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Transgender Youth and Suicidal Behaviors: Applying the Interpersonal Psychological Theory of Suicide

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Abstract

The interpersonal psychological theory of suicide (IPT) was used to examine suicidal thoughts and behaviors among 129 transgender and gender nonconforming (TGNC) youth. Youth were categorized according to their gender identities: female-to-male (FTM), male-to-female (MTF), female-to-different-gender (FTDG), and male-to-different gender (MTDG). Higher percentages of suicidal ideation were reported by FTDG and FTM youth; and higher percentages of suicide attempts by FTDG and MTDG youth. Perceived burdensomeness and thwarted belongingness were significantly related to suicidal ideation and/or suicide attempts. Experiences of painful, provocative and harmful events and acquired capability significantly predicted suicide attempts. The findings support IPT in explaining suicidal behaviors among TGNC youth. Implications for prevention and intervention efforts are discussed.

Keywords

transgender; gender nonconforming; female-to-male (FTM); male-to-female (MTF); female-to-different-gender (FTDG); male-to-different-gender (MTDF); youth; suicidal ideation; suicide attempt; thwarted belongingness; perceived burdensomeness; interpersonal psychological theory of suicide (IPT)

While suicide accounts for 15% of the deaths among youth ages 10 to 24 in the U.S. population (National Center for Injury Prevention and Control, 2014), it is estimated to be higher among youth who identify with a sexual minority orientation, i.e., lesbian, gay, and bisexual (LGB), or identify as transgender and present with gender nonconforming behaviors (TGNC). Although actual death rates are unknown for LGB and TGNC youth in the U.S. because death certificates do not include sexual orientation and transgender identity (National Center for Health Statistics, 2012), LGB and TGNC youth have been found to report consistently higher rates of suicidal ideation and behaviors than their heterosexual and cisgender peers (e.g., IOM, 2011; Marshal et al., 2011, Mustanski, Garofalo & Emersen, 2010). Average rates of suicidal attempts among samples of LGB-identified youth are approximately 30% (National Center for Health Statistics, 2012); and there is relatively

limited data among TGNC youth (IOM, 2011). One study of 66 transgender people younger than the age of 25 reported that 47% had a history of attempted suicide (Clement-Nolle et al., 2006); and another study of 55 transgender youth, ages 15–21, reported that 45% of the youth seriously thought about taking their lives and 26% reported a history of life-threatening behaviors (Grossman & D’Augelli, 2007). A more recent study (Olson, 2015) measured suicidal thoughts and suicide attempts in transgender youth (ages 12–24; $N=96$) who sought care for gender dysphoria; 51% experienced suicidal thoughts and 30% reported ever attempting suicide. In a matched retrospective cohort study of transgender youth (mean age of 19.6; $N=360$), Reisner and colleagues (2015) found transgender youth in care (at an adolescent urban community health center) had a twofold to threefold greater risk of depression, anxiety disorder, suicidal ideation, and suicide attempts compared with cisgender matched controls. And there were no significant differences in those mental health outcomes when comparing MTF and FTM participants. Consequently, there is an elevated risk for suicidal thoughts and behaviors among TGNC-identified youth.

Defining Terms: Gender, Gender Identity, and Transgender Development

In Western society gender is socially constructed around “pink-and-blue”; therefore, “Is it a boy or is it a girl?” becomes the first question we ask when a woman becomes pregnant or a child is born. The child’s birth sex, based on its external genitalia, determines its gender assignment, and this binary gender label is considered immutable (Beemyn & Rankin, 2011; Herman 2009). If people come to experience their gender identity (how they feel) and expression (how they act) differently than their birth sex and gender assignment, often they get referred to as “transgender” or “gender nonconforming” (TGNC). These “umbrella” terms encompass other terms such as transsexual, cross-dresser, genderqueer, femme queen, and Two Spirit (Herman, 2009). Sexual orientation (i.e., attraction, identity, behavior) has no relation to gender; therefore, TGNC people may identify as gay, lesbian, bisexual, heterosexual or asexual (Herman, 2009). However, birth sex and sexual orientation, and aspects of gender (e.g., gender identity, gender expression, and gender role behavior) are regularly confused by parents, teachers, school personnel, service providers and others (Biery, 1990; Bornstein, 1994).

From earliest ages, children are taught the rules and customs to which males and females are supposed to adhere and the behaviors associated with them; through the process of gender role development they learn to identify the attributes, attitudes and behaviors that are thought to be appropriate for each sex and those which are to be avoided. In the unfolding of this process, children first identify their own sex and gender, and subsequently they learn how to express what is seen as appropriate and to avoid what is not (Perrin, 2002). In other words, gender behaviors are expressions, attitudes, aptitudes, and traits a culture or society designates to specific genders; however, gender identity is one’s private sense of understanding one’s gendered self (Perrin, 2002).

Some children or adolescents who feel dissonance between their assigned birth sex and gender identity, with its concomitant gender role expectations, may identify as transgender. However, “because of the stigma associated with any adjective beginning with ‘trans,’ many people affected by issues related to their gender identity or gender expression nonetheless

deny being transgender” (Herman, 2009, p. 3). In their recent research study, Beemyn and Rankin (2011) examined the developmental processes in the lives of transgender people. Among their findings is the fact that more than three-fourths of the people in their study indicated that they “felt different” than their peers before the age of 12. Similarly, those who described themselves as trans women (male-to-female; MTF) and trans men (female-to-male; FTM) perceived themselves as “different” at ages younger than those who were categorized as male-to-different gender (MTDG) and female-to-different gender (FTDG). Individuals who identified as MTF and FTM also indicated younger mean ages when they became aware that their gender identity was not consistent with their birth sex.

Suicidal Thoughts and Behaviors among TGNC Youth

Recent studies (Goldblum et al., 2012; Grossman & D’Augelli, 2007; Testa et al., 2012; Xavier, Bobbin, Singer, & Budd, 2005) revealed that between 38% and 83% of transgender research participants reported suicidal ideation and that approximately one-third of participants indicated a history of suicide attempts. Among those who reported suicide attempts, the majority reported a history of multiple attempts across their lifespan. These studies also found that suicidal behaviors varied based on demographic characteristics. For example, Goldblum and colleagues (2012) found that suicide attempts varied by gender groups; transgender men reported the highest rates at 32.1% and transgender women reported suicide rates at 25.5% ($N=290$). Additionally, participants of multiracial and “other” race categories indicated higher rates of suicide attempts (57.1% and 60.0%, respectively), than Caucasian, African-American, and Latino/Latina (reporting 23.0%, 25.0%, and 28.6%, respectively). Goldblum and colleagues (2012) and Xavier and colleagues (2015) reported that the rates of suicidal ideation were highest among younger transgender respondents.

A new analysis of responses to the National Transgender Discrimination Survey (NTDS) focused on key characteristics and experiences associated with life-time suicide attempts among transgender and gender non-conforming adults (Herman, Haas, & Rodgers, 2014). With over 6,000 respondents, ages 18–98, the NTDS is the largest survey of TGNC people; in the new analysis researchers developed a six-category gender identity code in order to examine variations of lifetime suicide attempts among different subgroups of TGNC people. Among the key findings: the prevalence of suicide attempts was (a) slightly higher among trans men (46%) and trans women (42%) than the full sample (41%); (b) highest among those who were youngest (18–24: 45%); (c) higher among those who experienced physical or sexual violence at school (78%); and (d) higher among those who experienced family rejection (57%). Additionally, more than 50% of the respondents who reported lifetime suicide attempts also reported being “harassed or bullied” at each school level—elementary, junior high/middle school, high school and college. Trans women (MTF), trans men (FTM), and female-assigned cross-dressers had the highest prevalence of lifetime suicide attempts (42%, 46%, and 44% respectively). With regard to race/ethnicity, over 50% of the respondents who reported lifetime suicide attempts identified as “Multiracial or Mixed Race/Ethnicity” or “American Indian or Alaska Native Alone,” while those who identified as “Asian or Pacific Islander Alone,” “Black or African American Alone,” and “Hispanic or Latino Alone,” or “White Alone” reported prevalence rates of 39%, 45%, 44%, and 38%,

respectively. Differences in these distributions, when compared to the Goldblum and colleagues (2012) report, may be explained by the size and diversity of the samples, or by the method of asking transgender adults about lifetime suicidal behaviors, which may relate to selective recall or reinterpretations of past suicidal behaviors in light of more recent life events.

Suicidal thinking and behaviors among TGNC youth has been understood in the context of transgender-related stigma, oppression, discrimination and victimization (Greytak, Kosciw, & Diaz, 2009; Grossman & D'Augelli, 2006; Kosciw, Greytak, Palmer, & Boesen, 2013). Additionally, harassment and fear of rejection may place TGNC youth at risk developmentally, emotionally, socially and physically (Grossman & D'Augelli, 2006). For example, Kosciw and colleagues (2013) reported that almost all transgender students in their study ($N = 709$) had been verbally harassed (e.g., called names or threatened) in the past year at school because of their sexual orientation (60.9%) and their gender expression (73.6%); similarly, over half of the TGNC students had been physically harassed (e.g., pushed or shoved) because of sexual orientation (28.6%) or gender expression (32.5%). Additionally, more than a quarter of the TGNC students in the study reported being physically assaulted (e.g., punched, kicked or injured with a weapon) based on their sexual orientation (15.5%) and their gender expression (16.2%). In a subset of a recent large study of "LGB&T Mental Health" conducted in England, TGNC young people ($n = 27$) were compared to their cisgender counterparts ($n = 458$); and their rates of lifetime suicidal ideation and suicide attempts were found to particularly high (Nadin, Peel, Tyler, & Rivers, 2015). Almost 90% of the TGNC young people (i.e., 88.9%) reported lifetime suicidal ideation compared to 59.4% of their cisgender counterparts, while 48.1% of TGNC young people reported lifetime suicide attempts compared to 26.2% of their cisgender counterparts.

In general, mental health disparities between people who identify as TGNC or LGB and their heterosexual and cisgender peers have been attributed to the stigma, harassment, discrimination, victimization, and the resulting minority stress experiences. According to minority stress model, responses to these types of stresses accrue over time, eventually leading to chronic stress and poor physical or mental health, which may include suicidal thoughts and behaviors (Bockting et al., 2013; Meyer, 2003; Dohrenwend, 2000). Further, within all subgroups, younger members (under ages 24 and 25) experience greater degrees of negative mental health outcomes and suicidal behaviors than adults. While the studies support the association between the previously noted factors leading to minority stresses and an outcome of suicidal behaviors among TGNC and LGBT youth (IOM, 2011), the direct means by which such factors influence these suicidal thinking and behaviors is not clear. The framework selected for the current study is the interpersonal theory of suicide (IPTs; Joiner, 2005; Van Orden et al., 2008, 2010), which asserts that stressful social experiences are associated with two psychological states i.e., thwarted belongingness and perceived burdensomeness, when simultaneously held long enough lead to suicide desire (i.e., suicidal ideation).

Interpersonal Psychological Theory of Suicide

The interpersonal psychological theory of suicide (IPTS) is a suicide model that is the first to use a desire-capability framework, in which different explanations are described for suicidal desire and for the capability to act on that desire (Joiner 2005). The desire for death is an individual's wish to end his or her own life, and it is equivalent to the common definition of suicidal ideation (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). The IPTS posits two major concepts: first, *thwarted belongingness* and *perceived burdensomeness*, when perceived as unchanging, combine to create suicidal ideation. Second, the *capability to enact self-harm* is acquired over time by being exposed to painful and provocative events that lead to elevated physical pain tolerance (Van Orden et al., 2010).

Thwarted belongingness, one of the strongest components and most reliable predictors of suicidal ideation, is a lack of interaction with others (e.g., social isolation, lack of social connectedness, loneliness), a lack of reciprocally caring relationships, and few to no social supports (Joiner, 2005; Van Orden et al. 2010). For TGNC people, social isolation is often a result of rejection from families, friends, and peers (Hendricks & Testa, 2012). Perceived burdensomeness results from a sense of one's ineffectiveness and incompetence, for example, feeling that the self is so flawed as to be a liability to or a burden on others who are important in one's life (including but not limited to family members) and is accompanied by affectively laden cognitions of self-hatred (Van Orden et al., 2010). Life situations such as homelessness and unemployment, which are of high incidence among TGNC people, may result in feelings of perceived burdensomeness, self-blame and internalized transphobia (Hendricks & Testa, 2012). According to the IPTS, the capability of killing oneself, "involves fearlessness about confronting pain, injury, and indeed death" (Joiner, 2005, p. 92) and is acquired through "repeated experiences with painful or provocative stimuli, especially (but not limited to) deliberate self-injury" (Joiner, 2005, p. 92). For TGNC people, such painful events can include harassment, violence, and discrimination. In addition to acquiring the capability for lethal self-injury and habituation to the fear and pain involved with them, there is a strengthening of opponent processes in response to fear and pain, i.e., what was originally painful or frightening becomes less so as well as a source of emotional relief (Van Orden et al., 2010).

Several studies have begun to test the IPTS in samples of adolescents, as well as in samples of sexual minorities. Using a sample of undergraduate students (n = 339; mean age = 19) in the United States, Van Orden and colleagues (2008) found that perceived burdensomeness was significantly associated with suicidal ideation, yet there was no main effect of thwarted belongingness on the suicidal ideation. However, the interaction between perceived burdensomeness and thwarted belongingness was significant, which suggests that thwarted belongingness is significantly associated with suicidal ideation as a function of perceived burdensomeness. Specifically, thwarted belongingness was positively associated with suicidal ideation only at high levels of perceived burdensomeness (i.e., 90th percentile) but there were no significant associations at low and medium levels. Also, Van Orden and colleagues (2008) found that perceived burdensomeness was significantly associated with suicide attempts. Consistent results were found in a more recent study of 876 lesbian, gay, and bisexual adolescents from three U.S. cities: Perceived burdensomeness was the critical

mechanism for explaining depression and suicidal ideation (Baams, Grossman, & Russell, 2015). Finally, Plöderl and colleagues (2014) found that perceived burdensomeness, thwarted belongingness, and acquired capability were each significantly correlated with suicidal ideation among both sexual minority and heterosexual groups.

Current Study

The current study examined suicidal ideation and suicide attempts among a community sample of TGNC youth. The study is unique for two reasons: (a) it employed the perspective of one of the theoretical suicide models that has been applied limitedly in research about sexual minority people (Plöderl et al., 2014); and (b) rather than studying TGNC youth as a single group or with other sexual minority youth who embrace society's gender binary categories (Mustanski, Garofalo, & Emerson, 2010; Mustanski & Liu, 2013; Russell & Joyner, 2001), the participants in this study were categorized into four diverse gender identity groups (Beemyn & Rankin, 2011) based on their self-recognized gender identities: FTM (female to male), MTF (male to female), FTDG (female to different gender), and MTDG (male to different gender).

Research Questions

The research questions explored in this study were as follows:

RQ1: Which demographic characteristics are associated with suicidal ideation among TGNC youth?

RQ2: Are the presence of perceived burdensomeness and thwarted belongingness associated with suicidal ideation among TGNC youth?

RQ3: Are suicidal ideation and painful and provocative events associated with the capability of self-harm among TGNC youth?

RQ4: Which demographic characteristics are associated with suicide attempts among TGNC youth?

RQ5: Is a greater prevalence of suicidal ideation and the capability of self-harm associated with a greater prevalence of suicide attempts among TGNC youth?

Method

Data presented in this report are based on a community sample of self-identified transgender and gender nonconforming youth (TGNC) from the first panel of longitudinal study designed to examine the risks and protective factors for suicide among sexual minority youth. The youth were recruited in three U.S. cities (located in the Northeast, Southwest, and on the west coast) from community organizations and college groups for LGBTQ youth, by invitations placed on websites frequented by LGBTQ youth in those cities, and by inviting youth participating in LGBTQ Pride activities. Snowball sampling was employed and successful in enhancing the diversity of participants (e.g., race, ethnicity, non-organizational membership). The project was advertised as a study exploring the developmental experiences of growing up lesbian, gay, bisexual, and transgender youth, ages

15 to 21, in today's society. Youth wishing to participate were requested to contact the research coordinator at the site in the respective city. The assessment procedure consisted of administering a survey packet focused on questions related to birth sex, sexual orientation (i.e., attraction and identity), gender identity, and sexual and gender developmental milestones; standard measures of various aspects of psychosocial adjustment and mental health; and measures that had been developed to appraise the various constructs of the IPTS before the study began in 2011.

Because seeking parental consent could place the youth at risk of exposure of their sexual and gender identities or lead to harm, parental consent was waived. In place of parental consent, a youth advocate was available to discuss questions about the study and youths' potential participation for those between the ages of 15 and 18; additionally, assent procedures were implemented for youth under the age of 18. The procedures and materials of the study were approved by the institutional review boards of New York University and the University of Arizona; and a federal certificate of confidentiality was obtained to protect information provided by the participants. All approvals included a debriefing process that contained an assessment of participants' current suicidal thinking, plans as well as their access to resources to implement self-harm behaviors. These assessments did not lead to any mandated reporting or necessary referrals; however, brochures listing no-cost mental health services were given to all participants who wished to take them. Data for this study was collected between November 2011 and October 2012.

Participants

Of the 129 TGNC participants, 58 (45%) were from the Northeast, 51 (39%) from the west coast, and 20 (16%) from the Southwest. With regard to subgroups, 44 (34%) youth identified as MTF, 40 (31%) as FTM, 14 (11%) as MTDG, and 31 (24%) as FTDG. There were no significant differences between sites with regard to the proportion of youth in each group based on self-recognized gender identities.

The mean age of the 129 participants was 18 years ($SD = 1.74$). Using the four subgroups previously described by Beemyn and Rankin (2011), the mean age of the trans men (FTM) was 18.73 ($SD = 1.72$), trans women (MTF) was 19.02 ($SD = 1.69$), male to a different gender (MTDG) was 18.57 ($SD = 1.83$), and female to a different gender (FTDG) was 18.26 ($SD = 1.79$). There was no significant difference in ages of the youth among the groups.

The 129 participants were ethnically and racially diverse, with 31.8% indicating they were Hispanic/Latino. With regard to race, 32.6% reported they were White/Caucasian/Anglo/European American, 31.8% Black/African American, 8.5% American Indian/Native American/Alaskan Native, 7.8% Asian or Asian American (Chinese, Japanese, Korean, and others), 1.6% Native Hawaiian or other Pacific Islander, and 16.3% multi-racial. The remaining 1.6% did not report a race.

Measures

Suicidal ideation and attempts

Interpersonal Needs Questionnaire (INQ; Van Orden et al., 2008): The suicidal ideation components of the IPTS were assessed with the *INQ*, which consists of two subscales: thwarted belongingness and perceived burdensomeness. The thwarted belongingness scale consists of 5 items (e.g., “These days, I feel disconnected from other people.”) and perceived burdensomeness scale consists of 7 items (e.g., “These days, the people in my life would be better off if I were gone.”). Participants rated the items on a 7-point scale: “1” (not at all true for me) to “7” (very true for me), with higher values indicating greater levels of the two INQ constructs. Van Orden et al. reported internal consistency values of $\alpha = .85$ for thwarted belongingness and $\alpha = .89$ for perceived burdensomeness from the validation study. In the present sample, internal consistency values were $\alpha = .68$ for thwarted belongingness and $\alpha = .88$ for perceived burdensomeness.¹

Painful and Provocative Events (PPES; Bender, Gordon, & Joiner, 2007; Van Orden et al., 2008): The PPES measured the participants’ experiences with that component of the IPTS, using a 25-item scale (e.g., “Have you been in physical fights?” “Have you been stabbed?” “Have you been a victim of physical abuse?”). Participants rated the items on a 4-point scale: “1 (never)”; “2 (once)”; “3 (2–3 times)”; “4 (4–20 times),” with higher scores conveying greater experiences with painful and provocative events. Bender and colleagues (2007; as cited in Van Orden et al., 2008) reported an internal consistency value of $\alpha = .71$ for the PPES; and in the present sample, the value was $\alpha = .79$.

Acquired Capability Suicide Scale (ACSS; Bryan et al. 2010; Van Orden et al., 2008): The ACSS measured whether or not the participants acquired the capacity for the self-harm component of the IPTS with a 5-item scale (e.g., “I can tolerate a lot more pain than most people.” “I am not at all afraid to die.”). Participants rated the items on a 5-point scale: “0” (not at all like me)” to “4” (very much like me). Higher scores indicate a greater tolerance for pain and less fear of dying. Bender and colleagues (2007, as cited in Van Orden, et al., 2008) reported an internal consistency value of $\alpha = .85$ for the ACSS; and in the present sample, the value was $\alpha = .71$.²

Self-Harm Behavior Questionnaire (SHBQ; Gutierrez & Osman, 2008): Participants were requested to report previous experiences with self-harm behaviors on two of the four subscales of the SHBQ: (a) suicidal ideation (e.g., yes/no, frequency of thinking or talking about wanting to die or killing oneself, method), and (b) attempted suicide (e.g., yes/no, frequency of times one tried to hurt oneself badly or to kill oneself, method) (Gutierrez & Osman, 2008). The responses to the two subscales were used to report descriptive statistics of the 129 participants, analyze the data in relation to the IPTS, and examine if there were differences by subpopulations. The suicidal ideation subscale consists of five items ($\alpha = .83$), and the suicide attempt subscale consists of six items ($\alpha = .96$). The specific scoring

¹We have become aware there are updated versions of the INQ, but they were not in the published literature when data collection for the present study began; for details see Van Orden, Cukrowicz, Witte, & Joiner, 2012.]

²We have come aware of a more recent version of the scale exists containing 20 items, it was not in the published literature when data collection began for the current study (for details see Smith, Wolford-Clevenger, Mandracchia, & Jahn 2013).]

procedures weigh the number of activities and the types of activities. For example, the scoring ranges from: overdose (OD) on one substance, small (e.g., 10 pills or less = 1); OD on the same substance, large (e.g., 10 pills or more = 2); OD on two or more of mixed/odd substances (= 3); and “Traumatic/lethal – hanging, suffocating, jumping from height, or the use of fire arms = 4).

Demographic Characteristics: In the final section of the survey packet, participants were asked to report on demographic characteristics, including those related to age, ethnicity, race, birth sex, gender identity, sexual identity, and religion. Age was assessed in years; and following federal reporting guidelines, ethnicity was assessed as being Hispanic/Latino or not. Race was assessed using seven standard categories, with “write-in” as an additional option. Because of the small values reported in some categories, the racial categories used for analyses were: White, Caucasian, Anglo, or European American; Black or African American; Multi-Racial; and “Other.” Participants were requested to report their birth sex (i.e., male, female, intersex); gender identity (i.e., man, woman, trans man, trans woman, queer, write-in); and sexual identity (i.e., gay; lesbian; bisexual: mostly gay or lesbian, equally gay/lesbian, and heterosexual/straight; heterosexual/straight; or questioning/uncertain, don’t know for sure).

The youths’ responses to the questions regarding their birth sex and gender identity were used to categorize the youth into four mutually exclusive categories: trans men (FTM), trans women (MTF), male to a different gender (MTDG) and female to a different gender (FTDG). If participants reported their birth sex as female but their gender identity as trans men or men, they were classified as trans men (FTM); if participants reported their birth sex as male but their gender identity as trans women or women, they were classified as trans women (MTF); if participants reported their birth sex as male but reported their gender identity as genderqueer, they were classified as male to a different gender (MTDG); if participants reported their birth sex as female but reported their gender identity as genderqueer, they were classified as female to a different gender (FTDG). When participants described their own gender identity, these responses and the indicated birth sex were examined, and they were categorized to either MTDG or FTDG (Note: None of the participants indicated that they are intersex).

Youth were asked to report their religion or to indicate that they did not have a religion. If the youth reported a religion, they were asked how often they attended religious or spiritual services (i.e., never, less than once a month, one to three times a month, about once a week, or more than once a week).

Analytic Approach

The main purposes of statistical analyses were to find the potential effects of thwarted belongingness and perceived burdensomeness on suicidal ideation among TGNC youth, and the associations of painful and provocative events and acquired capability to explore the effects on suicide attempts as described within the framework of the IPTS. The data analyses were conducted with R 3.0.2 (R Developmental Core Team, 2014) and IBM SPSS Statistics 21. In order to test if selected demographic variables or potential risk factors influenced on

suicidal ideation or suicide attempts, we conducted regression analyses. The two outcome measures, suicidal ideation and suicide attempts, were not normally distributed but were positively skewed; the skewness for suicidal ideation was 0.59 ($SE = 0.24$) and the skewness for suicide attempts was 1.39 ($SE = 0.22$). Also, the two measures only allowed countable positive integers as possible observations. In order to accommodate such characteristics, Poisson regression was used to model the two response variables i.e., suicidal ideation and suicide attempts. The Poisson regression is a type of nonlinear regression model and is useful when the outcome measure is a count, with large-count outcomes being rare events (Kutner, Nachtsheim, & Neter, 2004). On the other hand, because the measure of acquired capability is continuous and its distribution was approximately normal, we fitted a multiple regression model using ordinary least squares method.

First we conducted a regression analysis to find if any of the demographic characteristics had an influence on suicidal ideation. As listed in step 1 of Table 2, we entered demographic variables including (a) gender identity, (b) race, (c) age, (d) ethnicity (Hispanic or “other”), and (e) religious service attendance. Note that the race variable, included four mutually exclusive categories: White/Caucasian (i.e., White; Caucasian; Anglo; European American), Black/African American, Multiracial, and “Other” (i.e., Asian or Asian American; American Indian, Native American; Alaskan Native; Native Hawaiian or other Pacific Islander). To quantify the categorical variable, three dummy variables were created to indicate Black/African American, Multiracial, and “Other” categories; White/Caucasian was treated as a baseline category. Similarly, the gender identity variable included four categories: trans women (MTF), trans men (FTM), male to a different gender (MTDG), and female to different gender (FTDG). Therefore, three dummy variables were created to indicate FTM, MTDG, and FTDG categories; the MTF group was treated as a baseline category.

Results

Descriptive Findings

Similar to the findings of Beemyn and Rankin (2011), those identified as FTM and MTF reported younger mean ages when they became aware that their gender identity was not aligned with their birth sex: FTM (10.06 years) and MTF (11.55 years) compared to FTDG (13.65 years) and MTDG (12.56 years). When asked to report the age at which they first became aware that other people called themselves transgender, transsexual, trans men, trans women, or genderqueer, the MTDG group was aware at a younger mean age ($M=10.90$, $SD = 6.08$) than those of the other groups, i.e., MTF ($M = 13.88$, $SD = 3.84$), FTDG ($M = 14.60$, $SD = 2.35$), and FTM ($M = 14.68$, $SD = 2.54$). However, when asked about first telling someone that they were TGNC, those whose birth assignment was male disclosed at younger ages than those whose birth assignments were female: MTF ($M = 15.34$, $SD = 3.79$) and MTDG ($M = 15.50$, $SD = 2.62$) versus FTM ($M = 16.52$, $SD = 2.49$) and FTDG ($M = 16.06$, $SD = 2.54$). The majority of members of each group reported that they selected a “preferred” name that differed from the name assigned to them at birth, with a lower percentage of MTDG (50%) doing so than the other groups, i.e., trans women (87.5%), trans men (87.5%), and FTDG (68.4%).

With respect to religious service attendance, 67.8 % reported they do not have a religion and never attended religious services. Of the remaining 32.2%, 14.9 % attended less than a month, 6.6 % attended one to three times a month, 7.4 % attended about once a week, and 3.3 % attended more than once a week.

Overall, 61 (50.8%) of the TGNC youth reported past intentional self-harm, and 21 (18.3%) reported having made suicidal threats. Suicidal ideation (with thoughts or plans of taking one's life) was reported by 52 (49.5%) of the youth, and having made past suicide attempts (with intention to die) were reported by 29 youth (24.4%). There were no significant differences between sites regarding the average rate of suicidal ideation and suicide attempts. With regard to the four subgroups of the participants categorized by gender identity, it is noted that greater percentages of the FTDG youth reported lifetime suicidal ideation (73.9%) and suicide attempts (46.4%) than the other three identity groups, i.e., MTF, FTM, and MTDG (see Table 1).

Effects on Suicidal Ideation

The model in the step 1 contained the demographic characteristics (Table 2) and was significant in predicting suicidal ideation ($X^2 (df = 9) = 97.60, p < .001$). Specifically, there were significant differences among gender identity groups; youth who identified as members of the FTM group ($B = 0.59, X^2 = 12.58, p < .001$) and the FTDG group ($B = 0.80, X^2 = 22.25, p < .001$) showed a greater degree of suicidal ideation, compared to the baseline group, i.e., MTF group. In particular, suicidal ideation for the FTM group was 1.80 times higher than for MTF group and suicidal ideation for the FTDG group was 2.22 times higher than for MTF group. However, there was no difference in suicidal ideation between youth in the MTDG and the MTF groups. Pairwise comparison among each of the four groups showed that suicidal ideation in the FTDG group was 2.48 times greater for the MTDG group, and suicidal ideation in the FTM group was 2.02 times higher compared to the MTDG group.

Additionally, the results suggested there were racial differences: the White/Caucasian group reported greater suicidal ideation than other groups ($B = -0.84, X^2 = 13.99, p < .001$). However, there were no differences based on ethnicity; there was no difference in suicidal ideation between Hispanic and non-Hispanic groups. With respect to religious service attendance, suicidal ideation was lower ($B = -0.47, X^2 = 20.37, p < .001$) with more frequent religious services attendance.

Next we fitted a model (step 2 in Table 2) to validate the IPTS after statistically controlling for gender identity, race, and religious service attendance (factors which were significant in step 1). The results showed that both thwarted belongingness and perceived burdensomeness were independently associated with suicidal ideation, but when included in the same model, only perceived burdensomeness ($B = 0.29; X^2 = 40.59; p < .001$) was positively associated with suicidal ideation. There was no significant interaction effect between the two variables.

Effect on Acquired Capability

In order to statistically test whether acquired capability to enact lethal self-harm is associated with exposure to painful and provocative events and/or suicidal ideation, we used multiple linear regression. We found that the model was statistically significant for

predicting the acquired capability ($F(2,102) = 4.63, p = 0.012$): More painful and provocative events were associated with greater acquired capability ($B=0.66, SE=0.24, t(102)=2.74, p=0.007$). However, suicidal ideation was not significantly associated with acquired capability.

Effects on Suicide Attempts

From step 1 of Table 3, we entered demographic characteristics including (a) gender identity, (b) race, (c) age, (d) ethnicity (Hispanic or other), and (e) religious service attendance. The model significantly predicted suicide attempts ($X^2 (df = 9) = 183.31, p < .001$). Specifically, youth in the FTDG group ($B=0.95; X^2 = 39.57; p < .001$) showed more suicide attempts compared to those in the MTF group. In particular, the FTDG group were 2.60 times more likely to report suicide attempts compared to the MTF group. As a result of pairwise comparison among each of the four groups we found that the FTDG group also showed more suicide attempts than FTM (2.91 times) or MTDG (1.74 times) groups, and the MTDG group reported more suicide attempts than FTM group (1.67 times).

As indicated in the step 1 (Table 3), non-Hispanic youth attempted suicide significantly more often than Hispanic youth ($B= 1.09, X^2 = 41.03, p < .001$), and youth who were White/Caucasian reported more suicide attempts than those who were Black/African American ($B= -0.61, X^2 = 10.75, p = 0.001$). More frequent religious service attendance was associated with fewer suicide attempts ($B= -0.26, X^2 = 14.44, p < .001$).

Step 2 of Table 3 shows the results for the Poisson regression model for the effects of suicidal ideation and acquired capability as predictors of suicide attempts when statistically controlling for gender identity, race, ethnicity, and religious service attendance (factors which were significant in step 1). The model significantly predicted suicide attempts ($X^2 (df = 10) = 357.03, p < .001$). Suicidal ideation was associated with suicide attempts ($B= 0.21, X^2 = 106.29, p < .001$), and a greater degree of acquired capability for self-harm ($B= 0.30, X^2 = 16.79, p = 0.001$) was associated with more suicide attempts.

The concluding combined model was significant in predicting suicide attempts ($X^2 (df = 14) = 423.60, p < .001$). The results show that perceived burdensomeness ($B=0.22, X^2 = 5.90, p=0.015$) and thwarted belongingness ($B= 1.06, X^2 = 17.16, p < .001$) both had significant associations with suicide attempts. Also, painful and provocative events ($B= 3.42, X^2 = 42.21, p < .001$) were associated with suicide attempts. Interaction effects among the three variables were also examined. The results showed that there were no significant interaction effects between perceived burdensomeness and painful and provocation events; and between perceived burdensomeness and thwarted belongingness. However, there was a significant interaction effect between thwarted belongingness and painful and provocative events ($B= -0.66, X^2 = 29.47, p < .001$).

To interpret how the effect of thwarted belongingness on the suicide attempts was moderated by painful and provocative events, we categorized the variable into two levels i.e., (a) youth who experienced almost no painful and provocative events if their average scores are less than “once”; and (b) youth who experienced moderate amount of painful and provocative events if their average scores are greater than equal to “once”. Note that there were no youth

whose average scores were greater than “2–3 Times”. As a result, we found that the thwarted belongingness has a significant positive association with suicide attempts only for those who experienced moderate amount of painful and provocative events. On the other hand, the effect of thwarted belongingness was not significant for those who experienced almost no painful and provocative events.

Discussion

We examined the constructs of the interpersonal-psychological theory of suicide (ITPS; Joiner, 2005) among a community sample of transgender and gender nonconforming (TGNC) youth. This study is the first of which we are aware that applies the IPTS to a sample of TGNC youth, and the first to examine suicidal behaviors in relation to diverse gender identities among TGNC youth. Components of the IPTS explained suicidal ideation and suicide attempts among TGNC youth; however, we note that thwarted belongingness was not a predictor of suicidal ideation when perceived burdensomeness was present in the model. In future research with TGNC youth, we suggest using INQ-10 or INQ-15, which indicate that thwarted belongingness, perceived burdensomeness, and their interaction terms are significantly independent predictors of concurrent suicidal ideation in regression models, than when INQ-12, INQ-18, and INQ-25 are used (Hill et al., 2014). We found that there were differences in both suicidal ideation and suicide attempts across gender identity subgroups of the current sample of TGNC youth.

Consistent with research findings among other groups, it is important to note that only a subset of those people who think about suicidal behaviors go on to engage in them (World Health Organization, 2000). Thus, investigations of potential mechanisms for suicidal behaviors are especially important for vulnerable populations such as TGNC youth. It is notable that higher frequency of religious service attendance among the TGNC youth who reported having a religion was associated with fewer suicide attempts. This finding is consistent with previous findings that indicate regular participation in religious activities is a protective factor of both lethal and non-lethal suicide attempts (Blackmore, et al. 2008; Stack, 1998). Additionally it is notable there were no significant differences among TGNC youth who attend religious services by ethnicity. This is inconsistent with previous findings that have shown differences among race and ethnicity in relation to religious service attendance, e.g., Black adolescents report higher religiosity than other racial groups and exhibit higher levels of religious service attendance than white adolescents (Wallace, Forman, Caldwell, & Willis, 2003). Future studies should examine other factors that have been found to be protective against suicidal ideation and attempts among TGNC youth, including self-esteem (Nadin, Peel, Tyler, & Rivers, 2015), knowledge of other TGNC people before their own transition (Testa & Hendricks, 2015), and family acceptance (Ryan, Russell, Huebner, Diaz, & Sanchez, 2010)

TGNC youth are not only stigmatized, marginalized and discriminated against because they violate the conventional binary classifications of gender role expectations associated with their assigned birth sex, but also because they present gender identities and expressions that “contradict” socially prescribed gender behaviors dictated by their assigned birth sex (Grossman & D’Augelli, 2006; Lombardi, 2009; Nuru, 2014). Nuru contended that TGNC

identities are distinct from lesbian, gay, bisexual, and questioning (LGBQ) identities and involve unique processes of gender-identity negotiation. Although there are some similarities between gender identity and sexual orientation, there is no necessary correspondence (Booth, 2011; Nuru, 2014). TGNC people have unique challenges such as experiencing “more difficulty in the negotiation of identity based on conflicting ideas of self, the enactment of self, and the role of self in relation to others” (Nuru, 2014, p. 282). These challenges coincide with the tasks of psychosocial milestones in puberty and adolescence such as developing a personal sexual identity, acquiring an appropriate gender (sex) role, achieving a sense of belonging, and accepting oneself as a person worthy of affection (Remschmidt, 1994). Although some TGNC youth understand their gender identity as their individual sense of being male (i.e., FTM) or being female (i.e., MTF), others identify gender as being between or outside of traditional binary gender norms; therefore, some of the participants were categorized as female-to-different gender (FTDG) and male-to-different gender (MTDG) based on their reported gender identities (Beemyn & Rankin, 2011). Additionally, the digital age (e.g., Internet, digital texts) reinforces to TGNC people that they do not have to rely on or to embrace only two genders (Siebler, 2012).

Hendricks and Testa (2012) used the stress processes identified in the minority stress model (Meyer, 2003) in relation to LGB people to conceptualize the experiences of transgender and gender nonconforming individuals in relation to the IPTS. In relation to loneliness, social disconnectedness, and an absence of reciprocal care (aspects of the construct of thwarted belongingness), Hendricks and Testa (2012) indicated these states may result from rejection by family members, friends or coworkers who are unwilling to accept the person’s transgender status. Few options for support exist in a society that is generally not accepting of gender nonconformity; and exposure to harassment, violence, and discrimination as children and adolescents as well as adults is continual. Aspects of feeling as a liability (a large attribute of the construct of perceived burdensomeness) include unemployment and homelessness, both of which are of high incidence among TGNC populations; so are feelings of self-blame and low self-esteem that result from internalized transphobia. According to Hendricks and Testa (2012), these feelings result from a negative appraisal of one’s self-worth related to victimization and a lack of community resources that lead many TGNC people to see themselves as a burden to society. Applying the final component of the IPTS model to TGNC individuals, Hendricks and Testa (2012) indicated TGNC people’s history of physical abuse or assaults gradually increases their ability to withstand a sustained level of pain tolerance that leads to a capability to engage in self-harm (a primary attribute of a suicide attempt). And as previously found (Clements-Nolle, Marx, & Katz, 2006), a history of suicide attempts is one predictor of future attempts.

Limitations and Concluding Remarks

We used a community-based sample of self-identified TGNC youth from three cities in the United States, which may not reflect TGNC youth in other cities, rural areas or other parts of the country. The TGNC youth who participated in the study had access to community-based organizations or college groups for LGBTQ youth, or they knew youth who did. Additionally, they were willing to participate in the study and to report their past suicidal thinking and behaviors. Therefore, the data were based on youths’ self-reports and

recollections and not on others' perspectives (e.g., their perceptions of belonging or being a burden). Additionally, one of the gender-identity subgroups of the population i.e., MTDG has a limited sample size; therefore, findings including this group need to be viewed with caution. Lastly, the use of a cross-sectional design does not allow us to reach conclusions about causality.

Despite these limitations, this study points to the urgent need for suicide prevention among TGNC youth. A national sample of adolescents in the United States estimated lifetime prevalence of suicidal ideation and suicide attempts to be 12.1% and 4.1%, respectively (Nock, et al., 2013); in comparison, the percentages of TGNC youth in the current study were 49.5% who reported lifetime prevalence of suicidal ideation and 24.4% who reported having made past suicide attempts. Previous studies link compromised mental health among TGNC youth to their disproportionately high experiences of harassment, bullying, discrimination, gender minority stress, oppression, stigma, victimization, violence, and vulnerability (Bockting, et al., 2013; Grossman & D'Augelli, 2006; Reisner, Greytak, Parson, Yharra, 2015; Russell, Kosciw, Horn, & Saewyc, 2010). We can now add feelings of perceived burdensomeness, thwarted belongingness, and being the recipient of painful and provocative events to this list of variables. Simultaneously there is a need for research that assesses protective factors of suicidal thoughts and behaviors among TGNC youth. Although beyond the scope of this paper, we note that two studies of a sample of 245 Latino and non-Latino LGBT youth (21–25 years) found that: a) family acceptance protects against depression, substance abuse, and suicide ideation and behaviors (Ryan et al., 2010); and b) reducing LGBT-related and school victimization likely results in long term health gains and reduced health disparities among LGBT youth including lower levels of depression and less suicidal ideation among males (Russell, Ryan, Toomey, Diaz, & Sanchez, 2010).

In the training of future teachers, school counselors, social workers, psychologists, psychiatrists, and other mental health practitioners (e.g., marriage and family counselors, psychotherapists, art and drama therapists), there is a need to systematically incorporate knowledge and evidenced-based practices that will enable them to become culturally and clinically competent in working with TGNC youth and their families. Not only will this training assist in preventing future suicidal ideation and suicide attempts among TGNC youth, but also it will enhance protective factors that promote their positive mental health.

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References

- Baams L, Grossman AH, Russell ST. Minority stress and mechanisms of risk for depression and suicidal ideation among lesbian, gay, and bisexual youth. *Developmental Psychology*. 2015; 51:688–696. [PubMed: 25751098]
- Beemyn, G., Rankin, S. *The lives of transgender people*. New York: Columbia University Press; 2011.
- Bender TW, Gordon KH, Joiner TE. Impulsivity and suicidality: A test of the mediating role of painful experiences. 2007 Unpublished manuscript.
- Biery, R. *Understanding homosexuality: The pride and prejudice*. Austin, TX: Edward-William Publishing Co; 1990.
- Blackmore ER, Munce S, Weller I, Zagorski B, Stansfeld SA, Stewart DE, et al. Psychological and clinical correlates of suicidal acts: Results from a national population survey. *British Journal of Psychiatry*. 2008; 192(4):279–284. [PubMed: 18378988]
- Bornstein, K. *Gender outlaw: On men, women, and the rest of us*. New York: Routledge; 1994.
- Bockting WO, Miner MH, Swinburne Romine RE, Hamilton A, Coleman E. Stigma, mental health, and resilience among an online sample of the U.S. transgender population. *American Journal of Public Health*. 2013; 103(5):943–951. [PubMed: 23488522]
- Bryan CJ, Morrow CE, Anestis MD, Joiner TE. A preliminary test of the interpersonal-psychological theory of suicidal behavior in a military sample. *Personality and Individual Differences*. 2010; 48:347–350.
- Clements-Nolle K, Marx R, Katz M. Attempted suicide among transgender persons: The influence of gender-based discrimination and victimization. *Journal of Homosexuality*. 2006; 51(3):53–69. [PubMed: 17135115]
- Dohrenwend BP. The role of adversity and stress in psychopathology: Some evidence and its implications for theory and research. *Journal of Health and Social Behavior*. 2000; 41(1):1–19. [PubMed: 10750319]
- Goldblum P, Testa RJ, Pflum S, Hendricks M, Bradford J, Bongar B. In-school gender-based victimization and suicide attempts in transgender individuals. *Professional Psychology: Research and Practice*. 2012; 43(5):468–475.
- Greytak, EA., Kosciw, JG., Diaz, EM. *Harsh realities: The experiences of transgender youth in our nation's schools*. New York: Gay, Lesbian and Straight Education Network; 2009.
- Grossman AH, D'Augelli AR. Transgender youth: Invisible and vulnerable. *Journal of Homosexuality*. 2006; 51(1):111–128. [PubMed: 16893828]
- Grossman AH, D'Augelli AR. Transgender youth and life-threatening behaviors. *Suicide and Life-Threatening Behavior*. 2007; 37(5):527–537. [PubMed: 17967119]
- Gutierrez, PM., Osman, A. *Adolescent suicide: An integrated approach to the assessment of risk and protective factors*. DeKalb, IL: Northern Illinois University Press; 2008.
- Hendricks ML, Testa RJ. A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the minority stress model. *Professional Psychology: Research and Practice*. 2012; 43(5):460–467.
- Herman, J. *Transgender explained for those who are not*. Bloomington, IN: Author House; 2009.
- Herman, JL., Haas, JL., Rodgers, PL. *Suicide Attempts among Transgender and Gender Non-Conforming Adults*. Los Angeles, CA: Williams Institute/UCLA School of Law; 2014. (<http://escholarship.org/uc/item/8xg8061f>)
- Hill RM, Rey Y, Marin CE, Sharp C, Green KL, Pettit JW. Evaluating the Interpersonal Needs Questionnaire: Comparison of the Reliability, Factor Structure, and Predictive Validity across Five Versions. *Suicide and Life-Threatening Behavior*. 2014; doi: 10.1111/sltb.1212
- IOM (Institute of Medicine). *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding*. Washington, DC: The National Academic Press; 2011.
- Joiner, T. *Why people die by suicide*. Cambridge, MA: Harvard University Press; 2005.
- Kosciw, JG., Greytak, EA., Palmer, NA., Boesen, MJ. *A Report from the Gay, Lesbian & Straight Education Network (GLSEN)*. 2013. *The 2013 National School Climate Survey. The Experiences of Lesbian, Gay, Bisexual and Transgender Youth in Our Nation's Schools*.

- Kutner, M., Nachtsheim, C., Neter, J., Li, W. Applied linear statistical models. 5. New York, NY: McGraw-Hill/Irwin; 2004.
- Lombardi E. Varieties of transgender/transsexual lives and their relationship with transphobia. *Journal of Homosexuality*. 2009; 56(8):977–992. [PubMed: 19882422]
- Marshal MP, Dietz LJ, Friedman MS, Stall R, Smith HA, McGinley J, Thoma BC, Murray PJ, D’Augelli AR, Brent DA. Suicidality and depression disparities between sexual minority and heterosexual youth: A meta-analytic review, *Journal of Adolescent Health*. 2011; 49(2):115–123. [PubMed: 21783042]
- Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*. 2003; 129(5):674–697. [PubMed: 12956539]
- Mustanski BS, Garofalo R, Emerson EM. Mental health disorders, psychopathological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. *American Journal of Public Health*. 2010; 100(12):2426–2432. [PubMed: 20966378]
- Mustanski B, Liu R. A Longitudinal Study of Predictors of Suicide Attempts among Lesbian, Gay, Bisexual, and Transgender Youth. *Archives of Sexual Behavior*. 2013; 42(3):437–448. [PubMed: 23054258]
- Nadin, N., Peel, E., Tyler, A., Rivers, I. The RaRE research report: LGBT mental health – risk and resilience explored. UK: London, PACE; 2015.
- National Center for Health Statistics. Health, United States. With Special Feature on Emergency Care. Hyattsville, MD: 2012. 2013 from <http://www.cdc.gov/nchs/data/abus/abus12.pdf>
- Nock MK, Green JG, Hwang I, McLaughlin KA, Sampson NA, Kessler RC. Prevalence, correlates, and treatment of lifetime suicidal behavior among adolescents: Results from the National Comorbidity Survey Replication Adolescent Supplement. *JAMA Psychiatry*. 2013; 70(3):300–310. [PubMed: 23303463]
- Nuru AK. Between layers: Understanding the communicative negotiation of conflicting identities by transgender individuals. *Communication Studies*. 2014; 65(3):281–297.
- Olson J, Schrage SM, Belzer M, Simons LK, Clark LF. Baseline physiologic and psychosocial characteristics of transgender youth seeking care for gender dysphoria. *Journal of Adolescent Health*. 2015; 57(4):374–380. [PubMed: 26208863]
- Perrin, EC. Sexual orientation in child and adolescent health care. New York, NY: Kluwer Academic/Plenum Publishers; 2002.
- Plöderl M, Sellmeier M, Fartacek C, Pichler EM, Fartacek R, Kralovec K. Explaining the suicide risk of sexual minority individuals by contrasting the minority stress model with suicide models. *Archives of Sexual Behavior*. 2014; 43(8):1559–1570. [PubMed: 24573399]
- R Core Team. R: A language and environment for statistical computing. R Foundation for Statistical Computing; Vienna, Austria: 2014. <http://www.R-project.org>
- Renschmidt H. Psychosocial milestones in normal puberty and adolescence. *Hormone Research in Pediatrics*. 1994; 41(2):19–29.
- Reisner SL, Vetter R, Leclerc M, Zaslow S, Wolfrum S, Shumer D, Mimiaga MJ. Mental health of transgender youth in care at an adolescent urban community health center: a matched retrospective cohort study. *Journal of Adolescent Health*. 2015; 56(3):274–279. [PubMed: 25577670]
- Reisner SL, Greytak A, Parsons JP, Ybarra ML. Gender minority social stress in adolescence: Disparities in adolescent bullying and substance use by gender-identity. *Journal of Sex Research*. 2015; 52(3):243–256. [PubMed: 24742006]
- Russell ST, Joyner K. Adolescent sexual orientation and suicide risk: Evidence from a national study. *American Journal of Public Health*. 2001; 91(8):1276–1281. [PubMed: 11499118]
- Russell, ST., Kosciw, J., Horn, S., Saewyc, E. Safe Schools Policy for LGBT Students. Vol. 24. Arbor, MI: Society for Research in Child Development Social Policy Report; 2010.
- Siebler K. Transgender transitions: Sex/gender binaries in the digital age. *Journal of Gay and Lesbian Mental Health*. 2012; 16(1):74–99.
- Wallace JM Jr, Forman TA, Caldwell CH, Willis DS. Religion and U.S. secondary school students: Current patterns, recent trends, and sociodemographic correlates. *Youth & Society*. 2003; 35:98–125.

- Smith PN, Wolford-Clevenger C, Mandracchia JT, Jahn DR. An exploratory factor analysis of the Acquired Capability Scale for Suicide Scale in male prisoners. *Psychological Services*. 2013; 10(1):97–105. [PubMed: 23230965]
- Stack S. The relationship between culture and suicide: An analysis of African Americans. *Transcultural Psychiatry*. 1998; 35(2):253–269.
- Testa RJ, Sciacca LM, Wang F, Hendricks ML, Goldblum P, Bradford J, Bongar B. Effect of violence on transgender people. *Professional Psychology: Research and Practice*. 2012; 43(5):452–459.
- Testa, RJ., Hendricks, ML. Suicide risk among transgender and gender-nonconforming youth. In: Goldblum, P.Espelage, DL.Chu, J., Bongar, B., editors. *Youth suicide and bullying*. New York: Oxford University Press; 2015. p. 121-133.
- Van Orden KA, Cukrowicz KC, Witte TK, Joiner TE. Thwarted belongingness and perceived burdensomeness: Construct validity and psychometric properties of the Interpersonal Needs Questionnaire. *Psychological Assessment*. 2012; 24(1):197–215. [PubMed: 21928908]
- Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite SR, Selby EA, Joiner TE Jr. The interpersonal theory of suicide. *Psychological Review*. 2010; 117(2):575–600. [PubMed: 20438238]
- Van Orden KA, Witte TK, Gordon KH, Bender TW, Joiner TE Jr. Suicidal desire and the capability: Test of the interpersonal-psychological theory of suicidal behavior among adults. *Journal of Consulting and Clinical Psychology*. 2008; 76(1):72–83. [PubMed: 18229985]
- World Health Organization. *Preventing Suicide: A Resource for General Physicians*. Geneva: WHO, Department of Mental Health; 2000.
- Xavier J, Bobbinm M, Singer B, Budd E. A needs assessment to transgendered people of color living in Washington, DC. *International Journal of Transgenderism*. 2005; 8(2–3):31–47.

Table 1

Descriptive Statistics

	MTF	FTM	MTDG	FTDG	Total
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Suicidal Ideation	1.89 (3.04)	4.13 (3.59)	2.15 (3.81)	5.43 (4.22)	3.38 (3.82)
No <i>f</i> (%)	26 (70.3%)	12 (37.5%)	9 (69.2%)	6 (73.9%)	53 (50.5%)
Yes <i>f</i> (%)	11 (29.7%)	20 (62.5%)	4 (30.8%)	17 (73.9%)	52 (49.5%)
Total <i>f</i> (%)	37 (100%)	32 (100%)	13 (100%)	23 (100%)	105 (100%)
Suicidal Attempt	2.28 (5.43)	2.89 (6.41)	3.50 (7.28)	6.96 (7.82)	3.72 (6.75)
No <i>f</i> (%)	33 (84.6%)	31 (81.6%)	11 (78.6%)	15 (53.6%)	90 (75.6%)
Yes <i>f</i> (%)	6 (15.4%)	7 (18.4%)	3 (21.4%)	13 (46.4%)	29 (24.4%)
Total <i>f</i> (%)	39 (100%)	38 (100%)	14 (100%)	28 (100%)	119 (100%)
Perceived Burdensomeness	2.87 (1.29)	2.82 (1.50)	2.60 (1.62)	2.57 (1.28)	2.75 (1.38)
Thwarted Belongingness	3.46 (1.21)	3.41 (1.42)	3.34 (1.63)	3.39 (1.37)	3.41 (1.35)
Acquired Capability	2.04 (0.95)	2.33 (1.07)	2.23 (1.08)	2.45 (0.74)	2.24 (0.96)
Painful & Provocative event	1.79 (0.39)	1.77 (0.42)	1.83 (0.51)	1.98 (0.36)	1.83 (0.41)

Table 2

Hierarchical Poisson Regression Analysis Predicting Suicidal Ideation

Predictor	B	S.E	Wald χ^2	p	95% Wald CI	
					LB	UB
1						
<i>Gender Identity</i>						
FTM	0.59	0.17	12.58***	<.001	0.27	0.92
MTDG	-0.11	0.25	0.19	0.67	-0.60	0.38
FTDG	0.80	0.17	22.25***	<.001	0.47	1.13
MTF	.	.	.	.	.	.
<i>Race</i>						
Black/AA	-0.25	0.18	1.78	0.18	-0.60	0.11
Multiracial	-0.23	0.16	2.11	0.15	-0.54	0.08
Others	-0.84	0.22	13.99***	<.001	-1.28	-0.40
White/Caucasian	.	.	.	.	.	.
Age	0.04	0.04	0.89	0.34	-0.04	0.11
Ethnicity (non-Hispanic)	-0.23	0.16	2.05	0.15	-0.55	0.09
Religious Service Attendance	-0.47	0.11	20.37***	<.001	-0.68	-0.27
Intercept	1.47	0.90	2.47	0.12	-0.35	3.18
2						
Perceived Burdensomeness	0.29	0.05	40.59***	<.001	0.20	0.38
Thwarted Belongingness	0.01	0.05	0.03	0.86	-0.08	0.10
Intercept	0.91	0.25	13.36***	<.001	0.42	1.40

Note. *Step 1*: Log-likelihood = -251.72; Likelihood ratio χ^2 ($df=9$) = 97.60, $p < .001$; *Step 2*: Log-likelihood = -266.77; Likelihood ratio χ^2 ($df=9$) = 150.30, $p < .001$; *Black/AA = Black or African American; *Others = (1) Asian or Asian American, (2) American Indian, Native American, Alaskan Native, and (3) Native Hawaiian or Other Pacific Islander; *White = White, Caucasian, Anglo, European American;

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Hierarchical Poisson Regression Analysis Predicting Suicide Attempts

Predictor	B	S.E	Wald X ²	p	95% Wald CI	
					LB	UB
1						
<i>Gender Identity</i>						
FTM	-0.11	0.17	0.46	0.499	-0.44	0.21
MTDG	0.40	0.21	3.69	0.055	-0.01	0.81
FTDG	0.95	0.15	39.57***	<.001	-0.44	0.21
MTF	.	.	.	.	.	.
<i>Race</i>						
Black/AA	-0.61	0.19	10.75***	0.001	-0.98	-0.25
Multiracial	0.08	0.14	0.36	0.548	-0.18	0.35
Others	-0.61	0.21	0.08	0.775	-0.48	0.35
White/Caucasian	.	.	.	.	.	.
<i>Age</i>						
Age	0.05	0.04	2.27	0.333	-0.02	0.12
<i>Ethnicity (non-Hispanic)</i>						
Ethnicity (non-Hispanic)	1.09	0.17	41.03***	<.001	0.75	1.42
<i>Religious Service Attendance</i>						
Religious Service Attendance	-0.26	0.07	14.44***	<.001	-0.39	-0.12
Intercept	-1.50	0.84	3.17	0.075	-3.15	0.15
2						
<i>Suicidal Ideation</i>						
Suicidal Ideation	0.21	0.02	106.29***	<.001	0.17	0.25
<i>Acquired Capability</i>						
Acquired Capability	0.30	0.07	16.79***	<.001	0.16	0.44
Intercept	-1.10	0.56	3.89*	0.049	-2.19	-0.01
3						
<i>Perceived Burdensomeness</i>						
Perceived Burdensomeness	0.22	0.09	5.90*	0.015	0.04	0.39
<i>Thwarted Belongingness</i>						
Thwarted Belongingness	1.06	0.26	17.16***	<.001	0.56	1.57
<i>Painful & Provocative Event</i>						
Painful & Provocative Event	3.42	0.53	42.21***	<.001	2.39	4.45
<i>Thwarted Belongingness × Painful & Provocative Event</i>						
Thwarted Belongingness × Painful & Provocative Event	-0.66	0.12	29.47***	<.001	-0.90	-0.42
Intercept	-7.74	1.30	35.62***	<.001	-10.28	-5.20

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Note. *Step 1*: Log-likelihood = -472.93; Likelihood ratio χ^2 ($df=9$) = 183.31, $p<.001$; *Step 2*: Log-likelihood = -297.69; Likelihood ratio χ^2 ($df=10$) = 357.03, $p<.001$; *Step 3*: Log-likelihood = -2260.89; Likelihood ratio χ^2 ($df=14$) = 423.60, $p<.001$.

'Black/AA' = Black or African American; 'Others' = (1) Asian or Asian American, (2) American Indian, Native American, Alaskan Native, and (3) Native Hawaiian or Other Pacific Islander; 'White' = White, Caucasian, Anglo, European American.

* p .05.

** p .01.

*** p .001.