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INFORMAL SOCIAL SUPPORT AND DEPRESSION AMONG AFRICAN AMERICAN MEN WHO HAVE SEX WITH MEN

Cui Yang,

Johns-Hopkins School of Public Health

Carl Latkin,

Johns-Hopkins School of Public Health

Karin Tobin,

Johns-Hopkins School of Public Health

Jocelyn Patterson, and

Centers for Disease Control and Prevention – Division of HIV/AIDS Prevention

Pilgrim Spikes

Centers for Disease Control and Prevention – Division of HIV/AIDS Prevention

Abstract

Men who have sex with men (MSM) experience greater mental health problems as compared with heterosexual populations. Informal social support plays a critical role in emotional well-being. The primary goal of this article is to examine the relationship between depressive symptoms and received social support from family, friends, and sex partners within the social network from a sample of 188 African American MSM in Baltimore, Maryland. We found that receiving emotional support from a family member or a sex partner was associated with reduced odds of having depressive symptoms. Receiving financial support from a family member or a friend was associated with increased odds of having depressive symptoms. The results suggest the importance of emotional support provided by family and sex partner in mental health and the potential value of training African American MSM in skills to enhance the quality of the relationships.

INTRODUCTION

Studies have shown that men who have sex with men (MSM) experience greater mental health problems such as depression as compared with heterosexual populations (Stall et al., 2003). In a review of the Centers for Epidemiological Studies Depression (CES-D) scale mean scores from previously published studies of depressive distress, Cochran and Mays (1994) found that African American MSM had higher mean CES-D scores than heterosexual African Americans or White Americans. In addition, African American MSM have exceedingly high rates of HIV incidence and prevalence as compared with other racial/ethnic groups (Centers for Disease Control, 2010). Research has suggested interconnections between psychosocial factors, mental health, and HIV risk among MSM, and the high prevalence of depression among African American MSM may have contributed to the health disparity in HIV rates (Reisner et al., 2009; Safren, Reisner, Herrick, Mimiaga, & Stall, 2010). Compounded stressors associated with racism and stigma and limited resources

available to African American MSM may lead to greater reliance on social support from network members as compared with those who are less marginalized (Hobfoll, 2001).

There are few quantitative data delineating the composition of the social support networks of African American MSM and its relationship with mental health. Prior studies suggest that the sexual network of African American MSM who had female sexual partners (MSMW) differed from those who had sex with men only. MSMW reported having denser sexual networks and more concurrent and exchange partners, using condoms with a greater number of sexual partners, and having interaction with sexual partners (i.e., larger number of sexual partners seen) at least once a week (Latkin et al., 2011). Informal social support, defined as nonprofessional individuals, such as family, friends, or sex partners providing assistance, plays a critical role in the social support and physical and emotional well-being of many populations (Knowlton, 2003). Previous studies found that MSM often turned to friends and partners rather than family of origin for support (Hays, Chauncey, & Tobey, 1990; Schwarzer, Dunkelschetter, & Kemeny, 1994; McDowell & Serovich, 2007). African Americans compared with other U.S. racial groups, provide a disproportionately high level of informal support (Turner, Catania, & Gagnon, 1994; Burton et al., 1995). However, there is little information about types of social support provided by friends, family members, and sexual partners to African American MSM.

Higher levels of social support are consistently found to be associated with lower levels of depression (House, Landis, & Umberson, 1988; Rabkin, Ferrando, Jacobsberg, & Fishman, 1997). Social support is a metaconstruct. Two distinct concepts of social support are perceived support and received support. Perceived social support measures recipients' subjective perceptions concerning the availability of support. Measures of received social support are designed to assess the explicit supportive behaviors that are provided to recipients by their social networks (Sarason, Sarason, & Pierce, 1990).

Research suggests that perceived and received support have differential effects on well-being (Schwarzer et al., 1994). Previous studies indicate that perceived availability of emotional support is consistently associated with psychological well-being (Schwarzer & Leppin, 1991). Perceived financial or material social support was also found to affect psychological well-being among low income inner-city women, even after accounting for their own financial and material resources (Hobfoll, Johnson, Ennis, & Jackson, 2003). Compared with perceived social support, received social support is expected to be more important to depressive symptom among individuals who are in high need of support (Holahan, Moos, Holahan, & Cronkite, 1999).

In a social network analysis of support and depression among African American current and former injection drug users, having depressive symptoms 1 year later was more consistently predicted by received financial support from network members at the baseline rather than perceived availability of support (Knowlton & Latkin, 2007). Injection drug users may have high need for financial support and hence a high reliance on their network members. However, received support has also been found to exacerbate stress effects especially when well-intentioned efforts may fail to help or may entail a cost to self-esteem (Coyne et al., 1988; Fisher, 1982). It has been suggested that features such as characteristics of support providers and the provider-receiver relationship and types of social support need to be considered when examining the effects of received support on health (Schwarzer et al., 1994).

Addressing co-occurring psychosocial risk factors and identifying and bolstering strengths in social networks, such as social support, may improve the effect and sustainability of current HIV and mental health interventions for MSM (Herrick et al., 2011). Identifying

actual support transaction associated with depression is essential to better inform potentially effective and sustainable supportive mental health interventions. The primary goal of this article is to describe the function of family, friends, and sex partners within the social network and to examine the relationship between depressive symptoms and received social support from these network members in a sample of African American MSM in Baltimore, Maryland.

METHODS

The Unity in Diversity (UND) study was a culturally tailored randomized control trial of a behavioral HIV prevention intervention for at-risk African American MSM (2006–2009) in Baltimore, Maryland. Two types of participants were recruited: primary and secondary participants. “Primary” participants were directly recruited by the study through street and venue-based outreach by trained field recruiters, word-of-mouth, advertisements in the local papers, and active Internet-based recruitment on websites and chat rooms for African American MSM. Primary participant inclusion criteria were as follows: (a) 18 years old or older, (b) identify as a male, (c) self-report Black or African American race/ethnicity, (d) report having ≥ 2 sex partners in the prior 3 months (at least one of whom must be a male), (e) report unprotected anal sex with a male in prior 3 months, (f) willingness to take HIV test if negative or unknown status or provide documentation of HIV-positive status, and (g) willingness to identify social network members and recruit them into the study.

Potential primary participants were screened in a community-based research clinic setting using audio computer-assisted self-interview (ACASI) methods. Eligible primary participants, who provided written informed consent, were enrolled into the study and completed a baseline survey using ACASI. A social network inventory (as described in the Measure section below) was administered face-to-face by a trained interviewer. At the end of the baseline visit, primary participants were asked to invite their social network members into the study. Inclusion criteria for these secondary participants included (a) being at least 18 years old and (b) verification that they were invited to participate by the primary participants. Secondary participants who were enrolled into the study completed the same baseline procedures as the primary participants.

There were 959 men screened for the study, and 46% were ineligible. The majority of ineligible were those men who answered “no” to the question “UND is a research study to improve the sexual health of African American men who have sex with men. Does this apply to you?” The current analysis included a total 188 primary participants who were African American MSM and had informal support from network members.

Participants received \$40 for the completion of the baseline assessments. All protocols were approved by the Institutional Review Boards at the Johns Hopkins Bloomberg School of Public Health and Centers for Disease Control and Prevention.

Measures

Outcome—Depressive symptoms were assessed by CES-D Scale, a 20-item, 4-point response scale, using 23 as cutoff point (Cronbach’s alpha = 0.92; Radloff, 1977). Dichotomizing CES-D has been a clinically meaningful procedure, and a score of 16 or higher is conventionally used to indicate the presence of a clinically relevant depressive symptoms. Although this cutoff has been used in general population sample studies, other studies suggest using a higher cutoff to reduce the number of false-positive classifications of depression, particularly within subpopulations known to have higher baseline rates of depression (Perdue, Hagan, Thiede, & Valleroy, 2003).

Social network inventory—This measure was a modified version of the support and drug network inventory (Latkin, Mandell, & Vlahov, 1996). The inventory contained name generator questions, which elicited different domains of received social support during the last 3 months. The forms of received support elicited were received emotional support, instrumental assistance, financial support, social participation, and emergency support (Barrera & Ainlay, 1983). *Emotional support* was assessed by asking, “Who did you talk to about things that were personal and private or who did you get advice from?” *Instrumental assistance* refers to receive behavioral or material assistance with practical tasks or problems (Lin & Westcott, 1991), and it was evaluated by asking, “Who pitched in to help you do things that you needed some help with such as running errands, giving you a ride, etc.?” *Financial support* was queried: “Who loaned or gave you some money?” *Social participation* was evaluated by asking, “Who did you get together to hang out with or socialize?” *Emergency support* was ascertained by asking, “If you needed a place to stay can you think of anyone who would let you stay at their place?”

Once the network was elicited, participants were asked about a variety of characteristics of the listed network members, such as their race, age, gender, drug use during the past 3 months, and role relationship. *Kin relationship* was defined as any family member, such as parent, child, or sibling. *Nonkin relationships* included friends, acquaintances, godparents, and neighbors. *Sexual partners* included spouse, boy/girl friend/fiance/partner, ‘child’s parent, sex partner, and ex-partner. Categorical variables were created to specify social support provided by each social network relationship. For example, a 4-level categorical variable for emotional support was “no emotional support,” “emotional support by the network member who was not kin,” “emotional support by the network member who was kin,” and “emotional support by the network member who was sex partner.”

Other characteristics of primary participants—Primary participants’ age, education, current employment status, income, HIV status and drug use during the past 3 months were assessed. All participants who self-reported negative or unknown serostatus provided an oral specimen to be tested using Oraquick Advance rapid HIV antibody testing kits. Preliminary-positive results were confirmed using Western blot assay. Participants who self-reported HIV-positive serostatus, were asked to provide written documentation, such as medications or clinical test results for validation or provided an oral specimen for HIV antibody testing. HIV-seropositive was defined if participants tested positive by confirmatory tests or provided documentation of HIV-positive testing results.

Data Analysis

The analyses for this study were restricted to the primary participants self-identified as African American MSM and who had informal social support from networks who were kin, nonkin, or sex partners (N = 188). The outcome of interest was CES-D score measuring depressive symptoms. Logistic regression models with generalized estimating equations (GEE; Liang, Zeger, & Qaqish, 1992) using network member as the unit of analysis were conducted to assess the associations between characteristics of primary participants and their social network members, received social support, and the outcomes of depression. GEE were used to account for the fact that individuals had multiple network partners that contributed to the analysis. For example, if the participant listed 10 network members, each of these network members was treated as an observation within a cluster of 10.

Robust standard errors were used for estimation of the 95% confidence intervals. Variables that were associated with outcomes in the bivariate models ($p < 0.10$) were entered into a multivariate model. The odds ratio for linear combinations of coefficients of received social support provided by each relationship was calculated. Variance inflation factor (VIF) was

checked to determine the potential multicollinearity among the independent variables (Nachtsheim, 2004). The VIF among the independent variables in the multivariate logistic regression model ranged from 1.01 to 1.83, indicating there was no multicollinearity among the independent variables. All analyses were performed using Stata Version 10.0 (College Station, TX).

RESULTS

The 188 primary participants reported a total of 1,558 social network members who provided informal social support, and nominated an average of nine social network members. Table 1 presents sample characteristics of 188 primary participants and their 1,558 social networks. The average age of the primary participants was 38 (standard deviation [SD] = 10), with a range from 18 to 59. Less than half (42%) had the highest education of college, associates, or technical degree, 28% worked full-time or part-time, and less than half (46%) had an income of more than \$10,000. Almost half (49%) were tested and confirmed HIV-positive or provided documentation of positive test results, and 51% reported having used heroin, cocaine, crack or methamphetamines, or injected any drugs during the past 3 months. The mean score of CES-D was 14 with a range from 0 to 48, and the prevalence of depressive symptoms (CES-D score >23) in this sample was 19%.

The mean age of the network members was 38 (SD = 14), and the majority was African American (90%). Almost two-thirds networks (63%) were male, only 27% were currently unemployed. Among the social network members, the prevalence of drug use in the past 3 months was 14% and the HIV prevalence, as reported by the primary participant, was 15%.

Over half of network members (56%) were not kin (predominantly friends), 27% were kin, and 17% were sex partners. Social network members provided various types of social support. Over one fifth (22%) of network members provided emotional support. Over half of network members who provided emotional support (53%) were not kin, 32% were kin, and 15% were sex partners. About 16% of networks (42% of which were not kin, 39% were kin and 19% were sex partners) provided instrumental assistance. About 15% of network members provided financial support; 40% of network members who provided financial support were not kin, 42% were kin, and 18% were sex partners. Primary participants reported social participation with almost one third of the network members (31%), with 68% being not kin, 17% as kin, and 16% being sex partners. Finally, one quarter of network members (25%) provided emergency support, such as letting primary participants stay at their place, 45% of those network members were not kin, 43% were kin, and 12% were sex partners.

Table 2 presents the results of GEE logistic regression with the outcome of primary participants' depressive symptoms. In the adjusted analysis, primary participants' depressive symptoms were associated with participants being HIV-positive (Adjusted Odds Ratio [AOR]: 2.35, 95% confidence interval [CI]: 1.03, 5.39). Having network members who provided emotional support was negatively associated with primary participants' depressive symptoms (AOR: 0.74, 95% CI: 0.62, 0.87). However, receiving financial support from network members increased the odds of primary participants having high levels of depressive symptoms (AOR: 1.34, 95% CI: 1.13, 1.60). The magnitude of association of received social support with primary participants' depressive symptoms varied by the relationship of the network members. Network members who were kin (AOR: 0.28, 95% CI: 0.11, 0.68) or sex partners (AOR: 0.27, 95% CI: 0.10, 0.79) providing emotional support (i.e., talked to or gave advice) significantly reduced the odds of primary participants having depressive symptoms. However, having nonkin network members who provided emotional support was not associated with participants' depressive symptoms. Financial support

provided by networks who were not kin (AOR: 1.77, 95% CI: 1.01, 3.11) or who were kin (AOR: 1.98, 95% CI: 1.00, 3.92) significantly increased the odds of primary participants having depressive symptoms, while financial support provided by sex partners was not associated with primary participants having depressive symptoms.

DISCUSSION

The study findings suggest that depressive symptoms of this sample of African American MSM were negatively associated with received informal social support (emotional) but not financial support. Reporting a network member who was kin or a sex partner and provided emotional support was associated with reduced odds of having depressive symptoms, as compared with receiving no emotional support. Receiving financial support from both nonkin (primarily friends) and kin (i.e., family) was associated with a one-fold odds increase of having depressive symptoms, as compared with receiving no financial support. In the current study, both types of social support (i.e., emotional and financial support) and support from different sources (i.e., kin and nonkin) emerged as a critical dimension in the association between received social support and depressive symptom.

Similar to previous studies, this sample of MSM relied heavily on support from nonkin, predominantly friends (Hays et al., 1990; Schwarzer et al., 1994; McDowell et al., 2007). It is interesting to note that families appeared to play a much more important role in terms of providing social support in this sample of participants, as compared with findings of the study among predominately White MSM participants in Los Angeles, who received relatively little support from family (Schwarzer et al., 1994). Previous ethnographic research indicates that in urban African American communities, as compared with support from someone who was not a family member, kinship support may be more effective because of the close geographic proximity of family members (Taylor, 1986).

Different from a previous study among African American current and former injection drug users (Knowlton et al., 2007), receiving financial support was positively associated with depressive symptom in this sample of African American MSM. Although the level of statistical significance differed by relationship type, there was a consistent magnitude and direction of association between material support and depression. Only 28% of the primary participants worked full-time or part-time, and less than half of them had income over \$10,000, indicating financial needs. Receiving financial support while being less likely to reciprocate support may have potentially led to the sense of financial dependence and caused stress.

According to the theory of reciprocity, only receiving support in a relationship elicits feelings of dependence or indebtedness, which leads to stress reactions that adversely affect health (Chandola, Marmot, & Siegrist, 2007). Findings from British longitudinal studies indicate that lack of reciprocity in relationships was significantly predictive of risks of an array of mental and physical chronic conditions (Chandola et al., 2007; Siegrist, 2005; Vaananen, Buunk, Kivimaki, Pentti, & Vahtera, 2005). The association between receiving emotional support and depressive symptoms was statistically significant for both kin and sexual partners but not friends. The support from kin may indicate less MSM discrimination and greater acceptance by family members. Emotional support from sexual partners may indicate the quality of the relationship.

The study was limited by self-report and sampling biases, such as high levels of unemployment, as well as a cross-sectional study design. As this study did not use random sampling, the findings are not generalizable because of the recruitment strategy. Given the cross-sectional study design, we do not know if participants' social networks were altered as

a result of participants' depressive symptoms or depressive symptoms were one of the consequences of receiving social support. Depressive symptom may have strengthened or deteriorated some social support (House, 1981). This is a sample with limited resources that may need to rely on their network members for material support. This reliance may be linked to higher levels of depression. It is also possible that the direction of these associations is reversed with less depressed individuals being more social and talking to network members about personal issues.

There has been an increasing awareness that future interventions should capitalize on the skills, resources, and strengths existing among MSM and within MSM communities (Herrick et al., 2011). The results from the current study suggest the importance of emotional support provided by family and sex partner relationships in mental health and the potential value of training African American MSM in skills to enhance the quality of the relationships by eliciting more social support. Given the large size of kinship networks and proximity of kin for many urban African American families, establishing kinship support as an important source of emotional support may provide a launching point for interventions designed to alleviate stress among poor African American MSM. Future HIV prevention and care programs should integrate psychosocial training to help individuals delineate both their social networks and support needs and how to make strategic decisions about mobilizing their informal social support. In addition to providing resources addressing the economic needs of the population, promoting mutual support in individuals' relationships may not only improve men's mental health but also have implications for physical health and mitigate the social impact of HIV/AIDS among vulnerable communities.

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Table 1

Characteristics of Primary Participants and Their Network Members in the Unity in Diversity Study: Baltimore, Maryland 2006–2009

Primary participant (N = 188)	N (%)
Age: mean (SD)	38 (10)
Education: at least college, associates or technical degree	79 (42)
Currently working full-time/part-time	52 (28)
Last year income more than \$10,000	87 (46)
HIV-positive	93 (49)
Having used heroin/cocaine/crack/meth methamphetamines or injected drugs ^a	96 (51)
CES-D score: mean (range)	14 (0–48)
CES-D >23	35 (19)
Average number of NWs named: mean (SD)	9 (4)
Network members (N = 1588)	
Age: mean (SD)	38 (14)
Race	
African American	1410 (90)
White	92 (6)
Hispanic	26 (2)
Other	30 (2)
Gender	
Male	984 (63)
Female	536 (34)
Transgender	38 (2)
HIV-positive	231 (15)
Currently unemployed ^b	426 (27)
Having used heroin/cocaine/crack/meth methamphetamines ^a	221 (14)
Relationship:	
Nonkin	875 (56)
Kin	416 (27)
Partners	267 (17)
Emotional support from	
nonkin	341 (22)
kin	182 (53)
partners	108 (32)
Instrumental assistance from	
nonkin	51 (15)
kin	243 (16)
partners	103 (42)
Financial support from	
nonkin	94 (39)
partners	46 (19)
Financial support from	
nonkin	240 (15)
partners	97 (40)

Primary participant (N = 188)	N (%)
kin	101 (42)
partners	42 (18)
Social participation from	477 (31)
nonkin	323 (68)
kin	80 (17)
partners	74 (16)
Emergency support from	382 (25)
nonkin	171 (45)
kin	166 (43)
partners	45 (12)

Note. SD = standard deviation; CES-D = Center for Epidemiologic Studies Depression Scale; NW = Network.

^aDuring the past 3 months.

^b1 missing.

Table 2

Results of GEE Logistic Regression Model of Depressive Symptoms Using Network Member as Unit of Analysis (N = 1,558) (Unity in Diversity: Baltimore, Maryland 2006 – 2009)

	OR (95% CI)	AOR (95% CI)
Index characteristics		
Age	0.99 (0.96, 1.03)	
Education: at least college, associates or technical degree	0.88 (0.38, 2.04)	
Currently working full-time/part-time	1.20 (0.45, 3.22)	
Last year income more than \$10,000	1.27 (0.55, 2.93)	
HIV-positive	2.39 (1.04, 5.51)*	2.35 (1.03, 5.39)*
Having used drugs during the past 3 months	1.64 (0.70, 3.83)	
Network characteristics		
Age		
African American	0.40 (0.14, 1.10)+	0.42 (0.16, 1.13)+
Male	0.99 (0.75, 1.31)	
HIV positive	0.77 (0.40, 1.47)	
Having used drugs during the past 3 months	1.49 (0.90, 2.47)	
Relationship:		
Nonkin	Reference	
Kin	0.82 (0.55, 1.22)	
Partners	0.65 (0.31, 1.36)	
Ref. no emotional support		
Emotional support by nonkin	0.95 (0.63, 1.43)	0.90 (0.54, 1.48)
Emotional support by kin	0.33 (0.15, 0.71)**	0.28 (0.11, 0.68)**
Emotional support by partner	0.31 (0.11, 0.83)*	0.27 (0.10, 0.79)*
Overall effect by providing emotional support^a	0.63 (0.44, 0.90)*	0.74 (0.62, 0.87)***
Ref. no instrumental assistance		
Instrumental assistance by nonkin	1.19 (0.67, 2.11)	
Instrumental assistance by kin	0.87 (0.45, 1.68)	
Instrumental assistance by partner	0.83 (0.38, 1.77)	
Overall effect by providing instrumental assistance^a	0.99 (0.69, 1.42)	
Ref. no financial support		
Financial support by nonkin	1.77 (1.05, 2.98)*	1.77 (1.01, 3.11)*
Financial support by kin	1.09 (0.67, 1.76)	1.98 (1.00, 3.92)*
Financial support by partner	1.30 (0.55, 3.06)	2.17 (0.76, 6.20)
Overall effect by providing financial support^a	1.38 (1.05, 1.82)*	1.34 (1.13, 1.60)**
Ref. no social participation		
Social participation with nonkin	0.77 (0.49, 1.20)	
Social participation with kin	0.91 (0.39, 2.16)	
Social participation with partner	0.71 (0.34, 1.48)	
Overall effect by providing social participation^a	0.78 (0.55, 1.11)	

	OR (95% CI)	AOR (95% CI)
Ref. no emergency support		
Emergency support by nonkin	0.87 (0.57, 1.34)	0.80 (0.48, 1.33)
Emergency support by kin	0.68 (0.40, 1.14)	0.81 (0.40, 1.65)
Emergency support by partner	0.36 (0.14, 0.92)*	0.41 (0.13, 1.24)
Overall effect by providing emergency support^a	0.72 (0.50, 1.03)⁺	0.86 (0.72, 1.04)

Note. GEE = generalized estimating equations; OR = Odds Ratio; AOR = Adjusted Odds Ratio.

^aIn the unadjusted model, it represents the odds ratio of proving certain social support without specifying the relationship of the network. In the adjusted model, it represents the odd ratio for linear combinations of coefficients of social support by each relationship.

⁺p < .10.

*p < .05.

**p > .01.

***p < .001.