

The Italian Validation of the Gender Minority Stress and Resilience Measure

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Transgender and gender nonconforming (TGNC) people experience high levels of minority stress and associated risk for negative mental health outcomes. Notwithstanding, TGNC people may resist the negative effects of minority stress on health through the resilience factors. As no comprehensive measures of gender minority stress and resilience exist in Italy, this study evaluated the psychometric characteristics of an Italian language version of the Gender and Minority Stress and Resilience Measure (GMSR) in an Italian sample of 203 TGNC individuals ranged from 18 to 66 years of age ($M = 30.70$, $SD = 10.79$). The GMSR, developed in the United States in 2015, assesses distal stressors (discrimination, rejection, victimization, and nonaffirmation), proximal stressors (internalized transphobia, negative expectations, and nondisclosure), and resilience factors (pride and community connectedness). Confirmatory factor analysis showed that the original 9-factor model had adequate fit to the data obtained from the Italian sample. Criterion validity was partially confirmed, as the stress scales positively correlated with anxiety and depression, and pride negatively correlated with depression, but not anxiety. On the contrary, community connectedness did not correlate with any of the mental health measures. Instead, both convergent and discriminant validity were confirmed as both distal and proximal stressors positively correlated with perceived stress, community connectedness was positively associated with perceived support from friends, and all correlations were below .60. This study offers evidence of the reliability and validity of the GMSR in the Italian context, providing Italian clinicians and researchers with a comprehensive tool to assess gender minority stress in TGNC individuals.

Abstract in Italian

Le persone transgender e gender nonconforming (TGNC) vivono elevati livelli di minority stress, a causa dei quali sono a rischio di sviluppare problemi di salute mentale. Ciononostante, esse riescono a fronteggiare gli effetti negativi del minority stress attraverso la resilienza. Poiché in Italia non esistono strumenti comprensivi sul minority stress, questo studio ha valutato le caratteristiche psicometriche della Gender and Minority Stress and Resilience Measure (GMSR) in un campione di 203 persone TGNC italiane, la cui età variava dai 18 ai 66 anni ($M = 30.70$, $SD = 10.79$). La GMSR, sviluppata in America nel 2015, valuta gli stressor distali (discriminazione, rifiuto, vittimizzazione e non affermazione) e prossimali (transfobia interiorizzata, aspettative negative e non disvelamento), e i fattori di resilienza (orgoglio e connessione alla comunità). L'Analisi Fattoriale Confermativa ha mostrato che il modello originario a 9 fattori si adatta bene al campione italiano. La validità di criterio è stata parzialmente confermata, poiché le scale sullo stress sono risultate positivamente associate all'ansia e alla depressione e l'orgoglio è risultato negativamente associato alla depressione ma non all'ansia. Al contrario, la

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connessione alla comunità non è risultata associata alle scale sulla salute mentale. I risultati hanno confermato sia la validità convergente che discriminante, poiché gli stressor distali e prossimali sono risultati positivamente associati allo stress percepito, così come la connessione comunitaria al supporto amicale. Tutte le correlazioni sono risultate inferiori a .60. Questo studio dimostra l'affidabilità e la validità della GMSR nel contesto italiano ed offre ai clinici e ai ricercatori uno strumento comprensivo per valutare il minority stress nelle persone TGNC.

Public Significance Statement

This study validates in the Italian context the Gender Minority Stress and Resilience Measures, a comprehensive measure of gender minority stress experienced by transgender individuals. This scale is a valid instrument for clinicians and researchers who need to assess the intersection between stress, resilience, and health in transgender population.

Keywords: minority stress, stigma, transgender, resilience, Gender Minority Stress and Resilience Measure

Transgender and gender nonconforming (TGNC) is an umbrella term indicating people whose gender identity, expression, or behaviors differ from those typically associated with the sex they were assigned at birth (American Psychological Association, 2015). This group includes a wide range of gender identities that encompass people identifying with a binary (e.g., male-to-female or female-to-male transgender individuals) or a nonbinary (e.g., genderqueer, bigender, etc.) identity. Nonbinary individuals are those whose gender identity is situated beyond the gender binary, identifying with a neither exclusively masculine nor feminine gender. A growing body of research has reported that TGNC individuals face systematic oppression due to their gender nonconformity (Wirtz, Poteat, Malik, & Glass, 2018) and that such stigmatization processes increase the risk of developing negative health and mental health outcomes (Valentine & Shipherd, 2018), as well as experiencing health disparities (Reisner et al., 2015).

One of the most useful theoretical frameworks for understanding the impact of stigmatization processes on mental and physical health of minority groups is Minority Stress Theory (MST; Hendricks & Testa, 2012; Meyer, 2003). MST posits that health disparities stem from the stigmatizing social context that minority groups are exposed to, and that protective factors may be activated to ameliorate the resulting negative health outcomes. MST was developed by Meyer to understand the relationship between stigma, stress, and health within lesbian, gay, and bisexual (LGB) populations (Meyer, 2003), and only recently was expanded to TGNC individuals (Hendricks & Testa, 2012). Although they share similarities with their LGB peers, TGNC people also experience unique and specific stressors as well as health and developmental challenges related to their minority gender identities. Testa, Habarth, Peta, Balsam, and Bockting (2015) developed the Gender Minority Stress and Resilience Measure (GMSR), a scale assessing the specific minority stressors experienced by TGNC individuals, as well as resilience factors. The GMSR is, to date, the only psychometrically sound scale that comprehensively assesses the minority stress in TGNC population, providing clinicians and researchers of a fundamental and valid instrument in this field. However, to date, most of the research on this measure has been conducted in the United States. Thus, we know little about how to

understand and assess gender minority stress in other cultural contexts.

In Italy, where the current study was conducted, no comprehensive measures of gender minority stress exist, leaving Italian researchers and clinicians in need of a measure assessing these important constructs among Italian TGNC populations. To this end, the current work aimed at validating the GMSR in a sample of Italian TGNC adults. To provide context for this study, we first provide an overview of the social and legal context for Italian TGNC people. Then, we review general research on minority stress in TGNC populations. Finally, we present the GMSR with particular attention to the theoretical model underlying the scale.

The Social and Legal Context for Italian TGNC People

The Italian context is not highly supportive for TGNC people (Bohicchio et al., 2019; Scandurra, Mezza, Bohicchio, Valerio, & Amodeo, 2017c; Scandurra, Picariello, Valerio, & Amodeo, 2017; Vitelli et al., 2017). For instance, the Italian law 164, which regulates gender affirming surgery (GAS), was promulgated in 1982 and has never actually been updated. Such a law establishes that a tribunal must determine if a TGNC person can undergo GAS. To decide, the judge has to appoint one or more experts who have to verify the psychosexual conditions of TGNC people. The practice usually consists of involving a clinical psychologist or a psychiatrist. Only after reviewing the results of a psychological or psychiatric evaluation attesting to the presence of gender dysphoria the judge will consider authorizing GAS, ordering the correction of identity records.

In July 2015, sentence n. 15,138 delivered by the Court of Cassation allowed some Italian TGNC people to change their name at the civil registry even without having undergone GAS. Although such a sentence represented a fundamental event for Italian TGNC rights and recognition, the legislation on GAS and name change is still unchanged since 1982. Indeed, Italian law is based on a civil system in which case law—especially as far as supreme courts are concerned, as it is the case of the Italian Court of Cassation—can orient and guide law application and enforcement, in compliance with constitutional principles. However, to change the legislation governing a specific issue, the written law

must be renewed or reformed through the ordinary parliamentary legislative process. Thus, TGNC individuals still have to demonstrate being part of a medicalized transition process to obtain the right to proceed with legal transition. This is in marked contrast to laws in other nations (e.g., Ireland, Malta, Norway, etc.) where TGNC people can change their gender by way of a “statutory declaration” without having to go through a medicalized application process. In such countries, a third “nonbinary” option is also often available, in addition to “male” and “female.”

Italy also currently has no antidiscrimination social policies protecting TGNC people from hate crimes or social stigma, which ultimately prevents this population from benefitting from the positive effects that inclusive policies may have on wellbeing (Perez-Brumer, Hatzenbuehler, Oldenburg, & Bockting, 2015). To this end, in a European study mapping hate crime in Europe (Turner, Whittle, & Combs, 2009), Italian TGNC people showed the highest percentage (51%) of transphobic verbal comments compared to TGNC people in other European countries. Similarly, Italy was classified as the European country with the second highest rate of transphobic hate crimes, after Turkey (Prunas et al., 2015).

Minority Stress in TGNC People

The MST assumes that stress experienced by gender and sexual minority groups is due to social stigmatization, which, in turn, affects health and mental health (Meyer, 2003). Minority stressors range from distal to proximal. Distal stressors originate from an external and objective source (e.g., prejudice events, violence, nonaffirmation), whereas proximal stressors include internal feelings, thoughts, and actions (i.e., concealment, negative expectations, internalized transphobia; Meyer, 2003). MST also assumes that specific individual- and group-level dimensions (e.g., resilience, community connectedness) may buffer the effects of stigma on health (Matsuno & Israel, 2018).

There is evidence that TGNC individuals experience high rates of violence due to their gender nonconformity. For instance, in a large U.S. survey with 27,715 TGNC youths, James et al. (2016) found that the majority of participants who were out or perceived as TGNC while in school were verbally harassed (54%), physically attacked (24%), or sexually assaulted (13%) because of their gender identity. Similarly, Bradford, Reisner, Honnold, and Xavier (2013), in a sample of 350 TGNC adults recruited in Virginia, reported that 41% suffered from transgender-related discrimination. Previous research has also widely demonstrated that distal stressors are associated with psychological problems, such as depression, anxiety, and somatization (e.g., Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013). Regarding proximal stressors, evidence demonstrates that they have an indirect link with negative health outcomes. For example, Testa et al. (2017) found an indirect effect of prejudice events on suicide ideation via all proximal stressors. There is also evidence that TGNC individuals are able to resist the negative effects of minority stress on health through the use of adaptive strategies. For instance, Pflum, Testa, Balsam, Goldblum, and Bongar (2015) found that social support can ameliorate the negative mental health outcomes associated with minority stress.

In contrast to these numerous studies in the United States, few studies have focused on measuring minority stress in Italian TGNC population (e.g., Scandurra, Amodeo, Bochicchio, Valerio, &

Frost, 2017a). For instance, Scandurra, Amodeo, Valerio, Bochicchio, and Frost (2017b), with a sample of 149 Italian TGNC individuals, found that both distal (i.e., antitransgender discrimination) and proximal (i.e., internalized transphobia) stressors were associated with increased mental health problems (i.e., depression, anxiety, and suicide ideation), and that resilience and social support from family significantly buffered the effects of discrimination on mental health. Similarly, among the same sample, Scandurra et al. (2018) found that internalized transphobia mediated the relationship between antitransgender discrimination and negative mental health outcomes (i.e., depression and anxiety), and that resilience was a valid moderator buffering the effect of stigma on health. Finally, there is also evidence that Italian TGNC individuals are able to use resilience strategies in the face of stigmatizing experiences, affirming their TGNC identity and bonding with TGNC peer groups (Amodeo, Picariello, Valerio, & Scandurra, 2018; Scandurra, Vitelli, Maldonato, Valerio, & Bochicchio, 2019).

GMSR

GMSR originates within the MST and was developed with the aim of creating a sensitive measure capturing specific aspects of minority stressors and resilience in TGNC people. Indeed, although some aspects of the sexual minority conceptualization of MST can be applied to the TGNC population (Hendricks & Testa, 2012), others require an adaptation to be culturally specific (Testa et al., 2015).

In terms of distal stressors, although some of the experiences of stigma and discrimination are similar between LGB and TGNC individuals (e.g., family violence, verbal abuse, etc.), other experiences are specific to the latter, such as having difficulties in accessing legal documents, medical care, or safe restrooms in public places. Furthermore, contrary to LGB individuals, TGNC people may experience specific distal stressors that Testa et al. (2015) labeled *nonaffirmation*, which is the experience of not being affirmed by others in one’s own gender identity (e.g., not being called with the chosen name or called with a pronoun that is congruent with sex assigned at birth rather than subjective perceived gender). In terms of proximal stressors, although internalized transphobia is similar to internalized homophobia, as well as negative expectations (i.e., fear of future experiences of discrimination and rejection), concealment of one’s own gender identity is quite different from concealment of one’s own sexual orientation. Indeed, for a TGNC person it is hard to conceal one’s own gender identity, as it is usually registered in the visible body, rather than in behaviors, as in the case of LGB individuals.

Because of the aforementioned differences in terms of minority stress experienced by TGNC individuals, Testa et al. (2015) created a scale assessing four different distal stressors (i.e., gender-related discrimination, gender-related rejection, gender-related victimization, and nonaffirmation of gender identity), three proximal stressors (i.e., internalized transphobia, negative expectations for future events, and nondisclosure), and two protective factors (community connectedness and pride). As reported in Figure 1, the GMSR theoretical model is based on recent research (e.g., Breslow et al., 2015; Hatzenbuehler, 2009; Testa et al., 2017) that postulates that proximal stressors mediate the relationship between distal stressors and health, and that, in turn, protective factors

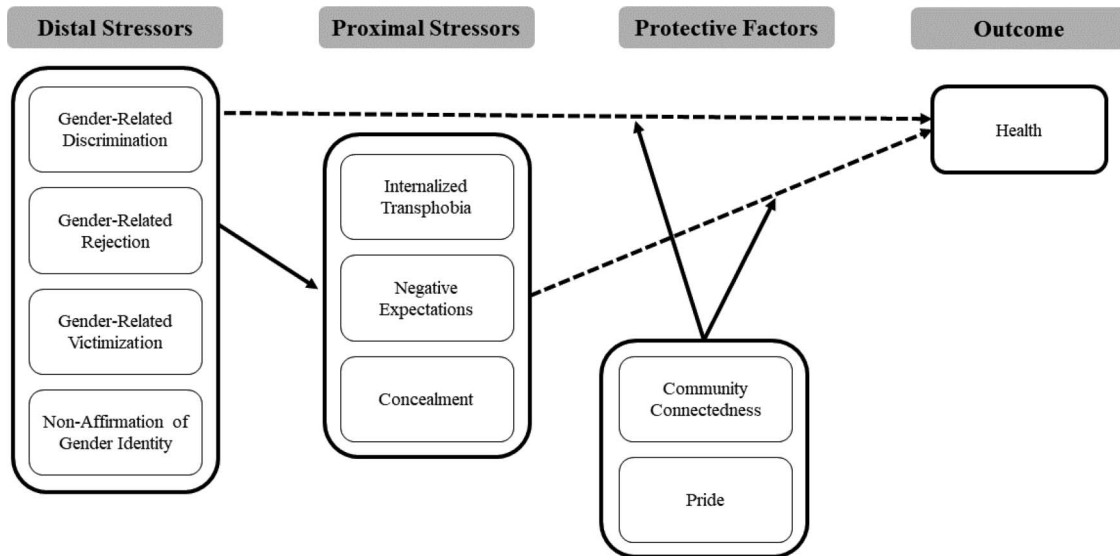


Figure 1. Gender minority stress model as proposed by Testa et al. (2015), with dashed lines indicating inverse relationships.

moderate the relationship between both type of stressors and health. Thus, the GMSR is theoretically grounded in a moderated mediation framework with specific relationships between stressors, protective factors, and health.

The Current Study

The current study evaluated the psychometric characteristics of an Italian language version of the GMSR in an Italian sample of TGNC people. This evaluation had the goal of providing researchers and clinicians with an instrument with capacity to assess both distal and proximal minority stressors, as well as resilience factors, experienced by TGNC people. We evaluated the model fit and the criterion, convergent, and discriminant validity of the GMSR. To evaluate the model fit, we hypothesized that the nine subscales (seven related to stress and two to resilience) have good fit indices in the Italian sample (Hypothesis 1).

To evaluate the criterion validity of the GMSR, informed by the MST, we hypothesized that each of the seven stress scales (discrimination, rejection, victimization, nonaffirmation, internalized transphobia, negative expectations, and nondisclosure) will correlate positively with depressive and anxiety symptoms (Hypothesis 2), and that both of the two resilience scales (pride and community connectedness) will correlate negatively with depressive and anxiety symptoms (Hypothesis 3). To assess the convergent validity, we hypothesized that each of the seven stress scales will correlate positively with perceived stress (Hypothesis 4), and that the community connectedness scale will correlate positively with perceived social support (Hypothesis 5).

Finally, to evaluate the discriminant validity, we followed Kazdin's (2003) recommendations on the conceptual distinction between constructs, hypothesizing that all correlations described in the previous hypotheses will be below .60 (Hypothesis 6).

Method

Procedure

Translation of the GMSR. The GMSR was translated in Italian following the Back-Translation method (Behling & Law, 2000). Six phases were implemented, as follows: (a) Each item of the GMSR was independently translated from English to Italian by three experts in the fields of TGNC studies and psychology (first, second, and fourth authors). (b) The 3 Italian versions of the GMSR were compared to reach an agreement on the final version. (c) A focus group with a small group of Italian TGNC people ($N = 7$) aged from 28 to 55 years was performed to assess the contents comprehensibility of each item and the adjustment to the Italian context. The group was conducted by the fourth author of the current study, was composed by four female-assigned-at-birth and three male-assigned-at-birth TGNC people, and was recruited on a voluntary basis through a local association of TGNC people. The scale was evaluated as very clear and inclusive of all TGNC identities. The only annotation concerned the use of the female/male suffix of adjectives ("a" for female gender and "o" for male gender), as the Italian language, contrary to the English one, is a strongly gendered language differentiating the adjectives on the basis of two only genders (male vs. female). To overcome this bias caused by the gender binary language system, we decided to use the asterisk (*) in place of "a/o." (d) The final Italian version of the GMSR was then translated from Italian to English by a native English speaker with excellent proficiency in Italian and with certified expertise in TGNC studies. (e) The new English version of the GMSR was compared with the original one by the sixth and seventh author of the current work, and an agreement on the final version was reached. (f) Finally, three external independent judges expert in psychology and TGNC studies were asked to participate in a short online survey to evaluate the contents comprehensibility of each item. The instructions for judges were "How clear are the

contents of the following items?" On a 5-point Likert scale from 0 (*not at all clear*) to 4 (*completely clear*) the average of all items was 4.89.

Survey procedures. Data analyzed in the current study are part of a research project entitled "Stress and Resilience in Trans Population Survey," an Italian study aimed at analyzing the gender minority stress and health outcomes within TGNC people. Data were collected through an online survey inserted in Qualtrics. Participants were recruited via the Internet in Italy between November 2018 and April 2019. Advertisements specified that participants could take the survey if they self-identified as TGNC (transgender, gender nonconforming, nonbinary, etc.), were at least 18 years old (Italian age of consent), and lived in Italy at least for 10 years. Participants were reached through national TGNC listservs, social media channels, and contact with national stakeholders in the TGNC community, facilitating a snowball sampling recruitment procedure. Outreach e-mails reported, "We are looking for people who are 18 years or older and whose current gender identity is different from their sex assigned at birth. Participants must be living in Italy." The post also contained the principal investigator (PI) e-mail address if participants had questions. All surveys were completed anonymously, and participants were informed on objectives, benefits, and risks. Furthermore, participants were informed on the right of skipping questions they did not want to answer for any reasons and of stopping the survey in any point they desired. We provided contacts of the National Observatory on Gender Identity in case of necessity to talk with an expert in the field of psychology, endocrinology, surgery, or jurisprudence. Finally, participants were informed that the survey would have taken approximately 40 min to complete.

The study was funded by the Italian Observatory on Gender Identity. With the aim of incentivizing participation, participants were told that the completion of the survey allowed them to enter into a lottery, consisting in extracting 10 participants, each receiving €50. To maintain the anonymity, participants who expressed the intention to participate in the lottery were asked to write their e-mail on a voluntary basis. Once the emails were extracted, participants were contacted and were asked to communicate their bank details, to which only the PI of the current study had access.

To guarantee the privacy of participants according to the European Union General Data Protection Regulation, collected data were safeguarded by a secure gateway accessible only to the PI, who downloaded data and removed all IP addresses before sharing data with other researchers. Furthermore, the PI saved the emails of participants who voluntarily decided to participate in the lottery in a separate sheet.

The study was approved by the Ethical Committee of the University of Calabria and was designed in the respect of principles of the Declaration of Helsinki on Ethical Principles for Medical Research Involving Human Subjects.

Participants

Four hundred thirty-two participants started to answer the survey. A little bit more than 47% of them completed at least the GMSR and health measures (see the Measures section). Thus, considering the aims of the current study, we have included in the analyses a sample of 203 participants. The total sample ranged

from 18 to 66 years of age ($M = 30.70$, $SD = 10.79$). Full sociodemographic characteristics are presented in Table 1.

Participants were categorized into three categories (trans women, trans men, and genderqueer/nonbinary). Indeed, following the original study by Testa et al. (2015), we gave participants the following options: women, men, trans women (MtF), trans men (FtM), genderqueer (or both male and female/neither male nor female), cross-dresser, and other with specification. As our sample size is not so large, we preferred to use three categories instead of the six used by Testa et al. (2015). In doing so, we categorized women and MtF participants as "trans women," men and FtM participants as "trans men," and genderqueer and other as "gender nonconforming/nonbinary." As regards this last categorization, all participants who answered "other" declared to have a nonbinary identity. On the basis of this categorization, 27.3% ($n = 56$) participants identified as trans women, 48.8% ($n = 100$) as trans men, and 23.9% ($n = 47$) as gender nonconforming/nonbinary. Only two participants self-identified as cross-dresser. Because of the scarce representativity of this subpopulation, we decided to remove these participants from the final sample. The only difference detected in the sample was related to the age, so that trans men were younger than other groups.

Measures

Sociodemographic characteristics. Sociodemographic variables used in the current study included gender identity, age, ethnicity (African American or Black, Caucasian, European or White, Hispanic or Latino, Asian, and Mixed), level of education (\leq high school vs. \geq college or other), living environment (urban, suburban, or rural), annual income, political activism (yes/no), and religious education (yes/no).

Minority stress and resilience. The GMSR (Testa et al., 2015) is a 58-item scale assessing minority stress and resilience in TGNC people. The GMSR is constituted by nine subscales, measuring distal and proximal stressors, as well as protective factors.

As regards the distal stressors, the GMSR subscales are (a) Gender-Related Discrimination (D; five items), which assesses relevant forms of discrimination (an example item is "Because of my gender identity or expression, I have had difficulty finding a bathroom I feel comfortable using when I am out in public"); (b) Gender-Related Rejection (R; six items), which assesses relevant forms of rejection (an example item is "I have had difficulty finding a partner or have had a relationship end because of my gender identity or expression"); (c) Gender-Related Victimization (V; seven items), which assesses relevant forms of victimization (an example item is "I have been threatened with being outed or blackmailed because of my gender identity or expression"); and (d) Nonaffirmation of Gender Identity (NA; six items), whose items reflect prevalent experiences of gender identity nonaffirmation (an example item is "I have to repeatedly explain my gender identity to people or correct the pronouns people use"). As regards the proximal stressors, Testa et al. (2015) included in their model the following dimensions: (a) Internalized Transphobia (IT; eight items), which assesses shame toward one's own TGNC identity (an example item is "I resent my gender identity or expression."); (b) Negative Expectations for Future Events (NE; nine items), whose items assess expectations related to the expression of one's own gender identity or history (an example item is "If I express my

Table 1
Sociodemographic Characteristics of the “Stress and Resilience in Trans Population Survey” Sample of TGNC People (N = 203)

Demographics	Trans women	Trans men	Gender nonconforming/nonbinary	p
Sample size, n (%)	56 (27.3)	100 (48.8)	47 (23.9)	—
Age, M (SD)	35.20 (12.53)	28.62 (8.68)	29.79 (11.23)	<.001
Ethnicity, n (%)				.117
African American or Black	—	—	1 (.5)	
Caucasian, European or White	53 (26.1)	97 (47.8)	42 (20.7)	
Hispanic or Latino	3 (1.5)	2 (1)	1 (.5)	
Asian	—	—	2 (1)	
Mixed	—	1 (.5)	1 (.5)	
Education, n (%)				.445
≤High school	25 (12.3)	55 (27.1)	23 (11.3)	
≥College or other	31 (15.3)	45 (22.2)	24 (11.8)	
Living environment, n (%)				.258
Urban	44 (21.7)	65 (32)	28 (13.8)	
Suburban	7 (3.4)	25 (12.3)	13 (6.4)	
Rural	5 (2.5)	10 (4.9)	6 (3)	
Annual income, ^a n (%)				.066
No income	29 (14.4)	53 (26.2)	31 (15.3)	
Up to 15,000€	17 (8.4)	35 (17.3)	9 (4.5)	
From 15,001 to 28,000€	9 (4.5)	8 (4)	2 (1)	
From 28,001€ to 55,000€	1 (.5)	3 (1.5)	4 (2)	
From 55,001€ to 75,000€	—	—	1 (.5)	
Over 75,000€	—	—	—	
TGNC political activism, n (%)				.071
Yes	29 (14.3)	40 (19.7)	34 (16.7)	
No	27 (13.3)	60 (29.6)	13 (6.4)	
Religious education, n (%)				.582
Yes	45 (22.2)	74 (36.5)	34 (16.7)	
No	11 (5.4)	26 (12.8)	13 (6.4)	

Note. TGNC = transgender and gender nonconforming. Group differences in age were assessed through the one-way analysis of variance. Group differences in all other variables were assessed through the χ^2 test.

^a The annual income has been asked following the range used by the National Institute of Statistic.

gender identity/history, others wouldn't accept me"); and (c) Non-disclosure (ND; five items), which reflects different means of nondisclosure used by TGNC individuals (an example item is "Because I don't want others to know my gender identity/history, I modify my way of speaking"). Finally, regarding the protective factors, the GMSR assesses the following dimensions: (a) Community Connectedness (C; five items), whose items evaluate alienation and isolation from the TGNC community (an example item is "I feel part of a community of people who share my gender identity"), and (b) Pride (P; eight items), which assesses pride feelings toward one's own TGNC identity (an example item is "My gender identity or expression makes me feel special and unique").

Response options for the distal stressors scales (i.e., D, R, and V) are "never," "yes, before age 18," "yes, after age 18," and "yes, in the past year." Respondents may check all that apply to them, and responses are coded as 0 if "never" and 1 if "yes" at any point. Instead, response options for the proximal stressors (i.e., NA, IT, NE, and ND) and resilience scales (i.e., C and P) range from 0 (*strongly disagree*) to 4 (*strongly agree*) on a 5-point Likert scale. Scoring information are reported in the Appendix, where the Italian version of the GMSR is also included.

Anxiety. The DSM-5 Severity Measure for Generalized Anxiety Disorder—Adult (Craske et al., 2013) is a 10-item scale assessing the severity of anxious symptoms over the last 7 days on a 5-point Likert scale, from 0 (*never*) to 4 (*all of the time*). An example item is "During the past 7 days, I have felt moments of

sudden terror, fear, or fright." The total score is obtained by dividing the raw total score by number of items in the scale and, thus, can range from 0 to 5, with higher scores indicating greater severity of anxiety. The alpha coefficient was .90.

Depression. The short-version of the DSM-5 Severity Measure for Depression—Adult (SMDA; Spitzer, Williams, & Kroenke, n.d.) is a 9-item scale assessing the severity of depressive symptoms over the last 7 days on a 4-point Likert scale, from 0 (*not at all*) to 3 (*nearly every day*). The initial question is "Over the last 7 days, how often have you been bothered by any of the following problems?", and an example item is "Little interest or pleasure in doing things." The total score is calculated as the sum of the scores for each answer and can range from 0 to 27, with higher scores indicating greater severity of depression. The alpha coefficient was .90.

Perceived stress. The Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) is a 10-item measure evaluating the degree to which specific situations were appraised as stressful on a 5-point Likert scale, from 0 (*never*) to 4 (*very often*). An example item is "In the last month, how often have you been upset because of something that happened unexpectedly?" The total score is obtained through the sum of the scores for each answer, with higher scores indicating greater perceived stress. The alpha coefficient was .90.

Social support. The Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item measure assessing the level of perceived support on a 7-point

Likert scale, from 1 (*very strongly disagree*) to 7 (*very strongly agree*). This measure consists of three subscales: (a) Family (e.g., “I get the emotional help and support I need from my family”), (b) Friends (e.g., “My friends really try to help me”), and (c) Significant others (e.g., “There is a special person with whom I can share my joys and sorrows”). The alpha coefficients were .95, .94, and .94, for the subscales, respectively.

Statistical Analyses

All statistical analyses were performed using R (R Core Team, 2018). Preliminary analyses mainly concerned the handling of missing data. The NE subscale of the GMSR was the only subscale with missing data. Specifically, 2.44% of participants had missing values on Item 1, 2.93% on Item 2, and 1.95% on both Items 4 and 9. Missing data were treated with the *k* nearest neighbors (KNN) algorithm (Andridge & Little, 2010) for missing value imputation. For a given missing value, KNN algorithm searched through the entire dataset for the *k* most similar participant (the neighbors) to the participant with the missing value, *k* typically being a small integer (10 in this case). Then, the missing value was imputed summarizing the values observed on those *k* neighbors. To determine which of the *k* subjects were most similar to the participant with missing value, a distance measure in a multidimensional space was used. Specifically, we used the Euclidean distance, a commonly used distance metric.

To evaluate the model fit of the GMSR, we conducted a confirmatory factor analysis (CFA) with the lavaan R package (Rosseel, 2012), specifying all the measurement models as reflective (Dolce & Lauro, 2015). CFA was performed using robust weighted least square estimation (WLSM). Model fit was assessed in accordance with the recommendations by Cole (1987) and Kline (1998), thus through the following indices: chi square/degrees of freedom (χ^2/df), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), comparative fit index (CFI), and Tucker-Lewis index (TLI).

After testing for the model fit, we calculated the internal consistency reliability of each scales through the Cronbach's alpha. We evaluated the criterion, convergent, and discriminant validity of the GMSR by conducting a series of correlations between GMSR subscales and health measures and using the Pearson's correlation coefficient.

Results

CFA

The original nine-factor model proposed by Testa et al. (2015) was fit to the data obtained from the Italian sample, confirming our first hypothesis. Indeed, the following indices were found: $\chi^2/df = 1.58$, CFI = .94, RMSEA = .05 (confidence interval [CI] = .05, .06), SRMR = .08, and TLI = .94. Internal consistency reliability assessed through the Cronbach's alpha, except for the first stress scale (i.e., “Gender-related discrimination”; $\alpha = .51$), was adequate, ranged from .64 to .92. Full model statistics (i.e., factor loadings, Cronbach's alphas, mean, and standard deviations) are reported in Table 2.

Criterion, Convergent, and Discriminant Validity of the GMSR

Correlational analyses for Hypotheses 2 through 5 are reported in Table 3. Regarding criterion validity of the GMSR, the seven stress GMSR scales correlated positively with both anxiety and depression, confirming our second hypothesis. On the contrary, among the two resilience scales, the pride subscales correlated negatively with depression, but not anxiety, while the community connectedness did not correlate with any of the mental health measures, thus partially confirmed our third hypothesis. Effect sizes ranged from .19 to .48.

Regarding convergent validity of the GMSR, the seven stress scales correlated positively with the perceived stress, confirming our fourth hypothesis. Effect sizes ranged from .19 to .48. Similarly, community connectedness scale correlated positively with one of the subscales of the perceived social support measures (i.e., support from friends), confirming our fifth hypothesis. In this case, the effect size was .13. Finally, regarding the discriminant validity of the GMSR, the sixth hypothesis was also confirmed, as all correlations related to the hypotheses from 2 to 5 are below .60.

Discussion

The current study aimed to evaluate the psychometric characteristics of the GMSR in an Italian sample of TGNC individuals. Results obtained through the CFA showed an appropriate fit to the data, confirming the original nine-factor structure. Furthermore, analyses demonstrated that the GMSR has a good criterion, convergent, and discriminant validity in the Italian sample. To our knowledge, this is the first comprehensive measure of gender minority stress available for use in the Italian context, providing Italian researchers and clinicians of a valuable instrument to assess this dimension in the TGNC population.

Regarding criterion validity, we found significant associations between stressors (both distal and proximal) and health outcomes (i.e., anxiety and depression). This is in line with the MST, which postulates that distal and proximal stressors are dimensions that work together to bring about negative mental health outcomes (Hendricks & Testa, 2012; Meyer, 2003), as empirically demonstrated in previous research on TGNC population (e.g., Bockting et al., 2013; Breslow et al., 2015; James et al., 2016; Testa et al., 2017). Similarly, pride feelings toward one's own TGNC identity resulted significantly and negatively associated with depression, and this is in line with the MST and with the research tradition highlighting that resilience factors protect TGNC individuals against the negative effects of stigma on health (e.g., Pflum et al., 2015).

In contrast, community connectedness did not result significantly associated with health measures. This finding differs from the findings of Testa et al. (2015) in their U.S. sample of TGNC individuals. This difference might be due to sociocultural differences between social contexts (Italy vs. United States). For instance, in a comparison between American, Italian, and Iranian individuals, Cicognani et al. (2008) found higher levels of social participation and sense of community among American than both Italian and Iranian students, showing the greater social capital of the American society (Putnam, 2000). Our finding may highlight that Italian general population—and Italian TGNC individuals in

Table 2
GMSR Confirmatory Factor Model in the Sample of Italian TGNC People (N = 203)

Scale and item	Alpha	Range	Total score: <i>M (SD)</i>	Factor loading (<i>SE</i>)
Gender-related discrimination (D)	.51	0–5	2.09 (1.39)	
D1				1.00
D2				.57 (.19)
D3				.43 (.18)
D4				.89 (.17)
D5				1.13 (.22)
Gender-related rejection (R)	.64	0–6	2.32 (1.68)	
R1				1.00
R2				1.76 (.46)
R3				1.77 (.51)
R4				1.83 (.47)
R5				1.46 (.43)
R6				1.30 (.41)
Gender-related victimization (V)	.76	0–6	1.97 (1.75)	
V1				1.00
V2				.79 (.16)
V3				.95 (.17)
V4				1.29 (.16)
V5				1.18 (.17)
V6				.62 (.14)
Nonaffirmation of gender identity (NA)	.92	0–24	11.8 (7.65)	
NA1				1.00
NA2				1.25 (.10)
NA3				1.27 (.12)
NA4				1.04 (.13)
NA5				1.46 (.14)
NA6				1.47 (.13)
Internalized transphobia (IT)	.90	0–32	12.14 (8.69)	
IT1				1.00
IT2				1.09 (.10)
IT3				1.45 (.13)
IT4				1.33 (.13)
IT5				1.13 (.13)
IT6				1.13 (.13)
IT7				1.03 (.11)
IT8				1.00 (.13)
Negative expectation for the future (NE)	.91	0–34	16.92 (8.18)	
NE1				1.00
NE2				.91 (.10)
NE3				1.26 (.09)
NE4				1.19 (.09)
NE5				1.14 (.10)
NE6				1.08 (.10)
NE7				1.06 (.12)
NE8				.74 (.10)
NE9				.92 (.13)
Nondisclosure (ND)	.79	0–20	7.86 (5.04)	
ND1				1.00
ND2				1.27 (.17)
ND3				1.08 (.17)
ND4				.91 (.18)
ND5				1.12 (.17)
Community connectedness (C)	.76	0–20	12.23 (3.95)	
C1				1.00
C2				.84 (.14)
C3				.70 (.15)
C4				.71 (.15)
C5				.91 (.17)
Pride (P)	.85	0–32	17.43 (7.21)	
P1				1.00
P2				.92 (.15)
P3				1.39 (.21)
P4				1.28 (.16)
P5				1.17 (.15)
P6				1.47 (.20)

(table continues)

Table 2 (continued)

Scale and item	Alpha	Range	Total score: <i>M (SD)</i>	Factor loading (<i>SE</i>)
P7				1.38 (.21)
P8				.59 (.15)

Note. TGNC = transgender and gender nonconforming; $\chi^2/df = 1.58$; $CFI = .94$; $RMSEA = .05$ ($CI = .05, .06$); $SRMR = .08$; $TLI = .94$. M = Mean; SD = Standard Deviation; SE = Standard Error; df = Degrees of freedom; $RMSEA$ = Root Mean Square Error of Approximation; $SRMR$ = Standardized Root Mean Square Residual; CFI = Comparative Fit Index; TLI = Tucker-Lewis index.

particular—benefit more from individual-level resilience factors, as already demonstrated by Scandurra et al. (2017b) on a sample of TGNC individuals, whose individual resilience buffered that effects of stigma on health.

On the other hand, our results confirmed both the convergent and discriminant validity of the Italian version of the GMSR, as (a) both distal and proximal stressors resulted positively associated with perceived stress scales; (b) community connectedness resulted positively associated with perceived support from friends; and (c) all correlations are below .60 (Kazdin, 2003). These findings demonstrated that the GMSR measures independent and meaningful constructs, adequately reflecting each construct assessed. The only exception regards the first subscale (i.e., gender-related discrimination), which did not show a high internal consistency reliability. However, even in the U.S. version of the GMSR, this subscale was that with the lower internal consistency reliability compared to all other subscales. Thus, Italian researchers should use this subscale cautiously, associating to the GMSR other scales measuring the gender-related discrimination experienced by TGNC people.

Overall, the GMSR has proven itself to be an important resource enabling clinicians and researchers to assess the gender minority stress in TGNC population. Indeed, it provides a general assessment of a range of stressors impacting TGNC lives, as well as resilience factors buffering the effects of stress on health.

Certain limitations must be considered in interpreting the results. First, the study was cross-sectional, and this did not allow to fully evaluate the convergent validity of the GMSR. Future studies should overcome this limitation by assessing the convergent validity in different measurement times (e.g., in different stages of clinical interventions aimed at ameliorating the negative effects of stigma on health). Second, although this study recruited one of the biggest samples of Italian TGNC individuals (see, e.g., Amodeo, Vitelli, Scandurra, Picariello, & Valerio, 2015; Cussino et al., 2017; Loverro et al., 2016), the sample continues to be relatively small and nonrepresentative. Third, related to the previous limitation, the relatively small number of participants did not allow us to make differences among diverse gender identity (e.g., women, men, trans women, trans men, genderqueer/nonbinary, cross-dresser, and other gender diverse groups) and ethnicity (e.g., African American, Caucasian, Latino, etc.) groups. Future studies should investigate differences in GMSR dimensions in gender and ethnic diverse groups. Fourth, we assessed the role of only two protective factors (i.e., community connectedness and pride). Future studies should consider assessing other positive identity dimensions, such as self-awareness, authenticity, community trust, and intimacy (e.g., Baiocco et al., 2018; Di Napoli, Dolce, & Arcidiacono, 2019; Riggle & Mohr, 2015; Sommantico, De Rosa, & Parello, 2018).

Table 3
Correlations Between GMSR Subscales, Mental Health Measures, and Social Support

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. GMSR-D	—														
2. GMSR-R	.50***	—													
3. GMSR-V	.45***	.58***	—												
4. GMSR-NA	.21**	.21**	.05	—											
5. GMSR-IT	.11	.14*	.07	.44***	—										
6. GMSR-NE	.28***	.32***	.27***	.51***	.47***	—									
7. GMSR-ND	.04	.11	.01	.29***	.37***	.35***	—								
8. GMSR-P	-.06	.02	.06	.09	-.39***	-.11	-.30***	—							
9. GMSR-C	-.08	-.04	-.15*	.09	-.16*	-.06	-.06	.30***	—						
10. SMGAD	.24**	.31***	.29***	.42***	.43***	.47***	.28***	-.07	-.05	—					
11. SMDA	.19*	.25***	.22**	.35***	.45***	.48***	.25***	-.17*	-.02	.83***	—				
12. PSS	.20**	.19**	.20**	.39***	.43***	.48***	.21**	-.15*	-.02	.80***	.78***	—			
13. MSPSS family	-.15*	-.29***	-.19**	-.24**	-.30***	-.30***	-.17*	.12	.08	-.28***	-.34***	-.26***	—		
14. MSPSS friends	-.05	-.19**	-.11	-.06	-.35***	-.20**	-.08	.19**	.13*	-.27***	-.29***	-.21**	.22**	—	
15. MSPSS others	-.13	-.17*	-.14*	-.09	-.21**	-.11	-.03	.01	.02	-.15*	-.17*	-.12	.24**	.53***	—

Note. GMSR = Gender and Minority Stress and Resilience Measure; GMSR-D = Gender-Related Discrimination; GMSR-R = Gender-Related Rejection; GMSR-V = Gender-Related Victimization; GMSR-NA = Non-affirmation of Gender Identity; GMSR-IT = Internalized Transphobia; GMSR-NE = Negative Expectation for the Future; GMSR-ND = Nondisclosure; GMSR-P = Pride; GMSR-C = Community Connectedness; SMGAD = Severity Measure for Generalized Anxiety Disorder; SMDA = Severity Measure for Depression; PSS = Perceived Stress Scale; MSPSS = Multidimensional Scale of Perceived Social Support.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Notwithstanding aforementioned limitations, both Italian researchers and clinicians may benefit from the use of the GMSR in their respective practices, expanding scientific and clinical knowledge on TGNC population. Indeed, the GMSR allows to explore the intersection between distal and proximal stressors, resilience factors, and health outcomes in TGNC population, covering diverse gender identities, such as binary and nonbinary people. Furthermore, clinicians and researchers may use the GMSR to evaluate the effectiveness of specific clinical interventions in ameliorating the detrimental effects that stigma and minority stress can have on health. Finally, clinicians may also use the GMSR within clinical settings to discuss with TGNC clients about their unique risk and protective factors. We hope that the use of the GMSR may promote a culturally affirmative research and clinical practice with Italian TGNC individuals.

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Appendix

Italian Version of the GMSR Scale (Testa et al., 2015)

Istruzioni

D, R, e V (primi 17 item). Ti preghiamo di cliccare su tutte le possibilità di risposta che ritieni valide (ad es., puoi cliccare sia “dopo i 18 anni” che “nell’ultimo anno” se entrambe le opzioni sono vere). In questo questionario, per “espressione di genere” si intende quanto mascolino / femminile / androgino appare un individuo, in base a vari fattori, quali atteggiamenti, abbigliamento, personalità, ecc.

Tutti gli Altri Item. Per favore, indica quanto sei in accordo con le seguenti affermazioni.

Scoring. Per i primi 17 item (D, R, e V), trasformare “Mai” in 0 e tutte le altre opzioni (“Si, prima dei 18 anni”, “Si, dopo i 18 anni” e “Si, nell’ultimo anno”) in 1; poi sommare i singoli punteggi per ottenere un punteggio totale. Per tutti gli altri item, sommare i singoli punteggi per ottenere un punteggio totale. Per gli ultimi due item della sottoscala C invertire i punteggi in modo che 0 = 4; 1 = 3; 2 = 2; 3 = 1; 4 = 0.

D—Discriminazioni

Opzioni di risposta: *Mai; Si, prima dei 18 anni; Si, dopo i 18 anni; Si, nell’ultimo Anno*

1. Ho avuto difficoltà ad accedere a trattamenti medici o psicologici (relativi alla transizione o ad altro) a causa della mia identità o espressione di genere.
2. A causa della mia identità o espressione di genere, ho avuto difficoltà a trovare un bagno da utilizzare quando ero fuori casa.
3. Ho avuto delle difficoltà ad ottenere i documenti di identità che corrispondessero alla mia identità di genere.
4. Ho avuto difficoltà a trovare casa o ad abitarci a causa della mia identità o espressione di genere.
5. Ho avuto difficoltà a trovare lavoro o a mantenerlo, o mi è stata negata una promozione a causa della mia identità o espressione di genere.

R—Rifiuto

Opzioni di risposta: *Mai; Si, prima dei 18 anni; Si, dopo i 18 anni; Si, nell’ultimo Anno*

1. Ho avuto difficoltà a trovare un* partner oppure una mia relazione di coppia è finita a causa della mia identità o espressione di genere.
2. Sono stat* rifiutat* o non mi sono sentit* accolt* da una comunità religiosa a causa della mia identità o espressione di genere.
3. Sono stat* rifiutat* o non mi sono sentit* accolt* dalla mia comunità etnica a causa della mia identità o espressione di genere.
4. Sono stat* rifiutat* o allontanat* dagli amici a causa della mia identità o espressione di genere.
5. Sono stat* allontanat* da scuola o dal lavoro a causa della mia identità o espressione di genere.
6. Sono stat* rifiutat* o allontanat* dalla famiglia a causa della mia identità o espressione di genere.

V—Vittimizzazione

Opzioni di risposta: *Mai; Si, prima dei 18 anni; Si, Dopo i 18 anni; Si, Nell’ultimo Anno*

1. Sono stat* verbalmente molestato* o deriso* a causa della mia identità o espressione di genere.
2. Ho subito minacce o ricatti che la mia identità o espressione di genere venisse svelata.
3. Ho subito danneggiamenti di oggetti di mia proprietà a causa della mia identità o espressione di genere.
4. Sono stat* minacciato* di danni fisici a causa della mia identità o espressione di genere.
5. Sono stat* spinto*, urtato*, colpito*, o mi sono stati lanciati oggetti contro a causa della mia identità o espressione di genere.
6. Ho subito contatti sessuali contro la mia volontà a causa della mia identità o espressione di genere.

(Appendix continues)

NA—Non-affermazione

Opzioni di risposta: *Fortemente in disaccordo; Abbastanza in disaccordo; Né in accordo né in disaccordo; Abbastanza in accordo; Fortemente in accordo*

1. Devo ripetutamente spiegare alle persone la mia identità di genere o correggere i pronomi che utilizzano.
2. Ho difficoltà ad essere percepit* nel mio genere.
3. Devo applicarmi molto affinché le persone vedano il mio genere senza avere dubbi su di esso.
4. Devo essere “ipermaschile” o “iperfemminile” affinché le persone accettino il mio genere.
5. A causa del mio corpo o di come appaio, le persone non rispettano la mia identità di genere.
6. Le persone non mi capiscono perché non vedono il mio genere come lo vedo io.

IT—Transfobia Interiorizzata

Opzioni di risposta: *Fortemente in disaccordo; Abbastanza in disaccordo; Né in accordo né in disaccordo; Abbastanza in accordo; Fortemente in accordo*

1. Non sopporto la mia identità o espressione di genere.
2. La mia identità o espressione di genere mi fa sentire uno scherzo della natura.
3. Quando penso alla mia identità o espressione di genere mi sento depress*.
4. Quando penso alla mia identità o espressione di genere mi sento infelice.
5. A causa della mia identità o espressione di genere mi sento un emarginat*.
6. Spesso mi chiedo: Perché la mia identità o espressione di genere non può essere semplicemente normale?

7. Sento che la mia identità o espressione di genere è imbarazzante.
8. Invidio le persone che non hanno un'identità o un'espressione di genere come la mia.

P—Pride

Opzioni di risposta: *Fortemente in disaccordo; Abbastanza in disaccordo; Né in accordo né in disaccordo; Abbastanza in accordo; Fortemente in accordo*

1. La mia identità o espressione di genere mi fa sentire speciale e unic*.
2. Mi sta bene che ci siano delle persone che sappiano che la mia identità di genere è diversa dal sesso assegnatomi alla nascita.
3. Non ho alcun problema a parlare della mia identità di genere e della mia storia di genere quasi con nessuno.
4. È un dono che la mia identità di genere sia diversa dal sesso assegnatomi alla nascita.
5. Sono come le altre persone ma sono anche speciale perché la mia identità di genere è diversa dal sesso assegnatomi alla nascita.
6. Sono orgoglios* di essere una persona la cui identità di genere è diversa dal sesso assegnatomi alla nascita.
7. Mi sento a mio agio nel rivelare agli altri che la mia identità di genere è diversa dal sesso assegnatomi alla nascita.
8. Preferirei che le persone sapessero tutto di me e che mi accettassero per la mia identità di genere e per la mia storia di genere.

Attualmente vivi nel tuo genere elettivo per tutto il tempo o per la maggior parte del tempo?

(Il “genere elettivo” è quello che tu senti appropriato per te stess*)

Se NO, leggi “identità di genere”; Se SI, usa “Storia di genere”.

(Appendix continues)

NE—Aspettative Negative per gli Eventi Futuri

Opzioni di risposta: *Fortemente in disaccordo; Abbastanza in disaccordo; Né in accordo né in disaccordo; Abbastanza in accordo; Fortemente in accordo*

1. Se esprimessi la mia identità/storia di genere, gli altri non mi accetterebbero.
2. Se esprimessi la mia identità/storia di genere, i datori di lavoro non mi assumerebbero.
3. Se esprimessi la mia identità/storia di genere, le persone penserebbero che sono malat* di mente, "pazz**".
4. Se esprimessi la mia identità/storia di genere, le persone penserebbero che sono disgustos* o immorale.
5. Se esprimessi la mia identità/storia di genere, molte persone mi prenderebbero meno sul serio.
6. Se esprimessi la mia identità/storia di genere, molte persone mi guarderebbero dall'alto in basso.
7. Se esprimessi la mia identità/storia di genere, potrei essere vittima di crimini o violenze.
8. Se esprimessi la mia identità/storia di genere, potrei essere arrestat* o molestato dalla polizia.
9. Se esprimessi la mia identità/storia di genere, potrebbe essermi negata un'adeguata assistenza medica.

ND—Non Disvelamento

Opzioni di risposta: *Fortemente in disaccordo; Abbastanza in disaccordo; Né in accordo né in disaccordo; Abbastanza in accordo; Fortemente in accordo*

1. Poiché non voglio che gli altri sappiano della mia identità/storia di genere, non parlo di alcune esperienze del mio passato o ne cambio alcune parti.

2. Poiché non voglio che gli altri sappiano della mia identità/storia di genere, modifico il mio modo di parlare.
3. Poiché non voglio che gli altri sappiano della mia identità/storia di genere, presto particolare attenzione al modo in cui mi vesto o mi preparo.
4. Poiché non voglio che gli altri sappiano della mia identità/storia di genere, evito di mostrare il mio corpo, ad esempio evito di indossare un costume da bagno o di stare nud* negli spogliatoi.
5. Poiché non voglio che gli altri sappiano della mia identità/storia di genere, cambio il mio modo di camminare, di gesticolare, di sedermi o di alzarmi.

C—Connessione alla Comunità

Opzioni di risposta: *Fortemente in disaccordo; Abbastanza in disaccordo; Né in accordo né in disaccordo; Abbastanza in accordo; Fortemente in accordo*

1. Mi sento parte di una comunità di persone che condivide la mia identità di genere.
2. Mi sento conness* alle altre persone che condividono la mia identità di genere.
3. Quando interagisco con membri della comunità che condividono la mia identità di genere, sento un senso di appartenenza.
4. Non sono come altre persone che condividono la mia identità di genere. (REVERSE)
5. Mi sento isolat* e separat* dalle altre persone che condividono la mia identità di genere. (REVERSE)

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