom Index Suicidality Subscale, *PROMIS* refers to Patient Reported Outcomes Measurement Information Systems Pediatric Depression Scale, Cohen's *d* is based on a complete case analysis. E.g., Pride measures in Cohort 2 have two missing observations (one in post and the other in follow up), and as a result, Cohen's *d* was obtained using 16 pairs for both baseline to post and baseline to follow up



**Fig. 1** DSI-SS change over time. *Note:* DSI-SS is Depression Symptom Index–Suicidality Subscale. Week 4 is post-intervention and week 12 is 2-month follow-up

could have been better met. We believe this framing is most useful for directing efforts at improving future participants’ experiences with the MSC-TA course.

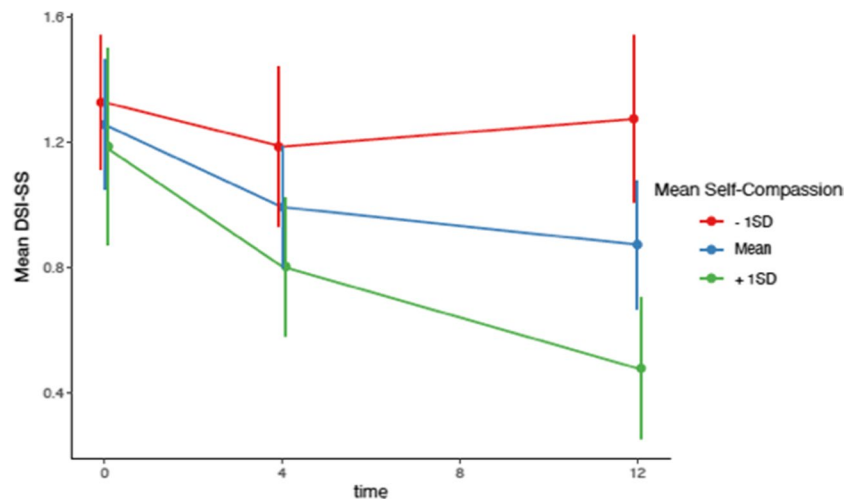
The following three overarching themes are described below. Each quote is labeled with a participant identification number (e.g., ID6) and cohort number (e.g., C1), allowing the reader to see patterns by cohort.

### Experiencing Acceptance and Safety Within a Supportive Community

This theme refers to the universal need for participants to feel connected, cared for, and belong to a community that recognizes and accepts them for who they are. For both

cohorts, an important part of this connection was simply being together with others who held the shared identity of being transgender, which allowed the rare opportunity for some to recognize they had life experiences to which others could relate. One participant expressed gratitude for “being able to meet and get to know people with similar experiences to [themselves]” (ID15/C1). Another described the unique feeling of belonging that was missing for them in other contexts, “I felt like I had a community in this class that I didn’t have anywhere else in my life” (ID33/C2). Another described how community countered feelings of isolation that they experienced in other places in their life, “I loved the group setting, it really made me feel like I wasn’t alone in what I was feeling” (ID27/C1).

**Fig. 2** Self-compassion × time interaction effect. *Note.* DSI-SS is Depression Symptom Index–Suicidality Subscale. Week 4 is post-intervention and Week 12 is 2-month follow-up



Beyond connection through shared identity, the supportive community provided a deeper sense that each community member was free to be their authentic selves, and that they would be accepted and understood by the group in an affirming way. In line with this *emotionally connected* sense of community, one participant stated, “I’ve never felt so seen by a group of people my age and who share similar identities. It was really wonderful to get to talk about our experiences without having to explain things again and again and have other people just understand and accept you and your experiences completely” (ID27/C2). For some, this deeper sense of community appeared to foster feelings of emotional safety, “I liked how it felt like a super supportive space and everyone there all struggled similarly” (ID 31/C2). Another wrote about the group, “It made me feel safe” (ID 43/C2).

The importance of community extended to the course facilitators, who some participants felt showed attributes that contributed to the sense of connection and safety. For example, one noted “everyone involved was kind and supportive” (ID50/C2), and another, “some of the staff seemed to genuinely care about us” (ID22/C1). One felt that the willingness of the facilitators to be open to their own growth and fallibility helped create community, “I liked that the teachers were also learners and that it gave me a sense of community” (ID42/C2), and another noted facilitators’ patience and willingness to be open to feedback contributed to their enjoyment of the course. Thus, the connection was not just between participants, but also facilitators and research staff were included in this circle of care and safety.

For some, particularly in Cohort 1, there were instances where participants expressed a desire for more community or connection within the MSC-TA course. A few participants felt disconnected from peers in the group who appeared to be falling asleep or using their cell phone. A group chat had been formed among participants in Cohort 1 after the first class, and one participant objected to the discussions taking place in the chat outside of class, “It made me feel icky to be part of a group of people that gossip constantly” (ID13/C1). Several participants in this cohort expressed that community and connection would have been enhanced by having transgender representation on the study team. This shared identity would help participants feel like the study team and/or course facilitators could truly relate to their challenges and life experiences, thus improving the overall sense of safety. For example, one Cohort 2 participant described that cisgender facilitators using trans-specific examples during course activities made them feel uneasy, perhaps due to this lack of shared identity, “...even though I appreciated the effort behind thinking through specific experiences trans folks might go through like being told they’re in the wrong bathroom or being misgender or deadnamed, I think it felt a bit uncomfortable coming from cis instructors” (ID7/C2).

While some participants suggested that cisgender facilitators, due to their different life experiences, must have a deep commitment to understanding the transgender experience to enhance the quality of connection and feelings of safety and authenticity within the group, others were uncomfortable with the cisgender facilitators and suggested to “have at least one older trans person (in the study) on the zoom call to help the other moderators understand the trans experience” (ID25/C1). Others went further and expressed an overall need to be watchful in today’s world and at times on the defensive. One stated “In a world where we are killed and hurt for being ourselves, we have to be active and ready to fight” (ID20/C1). This sentiment demonstrating the need to guard against anti-trans external messaging while supporting each other was echoed by another participant in the statement, “The world may not love us but we love each other” (ID23/C1).

### **Experiencing Self-growth**

This theme encompasses participants’ desire for emotional growth, increased coping skills, and a deeper self-reflective understanding of their struggles in the context of their identity. For some, the course provided these valuable growth opportunities. For example, several found the wide breadth of activities and practices allowed them the opportunities to try different techniques and find what suited their needs for emotion regulation. One wrote, “I liked building a toolkit of exercises that I can use anytime I feel overwhelmed even after the study ends” (ID46/C2). Another described gaining self-efficacy in coping, noting, “I learned many new tactics to help me cope with my anxiety and depression when I feel out of control. Learning grounding exercises has really helped me in many ways” (ID33/C2). Yet another described an increased capacity for self-care, “it was very nice and calming it helped me care for myself” (ID1/C1). Among the specific activities that participants found useful were art activities, the here and now stone, specific meditations, breathing exercises, brain science videos, and thinking of people or things they were grateful for.

For others, growth and self-understanding would be deepened by changes to the course content and structure. Some ideas for improvements included switching to in-person learning due to things like discomfort unmuting and sharing on Zoom and difficulty focusing on Zoom. In Cohort 2, some participants noted the length of sessions could be shortened to minimize fatigue and maximize engagement for learning. One wrote, “I thought the classes should’ve been 60 min not 90, just because it just felt like a lot for too long at the end of the day” (ID7/C2). Another participant expressed, “I feel like it should be in person.” (ID51, C2).

Beyond these logistical matters, some expressed the desire for more opportunity to explore their transgender

identity in order to grow in understanding about themselves and the world around them and some, particularly in Cohort 1, had the expectation that they would have the opportunity to do this within the context of the self-compassion class. For example, one participant said they wished for “time to talk other people in the study about being trans and how that affects mental health” (ID25/C1). Another expressed, “It never felt like it was about learning about the trans experience and the nuances within being self-conscious as a transgender individual” (ID27/C1). Another participant mentioned that prior to learning the coping skills of self-compassion, which was the focus of this intervention, they needed to understand why they felt what they did, and the resulting emotions that surface in the trans experience, “If you want us to improve our self-compassion we need to understand why we feel that way and we need to understand what we need help with. You cannot get better if you do not understand why you feel that way” (ID4/C1).

Another area that would enhance growth and self-understanding mentioned by some Cohort 1 participants is more frequent reminders about opting out of activities that had the potential to be triggering. For example, although the body scan was purposefully eliminated from this curriculum prior to implementation, some exercises included references to the body such as “Notice where you feel the emotion in your body” and this was triggering for some participants. Participants therefore recommended that facilitators remind them at the beginning of each exercise or meditation that they could opt out if they so desired.

### **Experiencing a Sense of Mattering**

The final theme was the desire to be valued and validated, to be seen, heard, and in some cases, contribute substantially in guiding the direction of the course. Some participants expressed appreciation that facilitators were “open to feedback” (ID18/C1), that the course was a “very laid back environment” (ID51/C2), and the facilitators provided a setting where “you didn’t have to do anything that didn’t work for you” (ID7/C2). These participants described an experience in the course that was flexible and respected the autonomy of each individual.

Meanwhile, other participants expressed a need to be heard, stating “you have to be willing to learn from \*us\* as well” (ID16/C1). Thus, as participants began to experience the support they received from one another, many conveyed a desire to spend more time with one another to explore their experiences as trans adolescents in an open, affirming environment, and were disheartened that there was a limit in the amount of time allotted for this opportunity within the parameters of the curriculum. In addition to many Cohort 1 participants sharing in a group chat outside of class, they expressed the need for more time to share their experiences

with a like-minded and understanding community within the class itself. For these participants, a less rigid curriculum which was more participant-led would better meet their most immediate needs. Some had the expectation that the course was going to be participant directed and focused on learning about the trans experience, rather than an established curriculum. As one participant stated, “She [the instructor] shouldn’t be teaching a class, she should be learning from said class” (ID16, C1). Another conveyed the desire to be fully respected and honored as multifaceted and unique, “[Courses] like this cannot be one-size-fits-all and must be made specifically with treating trans people in mind. It is a unique experience, and we have many different struggles as opposed to a cisgender person...” (ID20/C1). Overall, the need to be recognized, valued, and seen as complex and unique individuals was clear, and despite the efforts of the instructors to validate participants in class and through the follow-up email communications after class, some still did not feel that their experience was validated.

One participant summed the experience of several in Cohort 1:

I feel that the study definitely helped me learn new coping skills that I can use for uncomfortable feelings that arise due to living as a transgender individual in an unaccepting world. But, I do not think that the study itself really catered towards this issue... And while I understand that the point of this study wasn’t to address transgender issues and more about learning to be self-compassionate, I still felt a little unvalidated as a trans person... It never felt like it was about learning about the trans experience and the nuances within being self-conscious as a transgender individual. (ID27/C1)

These comments express the desire to be truly seen and understood not on a superficial level, but as complex individuals with varying identities and struggles, and who face enormous pain in a cis-dominant society.

### **Discussion**

Gender-diverse adolescents experience high rates of depression and suicide ideation, up to five times that of their cisgender peers. The goal of this open trial was to determine the feasibility, acceptability, and mental health outcomes of implementing Mindful Self-Compassion for Transgender Adolescents, a self-compassion program that had been modified to meet some of the needs of transgender and gender-diverse adolescents, within two cohorts of transgender adolescents who self-reported at least minimal levels of suicide ideation.

Notably, our main outcome, suicide ideation, decreased from baseline to post-intervention and continued to decrease at follow-up with moderate to large effect sizes in both cohorts, although the magnitude of change was greater in Cohort 2. Similarly, self-compassion increased with moderate to large effect sizes in both cohorts, and to a greater degree in Cohort 2. Mirroring this pattern, resilience increased with a small effect size from baseline to follow-up in Cohort 1, and with a larger (moderate) effect size in Cohort 2. As participants in Cohort 2 were more engaged and more enthusiastic about the program, it is not surprising that they had greater positive outcomes than Cohort 1. This overall increase in wellbeing reflected by improvements in suicide ideation, self-compassion, and resilience may have been due to the coping skills offered by the self-compassion class itself or may have been due to the support the participants provided for each other. As this study did not have a control group, this cannot be determined. However, it is likely that both the intervention content and the support the participants received from one another contributed to the positive outcomes.

In response to our first research question related to the feasibility and acceptability of the program, results indicated that the program was feasible; both attendance and retention rates for both cohorts were high, and well within the targeted acceptable rates. However, acceptability differed markedly between the two cohorts; many of the participants in Cohort 1 felt that their needs were not met by the content of the course and would have preferred to have more time than allotted to discuss and process the trans experience. Interestingly, although the content (and instructors) was identical to that offered in Cohort 2, Cohort 2 participants had a significantly more positive experience (possibly due to the modifications made between cohorts) and met the acceptability threshold. Although we may not be able to fully untangle the reasons that this difference between cohorts occurred, we can offer several possible explanations.

To fully comprehend these explanations, and in accordance with the elucidation of distal stressors identified in the minority stress theory (Meyer, 2003), it is critical to understand the sociopolitical climate and public discourse in the US at the time our study took place, in the summer of 2022 (Cohort 1) and winter of 2022–2023 (Cohort 2). First, at the end of 2021, the Human Rights Campaign declared 2021 as the deadliest year for transgender and gender non-conforming people, with at least 59 killed, and expectations that many more were unreported (Human Rights Campaign Foundation, 2021). Anti-transgender stigma and discrimination had been intensified by anti-trans legislation that had been proposed nationwide—130 bills across 33 states were introduced and 17 bills were enacted into law in 2021. Much of this legislation directly affected trans youth by preventing them from using the

bathroom consistent with their gender, receiving gender-affirming medical care, changing the sex designation on their government-issued identification documents, and playing sports on gender-affirming teams (Carlisle, 2021). Early 2022 evidenced a worsening of this trend. In January, seven more states proposed legislation further limiting rights of transgender youth. Governor Greg Abbott of Texas referred to gender-affirming care as “child abuse,” directing state officials to investigate parents and health-care providers who aided youth who were receiving care (Santoro, 2022).

Understandably, many of the participants may have come to the study apprehensive of the motives of cisgender adults who were leading a study for transgender teens, which in Cohort 1, was exacerbated by some participants who seemed to have an expectation that the study was about gaining insight into and sharing about the trans experience. Although this would have been a worthwhile goal, especially considering the national anti-trans rhetoric taking place, it was not the focus of this study. Some time was allotted within the structure of the course for discussion and sharing, but the intervention was not meant to be primarily discussion-focused or participant-led. As many trans teens do not have the opportunity to share their experience with like-minded peers, it appeared that their primary emotional need was not necessarily to learn self-compassion skills but rather to discuss shared experiences and to support one another. We strongly advise that future self-compassion classes provide ample time either before the course begins or within the course itself for teens to share their lived experience as a means of connecting with their peers.

Although this desire for more freedom to connect with and receive support from like-minded peers was essential for the teens in both cohorts, many of those in Cohort 1 seemed to have greater struggles with the program. A possible explanation for this is that a group chat (via text to personal cell phones) was created by the teens at the end of the first class session and may have served as an outlet for teens to co-ruminate about the program. Co-rumination is defined as an emotional regulation strategy by which individuals rehash problems or issues with others in an adverse light, encouraging problem talk and dwelling on negative feelings, often creating a downward spiral in which problems become reinforced (Rose et al., 2007). Co-rumination often occurs in adolescence, and although it is associated with internalizing symptoms, such as depression (Bastin et al., 2021; Rose et al., 2014; Stone et al., 2011), it also has positive social benefits. When adolescents co-ruminate, perseverating on problems with each other (Rose, 2021), this disclosure creates a sense of trust and closeness among those participating. Thus, in addition to being associated with internalizing symptoms, co-rumination is also associated with close, high-quality friendships, which

then predict greater co-rumination (Felton et al., 2019; Rose et al., 2007).

Like all adolescents, participants in this study had a need to feel connected with others, to be seen, accepted, and valued for who they were, to feel a sense of belonging with their peers, and most notably, to be recognized that as trans teens, they had something valuable to contribute to our study. These needs may have been intensified by being transgender, as current anti-trans rhetoric likely made them feel more ostracized and less accepted by society. The group chat created by the teens outside of class thus fulfilled an important need for some of the teens in Cohort 1 in that it allowed for greater connection and supported stronger relationships among the teens, including providing a place for them to affirm their rights and identities. Unfortunately, however, it seemed to have the simultaneous adverse effect of exacerbating a view that members of the research team were unsupportive of the transgender experience. Of note, our recognition of the closeness and community fostered by the group chat in Cohort 1 meant that despite the modifications to limit sharing of contact information in Cohort 2 (discussed further below), with caregiver and participant permission, we encouraged and took an active role in virtually connecting the participants of Cohort 2 after the study was completed knowing the high value of friendship among trans adolescents.

Following Cohort 1, we made modifications to ensure Cohort 2 participants had clear expectations about the purpose of the study, thereby contributing to a more productive experience. For example, when consenting Cohort 2 participants, all adolescents were required to sign a statement indicating that they would not share contact information with their peers until after the completion of the study; at this time, the research team facilitated this process for those who opted in. We also reviewed all recruitment and consent information (e.g., flyers, emails, website, consent forms) to make sure that we had indeed been clear that the study involved teaching a curriculum. After verifying this clarity in our recruitment and consent information, we took steps to further clarify them by listing the content of the course sessions. This ensured that prospective participants understood that the program was not focused on processing the trans experience or providing therapy. Finally, the research team members who consented adolescents alerted them that the instructors were two cisgender women to ensure that this was agreeable to them. These changes may have contributed to the greater acceptability in Cohort 2. In addition, it is possible that natural differences in social dynamics among the teens in each cohort also contributed to these varied experiences.

Clearly, transgender adolescents have the need to process their experiences in a safe and affirming space where others will fully understand and accept them for who they are. For

this reason, we recommend that future studies and programs like this be led by at least one instructor that is transgender. Although in a previous study in which MSC-TA was implemented (Bluth et al., 2023a, b), participants were surprised and pleased that cisgender adults cared enough to be part of a study for trans adolescents, the anti-trans rhetoric that has been pervasive in the US in the intervening years between the studies may have instilled a greater sense of apprehension among some of the adolescents in the current study.

In addition to the aforementioned moderate to large effect size decreases in suicide ideation, increases in self-compassion, and small to moderate increases in resilience, depression decreased with a small to moderate effect size in both groups from baseline to post-intervention. However, in Cohort 1, depression then *increased* between post and follow-up, but continued to *decrease* in Cohort 2. This difference between cohorts may reflect the greater increase in resilience and overall improvements of emotional wellbeing in Cohort 2. In addition, it may be that Cohort 1 returned to school—a less supportive and potentially threatening environment—soon after completing the intervention. It was somewhat surprising that larger improvements were not evidenced in depression as one would expect changes in depression to reflect that of suicide ideation. However, these sample sizes were small, and these findings would need to be confirmed with larger samples. In fact, 75% ( $n=21$ ) of participants showed improvement in their depression scores from baseline to follow-up. It may also be possible that cultivating self-compassion supports an improvement in mental health enough to decrease thoughts of suicide but not enough to improve depressive symptomology.

Interpersonal needs (i.e., perceived burdensomeness and thwarted belongingness) improved slightly over the course of the study, with perceived burdensomeness improving more than thwarted belongingness, indicating that cultivating self-compassion may help to make one feel more valued, and thus less of a burden to others. Interestingly, the gender minority resilience factor of pride was relatively stable from baseline to post, but then decreased to follow-up resulting in overall small to moderate effect sizes from baseline to follow-up. Similar to the explanation for the increase in depression from post to follow-up in Cohort 1, participants left the experience of being in the study with other like-minded trans teens to other environments which were likely less supportive. Thus, attenuation of sense of pride in being trans is understandable when moving into a setting where there is greater exposure to gender minority stressors. Alternatively, it may be that participants interpreted the items in the scale as comfort in disclosure, rather than pride in being trans. For example, items in this subscale include “It is okay for me to have people know that my gender identity is different from my sex assigned at birth” and “I have no problem talking about my gender identity and gender history to almost

anyone.” As anti-trans legislation and anti-trans rhetoric was taking place during the time the teens were engaged in the program, it may be that this contributed to their decreased comfort in disclosing. A future study with a control group would be able to help to clarify this finding.

As an exploratory analysis, we tested whether age, gender, childhood trauma, gender minority stressors, interpersonal needs (i.e., perceived burdensomeness, thwarted belongingness), or self-compassion moderated the decrease in suicide ideation in the combined cohorts. Self-compassion and thwarted belongingness were the only constructs that were significant moderators, such that those with higher self-compassion and lower thwarted belongingness experienced less suicide ideation across the study. Both of these are expected results and in accordance with extant research (Cleare et al., 2019; Suh & Jeong, 2021; Umphrey et al., 2020). These two moderators support our qualitative findings in that thwarted belongingness, the need to “belong” (Van Orden et al., 2012) speaks to our first theme, that of experiencing acceptance and safety within a supportive community, as well as the third theme, experiencing a sense of mattering; the participants felt “seen,” understood, and valued when they were with the group of other trans teens, and this may have been a critical factor in improving their mental health, specifically reductions in suicidal ideation.

Likewise, the moderating effect of self-compassion, indicating that those who were more self-compassionate experienced less suicide ideation, is also reflected in the second qualitative theme of experiencing self-growth. Participants voiced that they learned coping skills that would help them deal with emotionally difficult situations. Some specifically expressed the benefit of paying attention to oneself in a kind way, exemplified by the quote “it was very nice and calming it helped me care for myself.” Those who were better able to learn and internalize these self-compassion tools experienced greater reductions in suicide ideation. Thus, both quantitative and qualitative findings demonstrate that participants benefited both from being together in a supportive setting and learning the tools of self-compassion.

## Limitations and Future Directions

This study has several limitations. First, the sample size was small, which may limit the confidence we can have in the effect sizes. In addition, moderation results need to be interpreted with caution as they are exploratory and need to be replicated and confirmed in a larger sample. Further, adolescents were from the US and Canada, and therefore results cannot be generalized to the experience of transgender youth globally. Anti-trans discourse and legislation in the US over the last several years has undoubtedly had an influence on the participants’ lived experience, and therefore our findings may be specific to the US. A larger study

with transgender participants across the globe would better be able to represent the overall experience of this diverse population. Second, as there was no control group, it cannot be determined whether our findings are the result of the adolescents being together in a group and supporting each other or the content of the self-compassion program itself. Third, one cohort took place during the summer months and the other took place during the school year; this difference may have played a part in the differences between cohorts. Fourth, due to IRB regulations, our study required parental consent; this restricted our participants to those who had caregivers who were aware and presumably supportive of their adolescent’s gender identity, which often is not the case with transgender adolescents. Future studies should investigate the possibility of waiving parental consent. Finally, as this intervention was taught online, it was limited to those who had an internet-enabled device. It would be advantageous for future studies to supply devices to those adolescents who do not have a suitable device.

In addition to study-specific limitations, we have suggestions for future directions for researchers interested in implementing similar studies for transgender and gender-diverse teens. First, it is important that at least one instructor be transgender. This would create a much-needed immediate safe space for the adolescents, with a trans instructor also serving as a model to gender-diverse youth. However, for this to happen, it would be essential for organizations that train teachers to provide affordable and accessible pathways for training, in spaces which are safe and welcoming for those with diverse identities and backgrounds. Second, as many trans adolescents do not have the opportunity to socialize with other trans teens and discuss common experiences, we strongly recommend that ample time be provided either in several sessions before the self-compassion program begins or within the self-compassion program itself for participants to share their lived experiences. These content changes should be done in collaboration with trans adolescent advisors. Also, as many adolescents have spent a good deal of time taking classes on Zoom over the past several years and Zoom fatigue has been shown to correlate with stress and lower wellbeing (Deniz et al., 2022), it may be important to shorten class time and teach the class over 10 or 12 sessions rather than eight when teaching online.

In conclusion, transgender adolescents in our study demonstrated improvement in suicide ideation and some related emotional wellbeing outcomes. As anti-trans sentiment has continued in the US and globally, with 320 reported murders of transgender people from October 1, 2022, to September 30, 2023 (Wareham, 2023), the toll that this takes on the mental health of gender-diverse youth is unquestionable. As we continue to pursue the sociopolitical changes necessary to promote supportive, accepting spaces and relationships for trans youth in families,

schools and beyond, self-compassion programming may simultaneously offer youth the opportunity to strengthen coping through self-support and self-acceptance.

Supplementary Information.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12671-024-02421-7>.

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**Author Contribution** KB designed the study, acquired funding, was one of the instructors of the program, and contributed to writing the manuscript; AB recruited and consented participants, attended all classes, was a coder for qualitative analysis, and contributed to writing the manuscript; CL served as project manager, was involved in data collection and qualitative data analysis, and contributed to writing the manuscript; JP conducted quantitative data analysis and quantitative analyses writing for manuscript; SP served as study psychologist and contributed to manuscript writing; MC served as mental health provider and contributed to manuscript writing.

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**Data Availability** The data that support the findings of this study are available from Dr. Karen Bluth (bluth@med.unc.edu) upon reasonable request.

## Declarations

**Ethics Approval** Ethical approval was obtained from the IRB at the University of North Carolina – Chapel Hill (IRB #31-1939) which provided oversight on this study.

**Informed Consent** Informed consent took place through verbal consent from parents and verbal assent from adolescents over the phone.

**Competing Interests** Author KB declares she receives compensation to teach and train teachers in the MSC-T curriculum. All other authors have no conflicts to declare.

**Use of Artificial Intelligence** No artificial intelligence tools were used in writing this manuscript.

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