Health Care: Current Reviews
ISSN: 2375-4273

Suryawanshi et al., Health Care Current Reviews 2016, 4:3
DOI: 10.4172/2375-4273.1000176

Research Article Open Access

Association between Community Collectivization and Mental Depression among Men Who Have Sex with Men in Andhra Pradesh, India

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Abstract

Background: The role of community collectivization with mental health among Men who have Sex with Men (MSM) is understudied in developing countries. This study examines the prevalence of mental depression, and its association with community collectivization among MSM in India.

Data and methods: The data used for this study are from a cross-sectional, Behavioral Tracking Survey conducted between January and February, 2012 among 1176 MSM from Andhra Pradesh, a southern state of India. Mental depression among MSM was assessed using Patient Health Questionnaire-2 scale. Univariate, bivariate and multivariate logistic regression models were used for analysis in this study.

Results: The average age of MSM was 28.2 years (SD: ± 6.2 years) and more than one-third of MSM (35%) in the survey reported to have any mental depression in Andhra Pradesh. MSM, who had a high level of collective identity (not ashamed to be MSM) (33% vs. 41%, AOR: 0.54, 95% CI: 0.34-0.85) and collective agency (member of the community group) (34% vs. 38%, AOR: 0.46, 95% CI: 0.26-0.81) were less likely to be depressed as compared to their counterparts. Those who were members of the community group and had not experienced any violence, were less likely to have any depression (31% vs. 37%, AOR: 0.44, p=0.012).

Conclusion: This study highlights that community led structural interventions are more successful and effective in HIV prevention along with enhancing positive mental health among the key population. This study demands for more community engagement activities in order to deal with mental health problems. This study recommends for further research and to explore the new community led structural approaches with innovative ideas for integrated mental health counselling services among MSM.

Keywords: Community collectivization; Mental health; Depression; MSM, High risk population; India

Introduction

Mental health problems are among the most significant contributors to the global burden of disease and disability with a global prevalence of 13% [1]. According to the WHO report, individual-level attributes and behaviors (low self-esteem, emotional immaturity, medical illness and substance use), environmental factors (poor access to basic services, discrimination, social and gender inequalities) and social and economic circumstances (loneliness, family conflict/neglect, exposure to violence/abuse, low income and poverty) are contributing factors to mental health and wellbeing [2]. In addition, the mental health issues, especially among the marginalized population of female sex workers (FSWs), Men Who have Sex with Men (MSM) and injecting drug users (IDUs) and people living with HIV (PLHIV) is a serious concern for the effective HIV prevention efforts. The studies among FSWs revealed that high prevalence of violence, drug use and discrimination and HIV risk affect the mental health of this population [3-5]. However, the research among people living with HIV (PLHIV) in low and middle income countries signify the prevalence of mental health problems like depression ranging from 11% to 63% and depression is linked to poor adherence to antiretroviral therapy [6-8]. Globally, as compared to the general population, a community based sample of MSM is at increased risk of experiencing mental health problems. The factors contributing to poor mental health of MSM are depressive symptoms, substance use disorders, mental disorders-anxiety, panic, mood, suicidal ideation, discrimination, suicidal symptoms among individuals reporting same sex behavior or identifying as a homosexual, partner violence and childhood sexual abuse. These hazardous psychosocial health problems had often been considered as a source of explaining the distribution and consequences of HIV infection among MSM [9-18].

In India, a range of 10-12% of lifetime prevalence of mental health disorders is observed and of which MSM faces many psychosocial challenges due to their stigmatized sexual orientation and are highly vulnerable to a variety of societal stressors resulting in poor mental health [19]. Despite the extensive HIV prevention efforts, the MSM continues to constitute a high-risk group (HRG) with national HIV prevalence of 4.4% and 10.1% in Andhra Pradesh [20]. Factors such as stigma, discrimination, and violence lead to several co-occurring mental health problems among MSM, which in turn restrict their ability to benefit from risk reduction counselling and moderate the beneficial impact of HIV prevention approaches/efforts [21]. Recent studies have shown the interrelationship between psychosocial factors and elevated HIV risk among MSM [21,22]. In order to address these elevated levels of HIV risk among MSM, a community-led structural intervention (CLSI) plays an architect role to address stigma, violence and harassments of MSM in public spaces and helps to create an enabling environment for them. The CLSI stands on three major pillars: creating an enabling environment, control over access and utilization of services

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Received August 23, 2016; **Accepted** September 19, 2016; **Published** September 25, 2016

Citation: Suryawanshi D, Patel SK, Sharma V, Adhikary R, Bharat S (2016) Association between Community Collectivization and Mental Depression among Men Who Have Sex with Men in Andhra Pradesh, India. Health Care Current Reviews 4: 176. doi: 10.4172/2375-4273.1000176

and community mobilization. Of which, community mobilization plays a prime role in the success of any development initiative [23]. In India, as a part of CLSI, community collectivization processes through peer-led approach was intervened to position the community as a leading actor in order to tackle the structural issues to reduce individual and communities' vulnerability to HIV among them through the Avahan program, its India AIDS initiative [24,25]. Avahan worked with high-risk communities to strengthen their individual and collective agency so that they can adopt and sustain the practice of safer behaviors [26]. As a part of the Avahan intervention among MSM a 'crisis response strategy' was devised to deal with violence, discrimination, abuse and harassment (which leads to co-occurring mental health problems among MSM) from the family members, clients, police and members of the community and to assist the victim and enhance the confidence and sense of safety among the MSM community [25].

Globally, studies among MSM and HIV positive gay couples had demonstrated the impact of informal social support from the sex partner or community member to enhance the mental health status to build the emotional well-being of the individual and support from family and friends to reduce the risky HIV behaviors [27-29]. This signifies the role of social support and involvement of community members in the improvization of individuals' health. In addition, studies on community led structural intervention among marginalized groups in India had demonstrated the positive outcome on reducing not only the HIV/STI risk behaviors [30-32], but also the structural factors [33-39]. Earlier studies had focused mainly on the correlates of depression among key populations [40-42]; however the role of community collectivization on the mental health of key populations is still understudied in India. This creates an opportunity to study the association between community led structural interventions and mental depression among key populations. With this background, the objective of this paper is to study the prevalence of mental depression among MSM. Secondly, to examine the association between community collectivization indicators and mental depression among MSM. Thirdly, to examine the combine association of community collectivization indicator (e.g. collective agency) and violence with mental depression among MSM.

Data and Methods

Study settings, study design and sampling

This study used the data from the Behavioral Tracking Survey (BTS), a cross-sectional, survey conducted between January and February, 2012 among MSM in Andhra Pradesh (the state was divided into two separate states as Andhra Pradesh and Telangana from June 2, 2014). The objective of the survey was to track the key components of Avahan program, its India AIDS initiative, such as community mobilization, safer sexual practices and STI treatment seeking behaviors. The survey tool covered the information on condom use, STI treatment, community mobilization and also mental health using the Patient Health Questionnaire – 2 (PHQ-2) depression scales.

Three districts namely Khammam (n=388), Kurnool (n=396) and Ananthapur (n=392) were covered in this BTS survey from 23 districts where Avahan program was implemented. A sample size of 400 was calculated for each district based on prevalence of consistent condom use (CCU) and expected level of change. A rapid mapping exercise was done at each hot spot (the place where the MSM congregate to solicit clients) through key informants such as local community members, police and social workers to validate a list of hot spots. The hot spots were then divided into two categories – non-public (hotels, lodges, roadside cafes) and public (streets, market areas, cinemas). The sampling frame was developed and probability-based sampling was used to select the respondents. A conventional cluster sampling was used for non-public hot spots and time-location cluster sampling was used for public hot spots. In time-location cluster sampling hot spots were divided into clusters according to time slots at different locations. As a first stage of time-location cluster sampling, the required number of clusters (time-location cluster of hot spots) were randomly selected and at second stage, the respondents within each selected cluster were randomly selected to reach the sample size of 400 per each district. A total sample of 1176 MSM was collected in this survey. As a selection criteria "males aged 18 or older identified to have sex with another male in exchange of cash/kind and cruising from one place to another, soliciting clients, or hanging out at any suitable place, including street corners, highways and pick up points within operational area" were eligible to participate in the survey. All interviews were conducted by the trained field staff and were held in private locations convenient to study participants.

Avahan program

In 2003, Bill and Melinda Gates Foundation began its India AIDS Initiative, known as Avahan, to curb the spread of HIV in India. The first phase of the Avahan program (2003-2007) was perceived as a focused prevention program, offering a standardized package of proven prevention interventions for high-risk groups (including MSM) and bridge populations in the geographic areas most affected by the epidemic. Avahan program was intervening in six high-prevalence states in southern (Andhra Pradesh, Karnataka and Tamil Nadu), Western (Maharashtra) and North-east (Manipur and Nagaland) regions of India. The Avahan package of prevention intervention was based on five program components -peer-led outreach – to provide support and information to improve their ability to negotiate condom use and to encourage for attendance at the STI clinic; program-supported clinical services - to treat STIs other than HIV; commodity distribution; community mobilization and ownership of the program and advocacy for an enabling environment. The second phase of the Avahan program (2007-2012) was designed with a special focus on community mobilization, safe sex behavior, STI treatment-seeking behavior, financial security, and social entitlements among key populations in India.

Ethics statement

The study design and questionnaires were approved by the institutional review boards of Family Health International and the Karnataka Health Promotion Trust. Verbal consent was obtained from all respondents prior to participation in the interview. No names and addresses of participants were recorded on the questionnaires. This survey has tried to take care of all the ethics measures of the study and study participants. This study protects the rights of privacy, confidentiality, and well-being of FSWs. Participants were not provided any compensation for their time in the study, but were referred to local project services run by implementing agency in the survey districts.

Measures

Background characteristics

The survey included the socio-demographic measures such as age, educational attainment (illiterate, primary, secondary and secondary+); marital status (never married, currently married and formerly married); living status (living alone, living with spouse/female partner, living with male partner/friend/colleague and living with family/others); current place of residence (urban, semi-urban and rural); duration of practicing anal sex work with other men (<=5 years, 6-10 years and 10+ years);

and mobile for sex work in past 2 years (non-mobile, less mobile and more mobile).

Dependent variable

The key outcome variable was mental health status and measured based on Patient Health Questionnaire (PHQ-2) depression scale. Respondents were asked two questions-"Over the last 2 weeks, how often have you been bothered by any of the problems-1) Little or no interest or pleasure in doing things 2) feeling down, depressed or hopeless" with responses as not at all, several days, more than half days and nearly every day. A composite index was constructed with scale reliability (Cronbach's alpha) of 0.84. The index score was ranging from 0-6 and divided into two categories as 0 'No depression' for score 0 and for score 1 to 6 as 1 'Any depression'.

Independent variables

The survey also collected the information on enabling environment indicators such as experienced physical or sexual violence in the past 6 months (no, yes). The other independent variables related to individual-level and collective-level community led structural intervention (CLSI) indicators included in the analysis are defined and described as below.

Individual-level CLSI variables

Individual agency: This individual level indicator was measured using the item: Did you ever refuse a client in the last one month, if he insisted on sex without a condom? The responses were yes and no. The response 'yes' indicates the individual control, whereas response 'no' indicates no individual control.

Collective-level CLSI variables

Collective identity: Collective identity was measured using the statements: a) Individuals need not be ashamed to be MSM? b) Other MSMs have thought the same things as me? The responses were strongly agreed, agree, disagree, and strongly disagree. A composite index was constructed with scale reliability (Cronbach's alpha) of 0.60. The index score was further divided into two equal categories (using median) of 'low' with coding value '0'for the score between 0-1 and 'high' with coding value '1' for the score 2 or more.

Collective efficacy: Collective efficacy was measured using the responses to the item: How confident are you that FSWs in your community can work together to achieve the following goals: keep each other safe from harm; increase condom use with clients; speak up for your rights; and improve your lives? The responses were not at all, somewhat, very, and completely confident. A composite index was constructed with scale reliability (Cronbach's alpha) of 0.95. The index score was further divided into two equal categories (using median) as 0 'low' with the score 0-5 and 1 as 'high' with score 6 or more.

Collective action: Collective action was measured using the items: a) The last time you were arrested, did the other MSM help you? b) The last time a client or partner was violent; did the other MSM help you? The responses were dichotomous as no and yes. A composite index was constructed with scale reliability (Cronbach's alpha) of 0.65. The index score was further divided into two equal categories (using median) as 0 'low' with score 0 and 1 as 'high' with score 1 or more.

Collective agency: Collective agency was measured using the item: Are you a member of a community group? (Self-help group or community based organization) with the response as (0=No and 1=Yes).

Statistical analysis

Descriptive statistics were carried out to calculate proportions, means and standard deviations to describe the profile of MSM. Bivariate analysis

Background Characteristics	% or Mean (S.D.)	Background and CLSI Characteristics	%
Socio-demographic characteristics		**Mobility**	
Age (in years)		**Mobile for Sex work in past 2 years**	
Average age (± S.D.)	28.2 (± 6.2)	Non-mobile	47.9
Educational attainment		Less mobile (<5 places)	27.4
Illiterate	28.0	More mobile (5 or more places)	24.7
Primary (1st-4th Std.)	3.0	**Community Led Structural Intervention (CLSI)**	
Secondary (5th-10th Std.)	38.2	**Enabling environment**	
Secondary+	30.8	Experienced physical or sexual violence (past 6 months)	9.4
Marital status			
Never married	60.8	**Individual-level CLSI indicators**	
Currently married	35.1	**Individual agency**	72.1
Formerly married	4.1	**Collective-level CLSI indicators**	
Living status		**Collective Identity:** High (Not ashamed to be MSM)	76.5
Living alone	13.0	**Collective Efficacy:** High	54.0
Living with spouse/female partner	19.3	**Collective Action:** High	48.3
Living with male partner/friend/colleague	4.2	**Collective agency** (Member of community group)	91.5
Living with family/others	63.5	**Mental health status**	
Current place of residence		No depression	65.4
Urban	41.2	Any depression	34.6
Semi-Urban	36.3		
Rural	22.5		
Duration sex work with men			
<=5 years	22.2		
6-10 years	32.5		
10+ years	45.3		100.0 (1176)

Table 1: Socio-demographic profile of MSM in Andhra Pradesh, India.

was performed to assess the association between key outcome variable, i.e. mental health status of the MSM and independent variables using the chi-square test statistics. Multivariate logistic regression models were used to estimate the adjusted odds ratios (AORs) with 95% confidence interval to examine the factors associated with mental health (any depression) among MSM in Andhra Pradesh. Multiple logistic regression models were used to assess the relationship between community collectivization indicators with mental health by controlling the socio-demographic characteristics such as age, current marital status, living status, current place of residence, duration of practicing anal sex work with other men and mobility for sex work. The p-value was set at 5% level of significance and all the analyses were conducted using STATA 11.2.

Results

Profile and CLSI characteristics of sampled population

The average age of the MSM was 28.2 years (± 6.2 years) with the highest proportion of attaining the secondary school (38%). More than three-fifths (61%) of MSM were never married. Sixty four percent of MSM were living with family or others, and more than two-fifths (41%) were currently residing in urban places. More than forty-five percent of MSM reported to be engaged in anal sex for more than 10 years of duration and almost half of the MSM (48%) were non-mobile (Table 1).

As a part of CLSI strategy, enabling environment indicators described that more than half (57%) of MSM reported to be under debt at the time of the survey and almost one-tenth of MSM (9%) had experienced either physical or sexual violence in the past 6 months. Among the MSM, about 72% have individual agency (e.g. 'high' level of community involvement). At collective-level, more than half of the MSM were at a high level of community involvement for CLSI indicators such as collective identity (77%), collective efficacy (54%), collective action (48%) and collective agency (92%). More than one-third of MSM reported of having any depression (35%) in Andhra Pradesh (Tables 2 and 3).

Association of individual and collective-level CLSI characteristics with mental health status

The association of individual-level and collective level community-led structural intervention characteristics with mental health status were assessed in this study. The results show that the experience of physical and sexual violence in past 6 months (66% vs. 31%, AOR: 2.89, p=0.005) were positively associated with mental depression. However,

Background Characteristics	Mental Health Status		p-value (Chi-square test)
	No Depression (n=769)	**Any Depression** (n=407)	
Socio-demographic characteristics			
Age (in years)			0.0028
Young MSM (18-25 years)	75.8	24.2	
Middle-aged MSM (26-30 years)	62.6	37.4	
Old MSM (30+ years)	53.8	46.2	
Average age (± S.D.)	27.4 (± 5.9)	29.9 (± 6.6)	
Educational attainment			0.0407
Illiterate	71.8	28.2	
Primary (1st-4th Std.)	47.2	52.8	
Secondary (5th-10th Std.)	57.3	42.7	
Secondary+	71.5	28.5	
Marital status			p<0.0001
Never married	73.7	26.3	
Currently married	54.6	45.4	
Formerly married	36.0	64.0	
Living status			0.0581
Living alone	57.3	42.7	
Living with spouse/female partner	58.6	41.4	
Living with male partner/friend/colleague	56.9	43.1	
Living with family/others	69.7	30.3	
Current place of residence			0.0177
Urban	70.2	29.8	
Semi-Urban	73.2	26.8	
Rural	44.1	55.9	
Duration of sex work with men			0.0002
<=5 years	75.9	24.1	
6-10 years	72.1	27.9	
10+ years	55.6	44.4	
Mobile for sex work in past 2 years			0.0002
Non-mobile	83.3	16.7	
Less mobile (<5 places)	55.0	45	
More mobile (5 or more places)	42.2	57.8	

Note: p-values are calculated through chi-square test

Table 2: Mental health statuses (depression) as reported by MSM by their background characteristics in Andhra Pradesh, India, 2012.

Individual and collective level CLSI indicators	Having any depression (%)	AORs (95% CI) (p-value)
Enabling environment		
Experienced physical or sexual violence in past 6 months		
No	31.3	Referent (1.00)
Yes	66.0	**2.89 (1.45-5.75) (p=0.005)**
Individual-level CLSI indicators		
Individual agency		
No	39.7	Referent (1.00)
Yes	32.6	0.84 (0.55-1.26)
Collective-level indicators		
Collective Identity		
Low (Ashamed to be MSM)	41.1	Referent (1.00)
High (Not ashamed to be MSM)	32.6	**0.54 (0.34-0.85) (p=0.01)**
Collective Efficacy		
Low	26.4	Referent (1.00)
High	41.6	1.35 (0.82-2.52)
Collective Action		
Low	30.6	Referent (1.00)
High	38.9	1.36 (0.77-2.42)
Collective agency (Member of community group)		
No	38.2	Referent (1.00)
Yes	34.3	**0.46 (0.26-0.81) (p=0.01)**
Collective agency and Violence		
No member of community group and No violence	36.9	Referent (1.00)
No member of community group and Violence	50.2	1.52 (0.33-6.94)
Member of community group and No violence	30.8	**0.44 (0.24-0.81) (p=0.012)**
Member of community group and Violence	67.4	1.34 (0.76-2.36)

Note: AORs: Adjusted Odds Ratios; AORs are adjusted for age, educational attainment, marital status, living status, place of residence, duration in sex work and mobility (i.e., mobile for sex work in past 2 years); CI: Confidence Interval; Individual agency is measured as when MSM refused client when insisted on sex without a condom

Table 3: Association between individual agency, community collectivization indicators and mental depression among MSM in Andhra Pradesh, 2012.

at collective-level, collective identity (33% vs. 41%, AOR: 0.54, p=0.01) and collective agency (34% vs. 38%, AOR: 0.46, p=0.01) were inversely associated with mental depression. In addition, the composite variable of collective agency and experience of violence (31% vs. 37%, AOR: 0.44, p=0.012) was also significantly associated with mental health status, i.e., those were members of the community group and had not experienced any violence, were less likely to have any depression.

Discussion

This study among MSM in Andhra Pradesh demonstrates the evidence of association between individual-level and collective-level collectivization of community on mental health in the context of community led structural approaches. The findings from the study show that the community collectivization factors show a negative relationship with the mental depression of MSM. In addition, the study shows an inverse relationship between individual agency and mental depression, however it is not statistically significant. The experience of physical or sexual violence among MSM were positively associated with poor mental health which plays a 'dual' role at an individual level as well as the dimension of enabling environment among the community. Previous studies show the experience of physical or sexual violence among same-sex relationship is higher than opposite-sex relationship [43,44]. A systematic review and meta-analysis among MSM, by Buller et al. illustrate a strong association between partner violence and depressive symptoms which in turn leads to poor mental health. The study further concludes that men who are depressed and are part of violent relationship finds it difficult to seek help or to adhere the treatment [15]. The previous studies in different types of populations suggest that physical or sexual violence are associated with poor mental health at an individual level [45-47].

This study contends the poor enabling environment among MSM. In addition, not having an individual agency (refused the client when insisted on sex without a condom) also shows the poor mental health among MSM. Though, the statistical significance is not established in this relationship, it throws the light on the poor condom negotiation power among the MSM. The reason for such low condom negotiation power is the intimate partner violence which affects the condom negotiating skills among them [48] and leads to poor mental health due to violence. This implies the importance of individual level structural indicators in enhancement of mental health among the most-at-risk populations. This is supported by the Coates et al. in their review of individual behavior change strategies and demonstrated that when HIV prevention strategies address the broader structural factors that constrain individual behavior (such as power, policy, and poverty) the propensity of success in reducing risk behavior substantially improved [49]. Thus, a positive enabling environment among the MSM community is one of the most important structural factors to keep themselves mentally healthy to practice safer sexual behaviors. Since the last few decades, both individual-level structural interventions and community-led structural interventions are effective in improving the outcomes of HIV interventions by altering the social, economic, political or environmental factors. These altering factors further accentuate the HIV risk and vulnerability. In this context, community collectivization is central and key to success of HIV prevention program worldwide. It is also evident from the previous studies that structural approaches and community mobilization are an integral part of successful interventions in reducing the HIV risk vulnerability among key populations (e.g. female sex workers, men having sex with men and injecting drug users) [30,33,36,37,50-53]. When mental health in the context of community collectivization approach among MSM is discussed, there is negligible evidence in this sphere of mental health. This study demonstrated a positive association of community collectivization with enhanced mental health status (i.e., less mental depression) among MSM. In other words, being part of a community group (i.e., collective agency) has a positive association with good mental health among MSM. Similarly, the findings of the study also show that high degree of collective identity is negatively associated with mental depression among MSM. These crucial findings of this study provide an evidence of the importance of community ownership and community collectivization. Since community collectivization is an integral component of any public health intervention and has shown a positive effect on a variety of sexual, reproductive and child health problems. Moreover, this collectivization is characterized by a strong sense of collective identity and collective agency; which would further help to MSM community to work together to achieve their goals and stand up for each other. This study is unique in establishing the relationship between community collectivization and mental depression among MSM in India and recommends for further research on this. Further, the composite measure of collective agency and violence is also significantly associated with mental depression among MSM. It

concludes that MSM, those were members of community group and not experienced any physical or sexual violence were less likely to have mental depression; which provides an evidence of collective agency as a mediator for good mental health among MSM.

Although the findings of this study have important programmatic implications, they must be interpreted with some certain limitations. First, the design of the study is cross-sectional and hence causality cannot be established in this study. Secondly, the key independent variables were based on the self-reported answers which are exposed to social desirability and recall bias. Thirdly, the creation of the mental health status variable is based on 2-items from PHQ scale; hence need careful consideration while interpreting the results. Lastly, the study settings for this analysis are Andhra Pradesh and not the entire community of MSM in India and there is a state to state variation due to socio-demographics, regional, and cultural difference among MSM. Hence, results must be interpreted carefully and cannot be generalized to the entire MSM population in India. Despite these limitations, the present study is the first to examine the role of community-led structural intervention or participation in mental health. The present study shows that individual-level variables related to enabling environment and community collectivization indicators significantly associated with mental depression among MSM. It highlights that community-led structural interventions are more successful and effective in changing the attitudes, behavior and knowledge of the key population in terms of HIV-risk reduction along with creating a positive environment for mental health among MSM. This study demands for more community engagement activities and community participation in order to deal with mental health problems among the key population. This study recommends for further research and to explore the new community led structural approaches with innovative ideas for integrated mental health counselling services among MSM.

Acknowledgement

This paper was written as part of the Knowledge Network project of the Population Council, which is a grantee of the Bill and Melinda Gates Foundation through Avahan, its India AIDS Initiative. The views expressed here are those of the authors and do not necessarily reflect the official policy or position of the Bill and Melinda Gates Foundation and Avahan.

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