Adapting the minority stress model: Associations between gender non-conformity stigma, HIV-related stigma and depression among men who have sex with men in South India

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Marginalization and stigmatization heighten the vulnerability of sexual minorities to inequitable mental health outcomes. There is a dearth of information regarding stigma and mental health among men who have sex with men (MSM) in India. We adapted Meyer’s minority stress model to explore associations between stigma and depression among MSM in South India. The study objective was to examine the influence of sexual stigma, gender non-conformity stigma (GNS) and HIV-related stigma (HIV-S) on depression among MSM in South India. A cross-sectional survey was administered to MSM in urban (Chennai) (n = 100) and semi-urban (Kumbakonam) (n = 100) locations in Tamil Nadu. The majority of participants reported moderate/severe depression scores. Participants in Chennai reported significantly higher levels of GNS, social support and resilient coping, and lower levels of HIV-S and depression, than participants in Kumbakonam. Hierarchical block regression analyses were conducted to measure associations between independent (GNS, HIV-S), moderator (social support, resilient coping) and dependent (depression) variables. Sexual stigma was not included in regression analyses due to multicollinearity with GNS. The first regression analyses assessed associations between depression and stigma subtypes. In Chennai, perceived GNS was associated with depression; in Kumbakonam enacted/perceived GNS and vicarious HIV-S were associated with depression. In the moderation analyses, overall GNS and HIV-S scores (subtypes combined) accounted for a significant amount of variability in depression in both locations, although HIV-S was only a significant predictor in Kumbakonam. Social support and resilient coping were associated with lower depression but did not moderate the influence of HIV-S or GNS on depression. Differences in stigma, coping, social support and depression between locations highlight the salience of considering geographical context in stigma analyses. Associations between HIV-S and depression among HIV-negative MSM emphasize the significance of symbolic stigma. Findings may inform multi-level stigma reduction and health promotion interventions with MSM in South India.

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The minority stress model has been applied to sexual minority mental health (Meyer, 1995, 2003). In focusing predominately on sexual stigma, however, it may fail to capture the effects of intersecting forms of stigma based on other factors such as gender non-conformity and HIV-positive serostatus. Gender non-conformity, displaying characteristics usually associated with the opposite gender, may underlie and exacerbate sexual stigma but is largely overlooked in sexual stigma analyses (Sandfort, Melendez, & Diaz, 2007; Gordon & Meyer, 2007; Parker, 2001). This is a particularly salient concept in India, where effeminate MSM experience stigma and discrimination based on gender non-conformity (Narrain & Bhan, 2005). In fact, gender non-conformity in part defines the *kathi* identity, as *kothis* may display feminine manners and behaviors, and occasionally wear female clothes (Chakrapani et al., 2007).

HIV-related stigma, the devaluing of people living or associated with HIV, also negatively affects mental health (Logie & Gadalla, 2009; UNAIDS, 2007). In South India, HIV-related stigma was correlated with higher rates of depression among heterosexual people living with HIV (PLHIV) (Steward et al., 2008). HIV-related stigma may be exacerbated for marginalized populations such as MSM (Campbell & Deacon, 2006; Parker & Aggleton, 2003) due to symbolic stigma, the blaming and shaming of a marginalized group (e.g. PLHIV) and people associated with a stigmatized group (e.g. sex workers, MSM) (Herek & Capitano, 1999). Yet most HIV-related stigma research in India has focused on heterosexuals, resulting in underrepresentation of sexual minority experiences (Newman, Chakrapani, Cook, Shumnugam, & Kakinami, 2008). Further attention should be afforded to exploring the impacts of HIV-related stigma on both HIV-negative and HIV-positive sexual minorities.

We propose the adapted minority stress model as a theoretical framework for understanding the influence of stigma on MSM in South India (Fig. 1). Our adapted minority stress model incorporates

![Fig. 1. Hypothesized adapted minority stress model linking sexual stigma, gender non-conformity stigma and HIV-related stigma with depression among men who have sex with men in South India. Variables enclosed in solid lines are included in Meyer's minority stress model, whereas those enclosed in dotted lines are incorporated in our proposed adapted minority stress model for use in South India. The arrows represent a predicted relationship, where stigma (sexual, gender non-conformity, HIV-related) is hypothesized to predict depression. The arrow from the moderators intersects with the arrows between the independent variables and depression to indicate a predicted interaction effect.](image-url)
Meyer’s (2003) analyses of the associations between independent (sexual stigma), moderator (social support, coping) and dependent (depression) variables. The addition of HIV-related stigma to the model was informed by Goffman’s (1963) conceptualization of disease as punishment and Herek and Capitanio’s (1999) discussion of symbolic stigma. Gender non-conformity stigma was added to the model in response to community consultations in India and in line with recommendations from several stigma researchers (e.g., Sandfort, Melendez, & Diaz, 2007; Gordon & Meyer, 2007; Parker, 2001). The adapted minority stress model contributes to understanding the complexity of stigma experienced by diverse MSM in South India and may support evidence-informed interventions to promote mental health.

Methods

This study aimed to test the adapted minority stress model for use with MSM in South India. The study hypotheses included: 1) higher levels of sexual stigma, gender non-conformity stigma, and HIV-related stigma (HIV-S) would predict higher levels of depression; 2) higher levels of social support and resilient coping would predict lower levels of depression; 3) social support and resilient coping would interact with sexual stigma, gender non-conformity stigma and HIV-S to reduce the strength of the relationship between stigma (sexual stigma, gender non-conformity stigma, HIV-S) and depression.

A cross-sectional survey was implemented between October 2009 and January 2010 in Tamil Nadu, India, with the Indian Network of People Living with HIV/AIDS, a national network and a social movement with the objective of promoting health and human rights for PLHIV in India. Research Ethics Board approval was attained from the University of Toronto and the Indian Network.

Data collection was undertaken in collaboration with the Indian Network and three community-based organizations that offer services (e.g. drop-in centre, support groups, HIV prevention) to sexual minorities in two locations in Tamil Nadu, South India, namely Chennai and Kumbakonam. Chennai, the capital of Tamil Nadu, is the fifth most populated city in India with a population of over 4.2 million people (Tamil Nadu Government, 2010). Kumbakonam is a large town in southern Tamil Nadu with a population of approximately 140,000 people (Kumbakonam Municipality, 2005). Two of the community organizations were in Chennai (SWAM, Sahodaran) and one was in Kumbakonam (Lotus Sangam). Separate analyses were conducted to develop a profile of stigma and depression among MSM in urban (Chennai) and semi-urban (Kumbakonam) locations.

A convenience sample of MSM was recruited by peer research assistants. The assistants recruited participants at the organizations, by word of mouth, and visited areas where MSM socialized (e.g. beaches, parks) to promote study participation. The recruitment strategy aimed to include 100 participants in each location. The maximum number of predictors for each outcome in each location is 9 (moderation analyses: 2 independent, 2 moderator, 5 2-way interaction terms); 10 people per predictor is an appropriate sample size to predictor ratio for multivariate analyses (Field, 2009). Two MSM assistants, fluent in Tamil and English, were hired in each location and trained to recruit participants and conduct the survey.

Inclusion criteria for survey participants were adults aged 18 years and over, capable of providing informed consent, who self-identified as being kothi, panthi, double-decker, gay, bisexual, or MSM. A survey was developed to collect information on socio-demographic variables (age, income, education), sexual stigma, gender non-conformity stigma, HIV-S, social support, resilient coping and depression. Pilot testing and attaining extensive feedback throughout the survey development process from key informants at the Indian Network, MSM outreach workers at organizations, and the research assistants was undertaken to enhance the survey’s content validity and ensure accessible survey language. The survey was developed in English, translated into Tamil and back-translated into English to ensure semantic equivalence. Surveys were administered in Tamil by the assistants under the supervision of the Network research coordinator.

Measures

Sexual stigma

The sexual stigma scale used in this study was based on the China MSM Stigma Scale (Neilands et al., 2008), adapted from the Homophobia Scale (Diaz et al., 2001). These scales include dimensions of enacted stigma and perceived stigma and had acceptable reliability in studies with MSM in China (Neilands et al., 2008) and the U.S. (Diaz et al., 2001). Four changes were made to the sexual stigma scale. We retained the police harassment item from the Homophobia Scale used in the U.S. but not in China as experiences of police violence targeting MSM in South India have been reported (e.g. Chakrapani et al., 2007). Second, the phrase ‘because of your homosexuality’ was replaced with ‘because you have sex with men’ to enhance the relevance for the South Indian context. Third, the police harassment item was divided into three questions to ascertain if participants experienced verbal, physical and/or sexual harassment by police. Fourth, blackmail has been reported among MSM in South India (e.g. Chakrapani et al., 2007), therefore the following question was added: Have you been blackmailed for money because you have sex with men? Overall Cronbach’s $a$ was 0.83; enacted subscale 0.86; perceived subscale 0.51.

Gender non-conformity stigma

No scales were found that measured this construct. Therefore the ‘Gender Non-Conformity Stigma Scale’ (GNCSS) was developed by modifying items from the China MSM Stigma Scale (Neilands et al., 2008). The GNCSS used items from the China scale replacing the phrase ‘because of your homosexuality’ with ‘because of your feminine mannerisms and/or behaviour’. The GNCSS includes dimensions of enacted and perceived stigma, including police harassment items to assess verbal, physical and/or sexual harassment. Feedback from key informants and pilot testing indicated high content validity of this scale. Overall Cronbach’s $a$ was 0.84; enacted subscale 0.82; perceived subscale 0.50.

HIV-related stigma

The HIV-related Stigma Assessment Scale (Steward et al., 2008) was used to measure HIV-S. This scale was developed from a study that assessed HIV-S among heterosexual PLHIV in South India (Steward et al., 2008). This instrument demonstrated high reliability and validity and measures four dimensions of HIV-S (enacted, felt-normative, internalized, vicarious). Vicarious stigma, hearing stories about enacted stigma, emerged as a construct in Steward et al.’s (2008) study. Two modifications were implemented to make Steward et al.’s (2008) scale appropriate for HIV-positive and HIV-negative MSM. First, one item was added to the felt-normative subscale to assess symbolic HIV-related stigma: How many people think that men who have sex with men deserve to get HIV? Second, assistants administered the felt-normative and vicarious subscales to all participants, and the enacted and internalized subscales to HIV-positive participants. We only include responses to felt-normative and vicarious HIV-S subscales in analyses as a very small proportion (10.5%; $n = 20$) of the sample self-reported an HIV-positive serostatus and completed the internalized/enacted subscales.
Overall Cronbach’s $\alpha$ was 0.92; vicarious subscale 0.87; felt-normative subscale 0.90.

**Social support**

The Multi-dimensional Scale of Perceived Social Support (MSPSS or social support) (Zimet, Dahlem, Zimet, & Farley, 1998) was used to assess the perceived adequacy of support from family, friends and a significant other. The scale has demonstrated high reliability and validity across numerous studies and while not tested in India it has been used cross-culturally (e.g. Husain et al., 2006). Cronbach’s $\alpha$ was 0.95.

**Resilient coping**

The Brief Resilient Coping Scale (BRCS) was used to measure resilient coping, a process of positive adaptations to high stress (Sinclair & Wallston, 2004). This scale assesses both dispositional (e.g. self-confidence, optimism) and situational (e.g. active problem solving) dimensions of coping and has demonstrated high reliability and validity among adults with chronic illness in the U.S. (Sinclair & Wallston, 2004). Cronbach’s $\alpha$ was 0.91.

**Depression**

The Beck Depression Inventory Fast-Screen (BDI-FS) was used to measure depression. The BDI-FS was developed to provide a quick assessment of affective components of depression (Beck, Guth, Steer, & Ball, 1997). It is based on the same constructs from the original Beck Depression Inventory that has been utilized in India with PLHIV (e.g. Steward et al., 2008). The BDI-FS also includes one item on suicidality that was not included in this survey as the item did not affect the BDI-FS reliability. Cronbach’s $\alpha$ was 0.91.

**Procedures and analysis**

The structured survey was approximately one hour in duration and verbally administered by assistants to participants in a private room at one of the organizations involved in the study. Informed consent was obtained from participants before the survey was administered. No identifying information was collected. Participants received 300 Indian Rupees (IR) (approximately 7 USD) as an incentive. No identifying information was collected. Participants in Chennai were paid for sex in the last 3 months.

**Results**

Socio-demographic characteristics of participants ($n = 200$) are described in Table 1. Half of participants were from Chennai ($n = 100$) and half from Kumbakonam ($n = 100$). The mean participant age was 31.0 years (SD 8.1). The median monthly income was 3500 INR (SE 199) (78 USD). The majority of participants (74.0%; $n = 148$) identified as kothi. Almost two-thirds (65.2%; $n = 129$) of participants reported being paid for sex in the last 3 months.

**Geographical differences**

There were significant differences across variables between participants in Chennai and Kumbakonam. Participants in Chennai experienced significantly higher overall gender non-conformity stigma subscale scores ($t(198) = 2.35$, $p < 0.05$, and perceived stigma scores ($t(198) = 2.84$, $p < 0.01$) than in Kumbakonam. Participants in Chennai reported significantly lower overall HIV-S scores.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Socio-demographic characteristics of participants ($n = 200$).</th>
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<tbody>
<tr>
<td></td>
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<tr>
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<tr>
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</table>

Note. Percentages are calculated from non-missing responses.
t(196) = -3.72, p < 0.001, vicarious HIV-S t(198) = -3.16, p < 0.01, and felt-normative HIV-S t(198) = -2.87, p < 0.01 in comparison with Kumbakonam. There were no significant differences in sexual stigma (overall, enacted, perceived) scores between locations.

Participants in Chennai reported significantly higher levels of resilient coping (t(198) = 5.06, p < 0.001 and social support (t(197) = 4.50, p < 0.01 than in Kumbakonam. There were also significantly lower depression scores (t(198) = -3.02, p < 0.01 in Chennai than in Kumbakonam. In Chennai, almost one-third (30.0%; n = 30) of participants reported severe depression, one-quarter (25.0%; n = 21) of participants reported moderate depression, one-fifth (n = 19; 19.0%) moderate depression, one-tenth mild depression (n = 11; 11.0%), and almost one-quarter (n = 23; 23.0%) no depressive symptoms.

Subtypes of stigma as predictors of depression

Chennai

Regression analyses (Table 2) revealed that enacted non-conformity stigma, perceived gender non-conformity stigma, vicarious HIV-S and felt-normative HIV-S accounted for a significant amount of variability in depression scores, adjusted \( R^2 = 0.06, F(4, 95) = 2.50, p < 0.05 \). Perceived gender non-conformity stigma was a marginally significant predictor. In block 2, social support and resilient coping accounted for a significant proportion of depression variance after controlling for the effects of the stigma variables, adjusted \( R^2 = 0.19, F(2, 93) = 13.50, p < 0.001 \). Social support and resilient coping were both significant predictors.

Kumbakonam

Regression analyses (Table 3) indicated that the four subtypes of stigma accounted for a significant variation in depression scores, adjusted \( R^2 = 0.48, F(4, 94) = 23.53, p < 0.001 \). In particular, enacted gender non-conformity stigma and vicarious HIV-S were significant predictors. In block 2, social support and resilient coping accounted for a significant proportion of depression variance after controlling for the effects of stigma, adjusted \( R^2 = 0.28, F(2, 92) = 57.65, p < 0.001 \). Social support, resilient coping and perceived GNS were significant predictors.

Support and coping as moderators of stigma

Regression analyses for the Chennai data (Table 4) indicated that, after entering the four main predictor variables separately, the interaction terms did not account for variance in depression, adjusted \( R^2 = 0.03, F(5, 88) = 0.93, p = 0.47 \). No interaction terms were significant. Similarly, the interaction terms were not predictive of the Kumbakonam data (see Table 5).

Discussion

Findings support the adapted minority stress model’s inclusion of gender non-conformity stigma and HIV-related stigma as chronic stressors that may be associated with depression among MSM. Gender non-conformity stigma (overall, perceived, and enacted subscales) was associated with higher depression among participants. In Kumbakonam, HIV-S (overall and vicarious) was also associated with higher depression. Associations between gender non-conformity stigma and depression corroborate research in the U.S. that has highlighted associations between perceived gender non-conformity and deleterious mental health outcomes among sexual minorities (Sandfort, Melendez, & Diaz, 2007; Gordon & Meyer, 2007). Prior research has not explored HIV-related stigma as a predictor of depression among HIV-negative MSM, yet over half of all participants, most HIV-negative, reported moderate or severe depression. This finding corroborates previous research on depression among MSM in Chennai (Safren et al., 2009; Thomas et al., 2009) and suggests the depression rate among this sample of MSM is
three-fold higher than the rate of depression in Chennai’s general population (Poongothai, Pradeepa, Ganesan, & Mohan, 2009). Social support has been described as both a mediator (Kertzner, Meyer, Frost, & Stirratt, 2009) and moderator (Spencer & Patrick, 2009) in the relationship between sexual stigma and well-being in the U.S. The literature is also inconclusive as to whether coping styles moderate or mediate the impact of stigma on mental health outcomes among MSM (Sandfort, Bakker, Schellevis, & Vanwesenbeeck, 2009; Yi, Sandfort, & Shidlo, 2010). However, this study in South India provided no evidence to support the moderator hypothesis.

Geographical differences across variables corroborate Meyer’s (1995, 2003) discussion of the salience of context in stigma analyses. Participants in Chennai reported significantly higher social support and resilient coping, and lower rates of depression, than in Kumbakonam. Findings are congruent with North American research that highlights increased mental health concerns and lower social support among sexual minorities in rural vs. urban areas due to rural areas’ more conservative perspectives on sexuality/gender norms (e.g., Drumheller & McQuay, 2010). Social support may have a stronger relationship with reduced sexual/gender non-conformity stigma in contexts such as Kumbakonam that have less access to MSM support services and social networks than in urban areas such as Chennai. Although there were no significant differences in enacted gender non-conformity stigma, there were stronger correlations between enacted gender non-conformity stigma and coping in Kumbakonam than in Chennai. Coping may play a stronger role in managing stigma in semi-urban contexts with limited access to social support/services than in urban centers.
The study design has several limitations. First, the small sample size, non-probability sample and cross-sectional design reduce the generalizability of findings. Scales were scored in a positive direction and may have resulted in a response bias and over-estimation of the parameters for each variable, evidenced in the high R-squared (Austin, Criqui, Barrett-Connor, & Holdbrook, 1981). Multicollinearity between sexual stigma and gender non-conformity stigma suggests a lack of conceptual clarity between these constructs. As both scales were adapted from the China MSM Scale they included common items and this could also account for the high correlation. As our sample largely included kothis, their feminine mannerisms/behaviors could act as a marker for same-sex sexual behavior and render differences in sexual stigma and gender non-conformity stigma difficult to distinguish. For some samples such as this, the scales may be combined. Due to the small proportion of HIV-positive participants, enacted and internalized stigma were omitted, precluding understanding experiences of HIV-positive MSM. We combined gender non-conformity stigma subtypes and HIV-S subtypes into overall scores in moderation analyses due to low sample size and therefore could not assess if support/coping moderated effects of stigma subtypes. Although the sample size was adequate for the multivariate analyses, it may have been too small to detect interaction effects that often have low statistical power (Aiken & West, 1991).

Despite these limitations, our study has several strengths. First, this study contributes to theoretical development by assessing the inclusion of GNS and HIV-S as stressors in the adapted minority stress model. Gender non-conformity stigma has not been explored as a predictor of depression; our findings therefore contribute to understanding the importance of addressing gender non-conformity in stigma research. Second, findings highlight the salience of examining urban-rural differences in depression, social support and coping among MSM in South India. Third, sexual minorities are underrepresented in HIV research in India and the current study revealed higher rates of HIV-related stigma among semi-urban than urban MSM. Furthermore, this analysis moves beyond the approach of most HIV-related stigma research that focuses on HIV-related stigma among PLHIV to highlight the impact of vicarious HIV-related stigma on depression among HIV-negative MSM.

Enhanced understanding of stigma and discrimination targeting sexual minorities can guide the development and evaluation of multi-level interventions to promote health and well-being. Micro-level interventions could address depression and build coping skills (Charnley & Langley, 2007). Meso-level interventions could promote social support, challenge stigma, and build partnerships between organizations serving MSM and mental health agencies (e.g. Hill, 2009). Sexual minorities and PLHIV have no legal protection from discrimination in India. There have been delays tabling the HIV/AIDS Bill (2007) in Parliament to protect PLHIV from discrimination. Implementing a legal framework to protect human rights among sexual minorities and PLHIV is therefore a key priority.

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References


