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Assessment of a “Transgender Identity Stigma” scale among trans women in India: Findings from exploratory and confirmatory factor analyses

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ABSTRACT

Background: Sexual minority stigma has been shown to influence mental health and sexual risk, but limited research is available on measuring transgender-identity stigma among trans women in India. We adapted an Exposure to Transphobia scale to the Indian context and tested a 14-item Transgender Identity Stigma Questionnaire (TGISQ) among trans women in India. We aimed to assess and validate the factor structure of the TGISQ and to assess its reliability.

Methods: Data were from a cross-sectional survey among 300 trans women (including hijras/thirunangais) from six urban/semi-urban sites in India. The TGISQ consisted of self-reported ratings on 14 items. We initially conducted exploratory factor analysis, using principal axis factoring (PAF) and promax rotation, and assessed reliability (internal consistency) using Cronbach's alpha; we then conducted confirmatory factor analysis to assess construct validity (factorial validity). Construct validity of the final 13-item Transgender Identity Stigma Scale (TGISS) was also examined by computing Pearson's correlations between TGISS and relevant theoretical constructs (e.g., depression, social support).

Results: PAF identified two factors: enacted stigma (5 items) and felt normative stigma (8 items). The final 13-item TGISS had high reliability and acceptable construct validity.

Conclusions: The TGISS was found to have adequate psychometric properties, making it the first valid and reliable scale to measure stigma and discrimination faced by trans women in India. Future studies can further refine TGISS, which might help in comparing the differences in stigma experiences among diverse subgroups of trans women, and in monitoring and evaluating the success of stigma reduction programs.

KEYWORDS

India; scale reliability; scale validity; transgender identity stigma scale; transgender

Transgender people have been visible in the Indian subcontinent for centuries. More than 1,500 years ago, the *Kama Sutra* referred to transgender people as *Tritiya Prakriti*, people with a “third nature” (Danielou, 1994). Despite this visible presence for centuries, understanding about trans people in India is limited, which partly accounts for the stigma and discrimination faced by trans women from their biological families and other members of society. Depending on the region where they reside, trans women in India self-identify as hijras or kinnars (North India), jogta or jogappa (western India), and thirunangai or aravani (South India) (Chakrapani, 2014; Reddy, 2005). Hijra communities, in particular, have an established subculture with a

hierarchical social structure (such as gurus, or masters, and chelas, or disciples) and established kinship relations among them as an alternative to biological families (Chakrapani, Newman, Mhaprolkar, & Kavi, 2007). Jogtas or jogappas are considered to be holy persons and some of them serve as priests in the temples of Goddess Yellamma in Karnataka and Maharashtra in western India. Also, when compared to hijras, a higher proportion of jogtas may be accepted by their biological families as their transgender status is believed to be due to divine intervention (Aneka, 2014). Thirunangais in Tamil Nadu usually have mother-daughter (*Amma-Ponnu*) relationships, although some of them also adopt guru-chela relationships that are similar to that among

hijras. Thirunangais, however, often live with their peers, given the lack of support from their biological families.

Trans women across the world experience health disparities associated with pervasive stigma; these health disparities include reduced access to health care, negative attitudes from health care workers, and a high HIV burden (Baral et al., 2013; Kanamori & Cornelius-White, 2016; Kattari, Walls, Whitfield, & Langenderfer-Magruder, 2015). Evidence from developed countries indicates that transgender identity-related stigma can influence mental health and sexual risk among trans women (Lewis, 2009; Meyer, 1995, 2003; Mustanski, Garofalo, & Emerson, 2010; Sugano, Nemoto, & Operario, 2006; Trujillo et al., 2017). Studies from India too have shown that trans women face multiple and intersectional stigma and discrimination and human rights violations related to their transgender identity, sex-work status, and HIV status (Bharat, 2011; Chakrapani & Bharat, 2014; Kalra & Shah, 2013; People's Union for Civil Liberties—Karnataka [PUCL-K], 2003). Further, experience of, or anticipated, discrimination from health care providers has been shown to hinder trans women's access to HIV testing, antiretroviral treatment (Beattie et al., 2012; Chakrapani, Newman, Shunmugam, & Dubrow, 2011), and sexual health services (Chakrapani, Mehta, Buggineni, & Barr, 2008) in public hospitals in India.

Sexual stigma has been defined as “negative regard, inferior status, and relative powerlessness that society collectively accords to any non-heterosexual behavior, identity, relationship, or community” (Herek, Gillis, & Cogan, 2009). Sexual stigma, thus, can affect a range of nonheterosexual identified persons such as gay, lesbian, and bisexual people (Meyer, 2003). People with diverse gender identities, including trans-identified people, may also identify as sexually diverse and be impacted by sexual stigma. Sexual stigma includes multiple components such as enacted stigma, felt normative stigma and internalized stigma (Herek, 2007). Enacted stigma or discrimination refers to the unjust treatment of sexual minority people; felt normative stigma refers to the negative social and cultural norms and beliefs regarding sexual and gender minorities and includes anticipation of discrimination; and internalized stigma refers to internalization of societal negative attitudes toward sexual minorities and feeling shame and blame about being a sexual or gender minority. The term *transphobia* has also been used to

refer to stigma and discrimination directed towards transgender people; this usually encapsulates negative attitudes of cisgender (nontransgender) persons toward trans people (Carroll & Gilroy, 2002; Hill & Willoughby, 2005).

Despite the pervasive stigma experienced by trans women in India and the consequent health disparities, limited investigations have focused on measuring stigma faced by them. Globally, only a handful of investigations have reported using any validated scales to measure transgender identity-related stigma (Sugano et al., 2006; Walch, Ngamake, Francisco, Stitt, & Shingler, 2012), although at least five scales that measure general population's attitudes toward transgender people have been described (Hill & Willoughby, 2005; Kanamori, Cornelius-White, Pegors, Daniel, & Hulgus, 2016; Nagoshi et al., 2008; Ngamake, Walch, & Raveepatarakul, 2013; Winter et al., 2009). Without a locally validated stigma scale, meaningful comparisons of the nature and extent of stigma between different trans women populations within India will be difficult. To address this gap and to contribute to stigma-reduction efforts, we adapted an 11-item Exposure to Transphobia scale used in United States (Sugano et al., 2006). We added three more items (to assess violence from police) and tested this 14-item transgender identity stigma questionnaire (TGISQ) among trans women in India. This modified questionnaire was used as part of a study that assessed the impact of transgender identity stigma on mental health and sexual risk (Chakrapani, Newman, Shunmugam, Logie, & Samuel, 2017). The objective of this analysis was to assess and validate the dimensionality (factor structure) of TGISQ and to assess its reliability. Based on the nature of items in TGISQ and the Exposure to Transphobia scale from which it was derived, we hypothesized that TGISQ has a two-factor structure—one factor related to stigma and another related to discrimination.

Methods

Participants

Between October 2011 and January 2012, we conducted a cross-sectional survey among a convenience sample of 300 trans women from six study sites in India. Participants were recruited through six nongovernmental agencies, including five community-based organizations (CBOs), which offer HIV prevention services to

trans women. Three agencies—the Humsafar Trust (Mumbai), the Pahal Foundation (Delhi), and SAATHII (Kolkata)—were located in cities; three other agencies—Social Welfare Association for Men (Kancheepuram), Lotus (Kumbakonam), and Mooknayak (Sangli)—were located in semiurban or rural areas. Trained peer interviewers approached potential participants who visited the drop-in centers or cruising sites covered by the partner agencies and enrolled those persons who were willing and eligible. The eligibility criteria were age 18 years and over, capacity to provide informed consent, and self-identification as a trans woman (e.g., hijras, thirunangai).

The study received ethics approval from the institutional review board of the Humsafar Trust, a CBO working in Mumbai with trans people and men who have sex with men (MSM).

Survey questionnaires were administered orally by trained field research interviewers in four native languages (Tamil, Hindi, Marathi, and Bengali). Interviews were conducted in private rooms of the CBOs or in private places that were convenient for the interviewees. Participants received INR 250 (about US\$4) to compensate for their time and travel expenses.

Key measure

Transgender identity stigma questionnaire (TGISQ)

TGISQ is a modified version of the Exposure to Transphobia scale used in a U.S. study (Sugano et al., 2006) that examined the relation between exposure to transphobia and sexual risk behaviors. The Exposure to Transphobia scale asked about participants' experiences of being transgender and was adapted from an 11-item homophobia scale used by Diaz, Ayala, Bein, Henne, & Marin (2001). Sample items of the TGISQ include statements such as, How often were you made fun of or called names for being [transgender or equivalent term]? and How often were you hit or beaten up for being [transgender or equivalent term]? The Tamil and Hindi language versions of the original 11-item Exposure to Transphobia scale were reviewed by a five-member group of trans community leaders (in Chennai and Mumbai) and the group suggested modifying certain items and adding three items to consider police violence (verbal, physical, and sexual abuse by police). The addition of the three items was supported by documentation of police violence from academic and gray literature (PUCL-K, 2003; Shaw

et al., 2012). The 14-item TGISQ was pretested among five trans women (in Tamil and Hindi) and then finalized. Responses were scored on Likert-type scales with higher numbers reflecting more frequent experiences (1 = *never*, 2 = *once or twice*, 3 = *a few times*, 4 = *many times*). The brief content of the 14 items is summarized in Table 2.

Other measures used in the study

The transgender identity stigma questionnaire was administered as part of a larger study that examined the effect of stigma on mental health and the role of social support and resilient coping among 300 MSM and 300 trans women (Chakrapani et al., 2017). Thus, we used other established scales that have been administered among MSM in India (Logie, Newman, Chakrapani, & Shunmugam, 2012).

Social support

We used the 12-item Multi-dimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988), with three subscales, to assess the perceived adequacy of support from family, friends, and a significant other. This scale provides an understanding not only of the quantity of social support a person may have but the perceived satisfaction with these supports. While not tested in India among trans women, this scale has been tested among MSM in India (Logie et al., 2012). In the current study, this social support scale had a good reliability (Cronbach's alpha = .90).

Resilient coping

The Brief Resilient Coping Scale was used to measure resilient coping, a process of positive adaptations to high stress (Sinclair & Wallston, 2004). This 4-item scale assesses both dispositional (e.g., self-confidence) and situational (e.g., active problem solving) dimensions of coping and has demonstrated high reliability and validity among adults in the United States with chronic illness (Sinclair & Wallston, 2004) and among MSM in India (Logie et al., 2012). In the current study, Cronbach's alpha of this resilient coping scale was .88.

Depression

The Beck Depression Inventory Fast-Screen (BDI-FS) is a seven-item depression screening tool that focuses on nonsomatic items associated with depression (Beck, Guth, Steer, & Ball, 1997). It has been found to

be reliable in studies with various populations (e.g., people living with HIV, Hepatitis-C patients). For this study, we used a six-item BDI-FS (with the item on suicidality removed), which has been tested among MSM in India (Logie et al., 2012). Cronbach's alpha for this depression scale was .84 in this current study.

Participant characteristics

The participants were asked to provide sociodemographic and other information, such as age (in years), average monthly income (in Indian Rupees), highest level of education attained, marital status, gender identity (primary identity as transgender, hijra, jogta, or other), whether the participant had received money for having sex with a man (in the past 3 months), and HIV status (negative, positive, unknown).

Analyses

Exploratory factor analysis, using principal axis factoring (PAF) and promax rotation, was first performed using IBM SPSS, version-21 (IBM, 2012), to identify the factor structure underlying the data. We used PAF because responses to most items were not normally distributed (Costello & Osborne, 2005) and promax rotation because it helps in getting factors with simple structure and the factors were assumed, a priori, to be correlated (Browne, 2001). The decision regarding the number of factors to be retained was primarily determined by parallel analysis, an accurate approach to estimating the number of components (Franklin, Gibson, Robertson, Pohlmann, & Fralish, 1995) and prior hypothesis regarding the number of factors (we expected two factors: stigma and discrimination) and their relevance. We also used the traditional ways of determining the number of factors such as Kaiser-Guttman criterion (eigenvalue > 1) and the scree plot (Cattell, 1966).

For this analysis, loading values >.30 were considered to be meaningful loadings; that is, an item was considered to load on a given factor if the factor loading was >.30 for that factor and <.30 for all other factors.

Based on the suggested factor structures from the PAF, a confirmatory factor analysis (CFA) was performed using IBM SPSS AMOS, version-22 (Arbuckle, 2013). CFA was used to validate the relationship among factors and between each item and its factor (factorial validity, a form of construct validity) (Bowen

& Guo, 2011). A good model fit is usually indicated by a nonsignificant χ^2 and by assessing a range of fit statistics. For the incremental fit statistics (Goodness of Fit Index: GFI; Tucker-Lewis index: TLI; and Comparative Fit Index: CFI), values < .90 indicate lack of fit, between .90 and .95 indicate reasonable fit, and between .95 and 1 indicate good fit (Tabachnick & Fidell, 2007). Root mean-square error of approximation (RMSEA) is considered to be the most informative statistic in determining model fit as it takes into account the number of variables that are estimated in the model. RMSEA values are required to be < .05 to indicate good fit and between .05 and .08 for reasonable fit (Byrne, 2001). The internal consistency (reliability) of the scale was examined using Cronbach's alpha coefficient (α) and was considered adequate when $\alpha > .70$ (DeVellis, 2012).

In order to establish the construct validity of a scale, one assesses its association with related constructs (DeVellis, 2012). Meyer's (2003) minority stress model, which conceptualizes stigma against gay/bisexual men and lesbians/bisexual women, postulates that sexual-minority stigma influences depression, with social support and coping mechanism as buffers (Meyer, 2003). Similarly, our past research among MSM in India found that sexual-minority stigma significantly predicted depression and social support and resilient coping were associated with depression (Logie et al., 2012). Empirical evidence for the associations among transgender-identity stigma, depression, social support, and coping have been documented among trans women as well (Hoffman, 2014). Therefore, we assessed construct validity by computing Pearson's correlations between TGISS (total and two subscales) and relevant theoretical constructs with which TGISS is expected to be positively (depression) or negatively correlated (social support and resilient coping) (DeVellis, 2012). Means and standard deviations (SD) of the scales were calculated based on the total scores.

Results

Sociodemographics

The sample consisted of 300 trans women recruited from three urban (66.7%) and three semiurban (33.3%) sites (See Table 1). Participants' median age was 28 (interquartile range = 10). About one-fourth (22.6%) had completed high school; 14.3% were illiterate; and 7.3% had a college degree. Nearly three-

Table 1. Sociodemographic characteristics of the sample ($N = 300$).

Characteristic	Median (Interquartile range)	
Age in years	28 (10)	
Monthly Income (INR)	6,000 (7,250)	
Items	<i>n</i>	%
Location		
Urban	200	66.7
Semiurban	100	33.3
Highest level of completed education		
Illiterate	43	14.3
Primary education (5th)	60	20.0
Elementary education (8th)	67	22.3
High school (10th)	68	22.6
Higher secondary (12th) or diploma course	40	13.3
College degree	22	7.3
Employment		
Work considered to be "traditional" for hijras (Mangti1, Badhai2)	146	48.7
Sex worker	79	26.3
Voluntary organization staff	45	15.0
Self-employed	14	4.7
Daily-wage laborer	7	2.3
Unemployed	6	2.0
Private company staff	3	1.0
Language		
Hindi	125	41.7
Tamil	75	25.0
Bengali	75	25.0
Marathi	25	8.3
HIV status		
HIV-negative/unknown	272	90.7
HIV-positive	28	9.3
Was paid for sex in the previous 3 months		
Yes	212	70.7
No	88	29.3
Marital status		
Never married	254	84.7
Ever married	46	15.3
Primary identity		
Hijra	200	66.7
Transgender (English term)	75	25.0
Jogta/jogti	25	8.3

¹Asking for money from shops.

²Offering blessings to newborn children and newly married couples.

fourths (71%) reported having received money in exchange for sex in the previous 3 months. Most of the participants self-identified as hijra (66.7%), one-fourth identified as "transgender" (English term), and 8.3% identified as jogta/jogti. Almost half (48.7%) reported earning money by *mangti* (asking for money from shops), *badhai* (offering blessings to newborns and newly married couples), and begging. Approximately one-tenth (9.3%) of participants self-reported as HIV positive. Participants' median monthly income was INR 6,000 (about US\$100).

Structure of the scale

Item-wise descriptive findings are summarized in Table 2. Exploratory factor analysis, using PAF,

was performed to identify the latent factor structure underlying the data. The overall sample size ($N = 300$) and participant-to-item ratio (21:1) allowed a stable factor solution. A preliminary scan on the correlation matrix indicated absence of multicollinearity (i.e., all had $r < .8$). The determinant of the matrix was found to be .025 (i.e. $> .00001$). A Kaiser-Meyer-Olkin (KMO) value of .78 suggested that the data were factorable. Besides, all KMO values for individual items (diagonal elements of anti-image correlation matrix) were well above the minimum necessary value of .5. The Bartlett's test of sphericity $\chi^2(91) = 1080.15$, $p < .001$, showed that there were patterned relationships between the items.

The initial solution yielded a four-factor solution by using the Kaiser criterion. However, we chose a two-factor solution on the basis of parallel analysis (as only the first two actual eigenvalues were greater than those generated by parallel analysis) and the scree plot (the point of inflection suggested that two factors were appropriate), the former being more reliable than the scree plot or Kaiser criterion (DeVellis, 2012). The two-factor solution was also consistent with the number of hypothesized factors. Five items (TS4, 7, 8, 9, 13) loaded on the first factor labeled "enacted stigma" and eight items (TS1, 2, 3, 5, 6, 10, 12, 14) loaded on the second factor labeled as "felt normative stigma" (Table 3). In "enacted stigma," three items specifically assessed violence from police (verbal and physical harassment and forced sex). One item ("How often have you lost a job or career opportunity for being a [transgender equivalent]?"—TS11) did not significantly load on either of the two factors. Thus, a 13-item transgender identity stigma scale (TGISS) was obtained.

Reliability

The overall scale reliability of the 13-item TGISS was adequate (Cronbach's alpha coefficient = .79). The reliabilities of the factors enacted stigma and felt normative stigma were .75 and .72, respectively.

Confirmation of the factor structure

Fit statistics for the two-factor measurement model of TGISS using maximum likelihood estimation method were found to have a relatively acceptable level of model fit: $\chi^2(64) = 210.41$, $p < .001$, GFI = .90, TLI = .81, CFI = .84, and RMSEA = .08.

Table 2. Item-wise descriptive analyses for the transgender identity stigma questionnaire (TGISQ) ($N = 300$).

Code	Scale items	Corrected item-total correlation (r)	Cronbach's alpha (α) if item deleted	Median	Inter-quartile range
TS1	How often have you heard that trans women are not normal?	.27	.79	4	0
TS2	How often have you felt that your transgender identity hurt and embarrassed your family?	.54	.77	4	1
TS3	How often have you had to pretend that you are not transgender in order to be accepted?	.25	.79	3	2
TS4	How often have you been hit or beaten up for being a trans woman?	.47	.78	2	2
TS5	How often has your family not accepted you because of your transgender identity?	.61	.76	3	2
TS6	How often have you lost your straight friends because of your transgender identity?	.54	.77	4	1
TS7	How often have you been verbally harassed by the police for being a trans woman?	.54	.77	3	2
TS8	How often have you been physically harassed by the police for being a trans woman?	.57	.77	2	2
TS9	How often have police forced you to have sex with them for being a trans woman?	.41	.78	1	1
TS10	How often have you lost a place to live for being a trans woman?	.42	.78	2	2
TS11*	How often have you lost a job or career opportunity for being a trans woman?	.20	.80	2	1
TS12	How often have you been made fun of or called names for being a trans woman?	.33	.79	4	0
TS13	Have you been blackmailed for money for being a trans woman?	.35	.79	1	1
TS14	How often have you heard that trans women grow old alone?	.23	.79	4	0

*Did not significantly load on either of the two factors.

Correlation between TGISS and relevant theoretical constructs

In accordance with the Minority Stress Model (Meyer, 1995), as hypothesized, social support and resilient

coping were significantly negatively correlated and depression was significantly positively correlated with both overall TGISS and its two factors (See Table 4).

Table 3. Summary of items and factor loadings for principal axis factoring, two-factor solution, for the transgender identity stigma scale ($N = 300$).

Item	Item description	Pattern Matrix		Structure Matrix	
		Factor 1 "Enacted stigma"	Factor 2 "Felt normative stigma"	Factor 1 "Enacted stigma"	Factor 2 "Felt normative stigma"
TS8	Physically harassed by police	.93	-.13	.86	.37
TS7	Verbally harassed by police	.78	-.04	.76	.38
TS9	Forced sex by police	.56	-.05	.53	.25
TS13	Blackmailed for money	.50	-.02	.48	.24
TS4	Hit or beaten up for being trans women	.34	.25	.48	.44
TS2	Hurt and embarrassed your family	.04	.67	.40	.69
TS5	Not accepted by family	.17	.61	.50	.71
TS6	Lost straight friends	.12	.55	.43	.63
TS12	Made fun of or called names	-.07	.50	.20	.46
TS14	Heard that trans women grow old alone	-.14	.45	.10	.38
TS3	Pretend as not trans women to be accepted	-.10	.43	.13	.38
TS1	Heard that trans woman is not normal	-.05	.41	.17	.39
TS10	Lost a place to live	.19	.31	.37	.42
Eigenvalue		2.92	2.80	2.92	2.80

Note. Extraction method: Principal Axis Factoring; Rotation method: Promax with Kaiser normalization; values in boldface (loadings $> .30$) indicate the primary factor on which the item loaded; eigenvalues refer to the rotated sum of squared loadings (initial solutions are not shown here); factors are correlated (.53), and thus sums of squared loadings cannot be added to obtain a total variance.

Table 4. Correlations between the two factors of transgender identity stigma scale (TGISS) and scales on social support, resilient coping, and depression ($N = 300$).

Scales	Mean (<i>SD</i>)	Cronbach's alpha (α)	Type of scale	Correlation		
				Enacted stigma subscale (5 items)	Felt normative stigma subscale (8 items)	TGISS (13 items)
Multidimensional Scale of Perceived Social Support (12 items)	38.1 (9.2)	.90	5-point Likert scale	-.24**	-.20**	-.26**
Brief Resilient Coping Scale (4 items)	12.7 (2.9)	.88	1 to 3 (1 = Does not describe me at all, 2 = Describes me very well)	-.23**	-.18**	-.24**
Beck Depression Inventory Fast-Screen (6 items)	5.9 (4.3)	.84	0 to 3	.20**	.13*	.20**

Note. Squared correlations are shown in parentheses.

* $p < .05$; ** $p < .01$.

This provided additional evidence for the construct validity of TGISS as it “behaved” in the way that was expected in its association with other relevant theoretical constructs (DeVellis, 2012).

Discussion

We described the factor structure, reliability, and validity of a 13-item transgender identity stigma scale that measured stigma and discrimination faced by trans women in India, the first such scale reported from India. This scale showed the presence of two distinct factors—enacted stigma and felt normative stigma; both these factors/subscales and the overall scale had good internal consistency (reliability) and were found to have acceptable construct validity. This scale can be useful as a research tool and as an evaluation tool to monitor and improve performance of stigma reduction programs at the national and local levels.

Until recently, the Indian government, and international programs and research, often conflated trans women and MSM (Chakrapani, 2014; Poteat, German, & Flynn, 2016). For example, earlier HIV surveillance in India included trans women under the category of MSM and trans women were expected to be covered by interventions designed specifically for MSM (Chakrapani, 2014). Given increasing recognition of the need to distinguish between trans women and MSM in public health, especially in HIV preventive interventions, this transgender identity stigma scale may serve as an instrument to measure stigma and discrimination specific to trans women, and thereby guide programs tailored to their needs and experiences.

In the five-item enacted stigma factor, the clustering of the three items on verbal, physical, and sexual abuse by police is understandable given that a significant proportion of trans women engage in sex work and have a lower economic status (Chakrapani, 2014; Kalra & Shah, 2013; Shaw et al., 2012) and thus are easy targets for police as often no one else would provide support even if police openly assaulted trans women in public places (PUCL-K, 2003). Even though the “blackmailing” item does not specifically mention blackmailing from police, it seems that it could refer to police as they have been reported to blackmail trans women in sex work, or ask for bribes in exchange for not arresting or booking them on false charges (Shaw et al., 2012; Hajra, 2009). The three items related to police violence were not present in the original 11-item Exposure to Transphobia scale of Sugano et al., 2006. The decision to include those three items was based on suggestions from trans community leaders and published evidence of police violence (PUCL-K, 2003; Shaw et al., 2012).

Similarly, the clustering of other items as the second factor, felt normative stigma, is understandable too, given that family members—especially father and male siblings—usually disown their transgender family members and even expel them from their homes (Chakrapani & Dhall, 2011). This is supported by the significant correlation that was found between the family nonacceptance item and the “lost a place to live” item. In addition, cisgender friends often dissociate themselves from their friends who now identify as transgender, possibly to avoid stigma by association (Chakrapani & Dhall, 2011) and being called names. The item “lost a job or career opportunity” (TS11) did not significantly load on either of the two factors, possibly because not many

participants had completed higher education and thus this item was not applicable to them. This item might, however, be relevant for those trans women who come out openly as transgender after completion of their college or higher education or while they are on a job. Thus, this item, which is not included in the final version of TGISS, might be suitable for a scale to be administered among relatively well-educated trans people.

Limitations and further research

Data were from 300 trans women who had diverse indigenous trans identities (such as hijra, jogta/jogappa, and aravani/thirunangai), who were sex workers, and whose mother tongues differed primarily based on the state they were recruited from. This means, coupled with the convenience nature of the sample, the scale may work well primarily among trans women who access services through CBOs. As nearly three-fourths of our sample engaged in sex work, it is possible that their stigma experiences could also have been due to their engagement in sex work, although they were specifically asked whether the stigma experiences they faced were “because you are a transgender.” Items to identify internalized stigma among trans women could be added to this scale to make it more comprehensive and to examine the connections between enacted, perceived, and internalized stigma, as societal negative attitudes and experiences of discrimination may affect self-esteem and exacerbate or contribute to internalized stigma. Also, we could not differentiate whether the discrimination experiences were secondary to their presumed or actual HIV-positive status (about 9% reported being HIV positive). Future research needs to consider this complexity of intersectional stigma (i.e., concurrent stigmas related to being a sex worker and/or being HIV positive) in developing and refining transgender-identity stigma measurement scales (Logie, James, Tharao, & Loutfy, 2011).

Another limitation is that we did not conduct exploratory and confirmatory factor analyses in two separate samples, which is generally recommended (Raykov & Widaman, 1995). However, in applied research, when the sample size is inadequate and when there is an a priori hypothesis of the number of factors, as in our current study, it is acceptable to conduct exploratory and confirmatory analyses in the

same sample (Raykov & Widaman, 1995). Additionally, we demonstrated further evidence for the construct validity of TGISS by testing its association with other relevant scales/constructs (of social support, resilient coping, and depression), and the results were in the anticipated directions. Stigma experiences of trans men are likely to be very different from those of trans women, and hence, a separate stigma scale needs to be developed for trans men. Also, scales to measure stigmatizing attitudes and engagement in discriminatory behaviors among the general public, police, family members, and health care providers need to be developed and tested in India.

Implications

TGISS, as a valid and reliable short scale to measure stigma and discrimination faced by trans women, can be used to monitor the trends in the stigma and discrimination faced by trans women including whether, how frequently, and from whom the discrimination faced by them changes over time. Thus, it can guide introduction of stigma-reduction programs among intended audiences (police, families, and friends of trans people, the general public) and monitor and evaluate the success of such intervention programs. Given the recent judgment of the Supreme Court of India to focus on reducing the stigma and discrimination faced by transgender people (*NALSA v. Union of India*, 2014) and the acceptance of the Transgender Rights Bill by the Indian Parliament (Gandhi & Ramachandran, 2015), having a reliable scale to measure and monitor stigma faced by trans women will be helpful in assessing the effectiveness of stigma-reduction programs.

Conclusion

The transgender identity stigma scale (TGISS), adapted from the Exposure to Transphobia scale for the Indian subcontinent, was found to have adequate psychometric properties, making it the first valid and reliable scale to measure stigma and discrimination faced by trans women in India. However, the scale requires further refinement and validation which can be informed by testing it among a larger representative sample of different subgroups of trans women in different parts of India. For example, adding and testing items to assess internalized stigma related to transgender identity and finding a way to address

intersectional stigma could make this scale more comprehensive. Similarly, this scale may be useful to evaluate stigma faced by trans women in other countries, especially trans women of lower socioeconomic status and those who engage in sex work. However, qualitative formative research would be needed to refine this scale (e.g., use of locally relevant transgender identity terms) to suit the local contexts. Overall, a refined version of TGISS might help to monitor and evaluate the success of programs to reduce stigma and discrimination against trans women in India and internationally.

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