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The Impact of Social Context on Self-Management in Women Living with HIV

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Abstract

HIV self-management is central to the health of people living with HIV and is comprised of the daily tasks individuals employ to manage their illness. Women living with HIV are confronted with social context vulnerabilities that impede their ability to conduct HIV self-management behaviors, including demanding social roles, poverty, homelessness, decreased social capital, and limited access to health care. We examined the relationship between these vulnerabilities and HIV self-management in a cross-sectional secondary analysis of 260 women living with HIV from two U.S. sites. All social context variables were assessed using validated self-report scales. HIV Self-Management was assessed using the HIV Self-Management Scale that measures daily health practices, HIV social support, and the chronic nature of HIV. Data were analyzed using appropriate descriptive statistics and multivariable regression. Mean age was 46 years and 65% of participants were African-American. Results indicated that social context variables, particularly social capital, significantly predicated all domains of HIV self-management including daily health practices ($F=5.40$, adjusted $R^2=0.27$, $p<0.01$), HIV social support ($F=4.50$, adjusted $R^2=0.22$, $p<0.01$), and accepting the chronic nature of HIV ($F=5.57$, adjusted $R^2=0.27$, $p<0.01$). We found evidence to support the influence of the traditional social roles of mother and employee on the daily health practices and the chronic nature of HIV domains of HIV self-management. Our data support the idea that women's social context influences their HIV self-management behavior. While social context has been previously identified as important, our data provide new evidence on which aspects of social context might be important targets of self-management interventions

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for women living with HIV. Working to improve social capital and to incorporate social roles into the daily health practices of women living with HIV may improve the health of this population.

Keywords

U.S.A; Social Environment; Women; Self Care; HIV; Medical Sociology

Introduction

Women represent over 25% of those living with HIV in the United States and over 50% of HIV infections worldwide (Aziz & Smith, 2011; Centers for Disease Control and Prevention, 2010; UNAIDS, 2009). For this growing population, many self-management behaviors are required for improving and maintaining health. At the same time, however, many of these women are confronted by multiple social context vulnerabilities that may impede their ability to perform these necessary behaviors.

Self-management is comprised of modifiable daily tasks that individuals do to manage their chronic illnesses (Bodenheimer et al., 2002; Lorig & Holman, 2003; Richard & Shea, 2011). The development and widespread availability of HIV antiretroviral therapy has transformed HIV into one such chronic illness, requiring continual self-management work, generally outside of the healthcare system (Ford et al., 2011; Hammer et al., 2008). For HIV, self-management is a set of behaviors that directly and indirectly decrease susceptibility to worsening HIV. These behaviors also decrease susceptibility to other burdensome non-AIDS defining conditions including cardiovascular disease, cancer, and hepatic disease (Richard & Shea, 2011; Hasse et al., 2011). The beneficial behaviors of disease self-management include common health promoting activities such as eating a healthy diet or engaging in physical activity; health maintenance activities including medication adherence and accessing appropriate medical services; improving psychological and emotional functioning through self-efficacy and empowerment exercises and reducing negative emotional states; and improving social relationships by developing collaborative relationships with health care providers, developing and using a positive social support network, and coping with HIV stigma (Swendeman et al., 2009). Most self-management interventions have focused on HIV medication adherence or safe sex (Rueda et al., 2006; Sandelowski et al., 2009; Lyles et al., 2007), however there is great opportunity within the field to adopt a more holistic approach and target the upstream behaviors to promote the overall health of the person living with HIV (High et al., 2012). For people living with HIV, self-management is a lifelong endeavor, and one that may be substantially affected by the social contexts in which they live.

The concept of social context refers to “patterns that reflect larger structural forces that shape the texture of people’s day-to-day realities” (Sorensen et al., 2003). For women living with HIV, vulnerabilities within their social context may include demanding social roles (wife, mother, employee), poverty, homelessness, and inadequate access to healthcare, as well as pervasive structural issues such as powerlessness, racism, sexism, and classism (Bozzette et al., 1998; Schuster et al., 2000; Webel & Higgins, 2012; Hackl et al., 1997; Merenstein et al., 2009; Hunter, 2009; Hodder et al., 2010). These women may also experience low levels of social capital, a construct that in its positive form implies factors such as social support and social integration could potentially facilitate self-management behaviors. The intersection of various social context vulnerabilities may inhibit self-management behaviors of a woman living with HIV, resulting in poor health outcomes (Arrivillaga et al, 2009; Adimora & Auerbach, 2010). However, the extent to which they affect HIV self-management is currently unknown. Identifying and determining the effect of

these vulnerabilities on a women's self-management, and ultimately her health, may help us move towards more comprehensive interventions to improve the overall health and well-being of this population. Our purpose was to examine the relationship between social context vulnerabilities and HIV self-management, using a feminist sociological perspective. The specific research questions were: 1) Which social context variables were associated with *increased* HIV self-management? 2) Which social context variables were associated with *decreased* HIV self-management? and 3) What is the impact of gender-specific roles on HIV self-management?

This study utilized feminist sociological theory to guide assumptions and analysis. Feminist sociological theory provides a lens for understanding the complex social context and power structures within which women must manage their HIV infection. At its heart, feminist sociological theory examines the meaning of societal structure on women's agency, and acknowledges the microsociological and macrosociological issues that impact women's daily lives (Doyle, 2001). Women have been uniquely impacted by HIV, from shouldering the burden of caretaking, to threats to their reproductive decision-making, to being biologically and socially more vulnerable to infection than most men (Doyle et al., 1994). Feminist theory considers how the everyday lives of women are patterned by structural inequality (Doyle, 2001), capturing the competing demands that we hypothesized would affect women's ability to manage their HIV infection. Women may have less power within their social worlds and social structures, impacting health decision-making and health outcomes (Doyle, 2001; Doyle et al., 1994). A large body of research has been devoted to the unequal HIV risk faced by women (Higgins et al., 2010; Kako et al., 2012; Pettifor et al., 2012; Zierler & Krieger 1997), and many HIV prevention interventions are informed by feminist frameworks (Pinkham et al., 2012; Pitpitan et al., 2013; Strathdee et al., 2013). Little work, however, has been done to examine the impact that gender, conflicting societal demands and lack of social power have on the self-management of HIV in women.

The studies that have looked at gender and health determinants in women living with HIV have primarily focused only on adherence to HIV antiretroviral therapy. Arrivillaga and colleagues (2009) found that women living with HIV in Colombia who reported being in a low social position had a significantly higher probability of low HIV antiretroviral therapy adherence (OR = 5.65, $P < 0.01$) than people of higher social standings (Arrivillaga et al., 2009). Women have been shown to be less likely to get access to HIV care and antiretroviral therapy due to low social standing (Gebo et al., 2005). While adherence to antiretroviral therapy is fundamental to maintaining and improving one's health, in order to live well with HIV, women have to do more than just adhere to their medications. This is particularly relevant today as people living with HIV are living longer and, as they age, must deal with multiple chronic comorbidities, each of which comes with its own set of necessary self-management behaviors (Hasse et al., 2011; Swendeman et al., 2009). In recognition of the shift in the HIV epidemic to an aging population, a more comprehensive examination of self-management under these current conditions is necessary.

One challenge that may affect a woman's HIV self-management is the social role of caregiver, specifically as a mother (Doyle et al., 1994). Consistent findings suggest that the increased work of motherhood and the responsibilities women living with HIV have in the context of family, may force women to prioritize the care of their families over their own needs. In order for any HIV self-management intervention to be effective and sustainable, it must address the need for mothers to better balance their role as a mother and a woman living with a chronic, manageable health condition.

Additionally, women living with HIV may have lower levels of social capital due to cultural and structural challenges (Doyle et al., 1994; Zierler & Krieger 1997). Social capital has

been described as the “aggregate or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (Bourdieu, 1986). These resources provide members with credit(s) to be used in the larger social world to achieve their interests (Bourdieu, 2001; Coleman, 1988; Helliwell & Putnam, 2004; Hsieh, 2008; Kawachi et al., 1999; Pitkin Derose & Varda 2009; Portes, 1998). Over the last half-century, investigators have examined the relationship between social capital, socioeconomic status and health with mixed results (Kouvonen et al., 2008; Lochner et al., 2003). However, it can be useful in quantifying the individuals’ perception of the resources that being part of a social network can provide and is central to understanding how social context vulnerabilities affect self-management. This is especially true in women, where increased social capital has been shown to be influential on improved health outcomes (Eriksson et al., 2011).

Women living with HIV are a highly vulnerable population, often underserved and understudied (Heidari, 2011). Their vulnerability may decrease their HIV self-management behaviors, resulting in a detrimental effect on their health. Given the increasing prevalence of HIV in women throughout the world (UNAIDS, 2009), there is a need to understand and address the impact of social context vulnerabilities on HIV self-management in order to determine the most efficacious and sustainable intervention strategies from both individual and societal perspectives.

Materials and Methods

Data Collection

We conducted a cross-sectional secondary analysis from a larger prospective, mixed-method scale development study of HIV self-management in adult women living with HIV (Webel et al., 2012a). Women were recruited from two urban regions in the U.S. (Northeastern Ohio and the San Francisco Bay Area, California). Participants completed a baseline assessment and 4-week follow up visit; only the baseline data is reported here since our focus was not on changes over time.

Sample—Two hundred and sixty women were recruited for the study. Participants were recruited from HIV Clinics and AIDS Service Organizations. Inclusion criteria were: 1) HIV diagnosis; 2) 18 years; 3) self-identify as female; and 4) fluent in English. All study procedures were reviewed and approved by the institutional review boards at the University Hospitals, Case Medical Center and at the University of California, San Francisco. Each participant signed an informed consent document and then completed a self-report survey. Participants were compensated with a \$25 gift card.

Dependent variable: To assess our hypothesized dependent variable, we used the 20-item *HIV Self-Management Scale* (Webel et al., 2012a). The three domains of HIV self-management are: 1) Daily self-management health practices (e.g. “Staying physically active is an important part of my HIV self-management strategy”); 2) Social support and HIV self-management (e.g. “Attending support groups is an important part of my HIV self-management strategy”); and 3) Chronic nature of HIV self-management (e.g. “I have accepted that HIV is a life-long condition that can be managed”). Each item is scored on a 0–3 scale where 0=the item does not apply, 1=the item never occurs, 2=the item occurred sometime recently, and 3=the item occurs all of the time. All items are positively worded so a higher score indicates more self-management. Each domain is scored separately by summing applicable item responses and dividing by the number of items in that domain. Psychometric testing yielded evidence of construct validity (factor analysis explained 48.6%

of the variance in the scale), as well as internal consistency ($\alpha=0.72-0.86$) and temporal reliability ($\alpha=0.61-0.85$), for this scale (Webel et al., 2012a).

Predictor variables: When selecting predictor variables in our model, items and scales were chosen because they were theoretically congruent with the feminist sociological framework (Doyle, 2001; Doyle et al., 1994), and were valid and reliable in our population (Beltran et al., 2011). These variables included social roles (wife, mother, employee), marginalities (race, poverty, housing stability, education), individual-level social capital, and access to healthcare resources.

Social Roles—We were interested in social roles that have been found to affect the care of women living with HIV (Webel & Higgins, 2012). These included being a mother, a wife, or an employee. Both mother and employee were assessed dichotomously (Do you have any children? Do you work for pay?), and the role of wife was assessed categorically then recoded into a dichotomous variable where those who reported being married or in a domestic partnership were categorized as being a wife and those who reported being single, divorced, or separated were categorized as not being a wife. We also explored the relationship between having children living at home and HIV self-management. This variable was assessed continuously (How many children live at home?), and was recoded into a dichotomous variable, as the distribution was bimodal. Any woman reporting 1 child living at home was coded as having a child living at home, and all others were coded as not having children living at home.

Race, Poverty, Housing Stability, and Education—Race and educational level were assessed categorically (Race/Ethnicity: Asian/Pacific Islander, African American/Black, Hispanic/Latina, Native American Indian, White/Anglo, Other; Highest level of education completed: 11th grade or less, High School diploma or equivalent degree (General Education Development (GED) diploma, 2 years of college, College, Master's Degree, Doctorate). Housing stability was assessed dichotomously (Do you have permanent housing?). Income was used to assess poverty and it was asked as continuous variable (What is your current annual income?).

Social Capital—We assessed perceived social capital using the validated and widely used *Social Capital Scale* (Onyx & Bullen, 2000). The 36-item scale has eight subscales including: participation in the local community, social agency, feelings of trust and safety, neighborhood connections, friends and family connections, tolerance of diversity, value of life, and workplace connections. We used a version of the scale that excluded the 5 work-related items, anticipating low employment in our sample. This shorter version has been validated in people living with HIV and was found to be psychometrically sound (Webel et al., 2012b). An example of the questions this scale includes is, “Do you feel valued by society?” Participants were asked to rate each item on a 1–4 Likert-type scale with higher scores being consistent with more social capital. Each item was then summed to create a total social capital score (Webel et al., 2012b; Onyx & Bullen, 2000). Cronbach's alpha reliability coefficient was 0.88 for this scale.

Access to care—We assessed access to health care using the 9-item *Access to Care Instrument* (Cunningham et al., 1995). This valid instrument has been used to measure access to health care in people living with HIV. One example of a question is “Sometimes I go without the medical care I need because it is too expensive.” Each item is scored using a 5-point Likert Scale, and responses are summed to create a total score ranging from 9–45 with higher scores indicating less access to care. A total score between 36–45 indicates less

or poor access to care and scores 9–35 indicate adequate access to health care (Sayles et al., 2009). In the present study, Cronbach's alpha reliability coefficient was 0.74 for this scale.

Data analyses—All data were entered into a data management program to check the data integrity and assumptions for validity. Descriptive statistics were used to summarize participants' demographic and clinical characteristics. To analyze the effect of social context vulnerabilities on the three domains of HIV self-management we conducted separate multivariate linear regression analyses for each domain. All candidate variables for the regression analyses were chosen *a priori* for their congruence with a feminist sociological framework (Beltran et al., 2011; Doyle, 2001; Doyle et al., 1994). Analyses were conducted using Stata Statistical software (version 11.2).

Results

Two hundred and sixty women living with HIV completed the survey. The mean age of the participants was 46 years (+/– 9.3). Most were African American (65%), 35% had completed 11th grade or less; 40% had a high school degree; 82% had permanent housing. The median annual income was \$10,000 (Interquartile range was \$6,000–12,614) and 94% of the participants reported having health insurance, (87% being public insurance). Of the social roles experienced by our participants, 86% were mothers but only 31% had children living at home with them; 17% were wives, and 21% were employees. The mean perceived *social capital* score was 2.73 (+/– 0.56), indicating that our participants perceived that they had above average social capital. The mean *access to care* score was 21.45 (+/–5.62) indicating that our participants, on average, had adequate access to health care resources. *Self-management* scores varied by domain; the mean *daily self-management health practices* score was 2.19 (+/–0.53); the mean *social support domain of the HIV self-management* scale was 2.0 (+/– 0.88), and the mean *chronic nature of HIV* score was 2.64 (+/– 0.43). Taken together, these self-management scores can be interpreted as a moderate level of HIV self-management, with the chronic nature of HIV being the most strongly practiced domain. Additional information on the characteristics of the participants can be found in Table 1.

Using multivariate regression, we explored the relationship between social context vulnerabilities and the three domains of HIV self-management in women living with HIV. Of the hypothesized predictors, race and total social capital significantly predicted *daily self-management health practices* ($F=5.40$, $p<0.01$, $R^2=0.27$); educational level, housing stability, being a wife, level of access to health care, and total social capital significantly predicted the *social support domain of the HIV self-management* scale ($F=4.50$, $p<0.01$, $R^2=0.22$); and age, housing stability, being a mother, level of access to health care, and total social capital significantly predicted the *chronic nature of HIV self-management domain* ($F=5.57$, $p<0.01$, $R^2=0.27$). Post-hoc analyses revealed that being African American was associated with a higher daily self-management health practices scores (mean 2.27 +/-0.55) compared to being Hispanic/Latina (mean 2.13 +/-0.43), Native American Indian (mean 2.15 +/-0.60), or being White/Angelo (mean 2.10 +/-0.50). The social context variables [race, total social capital, education level, housing stability, level of access to health care, and age] were associated with increased daily HIV self-management health practices, but being a wife, predicted a decrease in the social support domain of the HIV self-management scale, and being a mother, predicted a decrease in chronic nature of HIV self-management.

The total social capital score was the only consistent, significant predictor of HIV self-management across all three self-management domains. The beta coefficient for daily HIV self-management health practices was 0.40 (Confidence Interval (CI) 0.25–0.55). This would be equivalent to a 13% increase in the self-management score for each additional point increase in total social capital (scale range 1–4). The beta coefficient for the social

support domain of the HIV self-management Scale was 0.42 (CI 0.18–0.66). The lowest beta coefficient for social capital was on the chronic nature of HIV self-management domain and was 0.22 (CI 0.12–0.31). These models indicate that total social capital may be among the most effective target of interventions designed to improve HIV self-management in women living with HIV. Variables describing income and paid employment were not significant predictors of HIV self-management (Tables 2–4).

Discussion

In this sample of 260 women living with HIV in the United States, we found that social capital was significantly associated with all three domains of HIV self-management, and the remaining variables (social roles, marginalities, and access to care) were significantly associated with at least one of the domains of HIV self-management. These findings suggest that the social context in which women practice HIV self-management behaviors is important. Positive perceptions surrounding safety, equality, and valuing one's contribution to society, in a context of marked material deprivation [low income], led to improved HIV self-management behaviors. Interestingly, actual income did not affect HIV self-management; rather a perception of available social resources - social capital - appeared to exert the greatest influence on self-management outcomes. Our results are similar to both Cramm and Nieboer (2011) and Poortinga's (2006) findings on social capital (Poortinga, 2006; Cramm & Nieboer, 2011). These investigations found that social capital directly affects a person's perception of their health, controlling for other sociodemographic variables. Taken in perspective with other national investigations, our findings add to the growing evidence that social capital may improve health by mediating health promoting and disease preventing behaviors (Väänänen et al., 2009; Johnson et al., 2010; Mohnen et al., 2012). However, none of these previous investigations operationalized social capital using the *Social Capital Scale*, thus limiting our ability to compare findings. Nonetheless, the current study suggests that self-management behaviors, including diet, physical activity, engagement with health care providers, and improving social relationships may be the mechanism by which social capital can improve health in marginalized populations. Future studies should prospectively examine this relationship.

Researchers have suggested that HIV self-management interventions should integrate promotion and support of elements that may increase social capital (Bodenheimer et al., 2002; Lorig & Holman, 2003; Richard & Shea, 2011; High et al., 2012). Features of these interventions could focus on both the cognitive and structural components of social capital and may emphasize trust, similarities among participants, and transferable capital, as well as developing a critical awareness of the structural features that inhibit or encourage HIV self-management behavior including current and historical discrimination, community safety, and the wide-spread criminalization of HIV (Krieger, 2001; Krieger, 2012). Such interventions may capitalize on existing female social networks of women living with HIV, in which trust and shared peer norms already exist, with focused discussion around self-management behavior (Gregson et al., 2011; Campbell et al., 2012; Hosek et al., 2012).

Our findings support the positive impact of the role of being an employee on women living with HIV, which was also described by Hunter (2009) who reported that women living with HIV derive a sense of self-worth from their work. The positive effect we observed in our study confirms and extends this previous work by further specifying the nature of this relationship. The positive effect of the work role on self-management may go beyond just income generation (notably even with paid employment most of the women in our sample were still on public health insurance programs suggesting the work was temporary or sporadic). These observed benefits may also be related to the daily organization provided by a work routine and may serve as a way to balance a woman's personal health needs with the

needs of her family. Efforts to improve HIV self-management could be improved by also addressing the positive benefits of employment on a woman's health, and providing basic resources to help women living with HIV gain access to meaningful employment. However, the policy and structural interventions necessary to improve employment in women living with HIV are complex and challenging. Employing a feminist perspective here is valuable, as research has highlighted the negative impact that structural factors, such as pervasive low-income work, labor condition constraints, and the absence of strong formal and informal socioeconomic safety nets can impact HIV medication adherence in a predominantly female sample (Musheke et al., 2012). However, structural-level interventions showing promise include microfinance and gender empowerment interventions, increasing girl's school attendance, and gender empowerment training with a focus on work skills training and financial literacy (Gibbs et al., 2012).

Access to stable, safe housing is a key factor in improved health outcomes and one that has garnered significant attention by policy-makers (White House Policy on National Aids Strategy, 2010). Investigators have explored unstable housing as a way to better understand a woman's risk of becoming infected with HIV as well as adherence to antiretroviral therapy (Wenzel et al., 2007; Riley et al., 2007). Additionally, Leaver and colleagues (2007) linked stable housing to important health outcomes in people living with HIV (Leaver et al., 2007). Adding to this body of research, our study found that housing stability significantly, positively affected, the social support domain of the HIV self-management scale and the chronic nature of HIV self-management domain. The evidence suggests that stable housing may promote HIV self-management behaviors, further justifying the need for improving housing for women living with HIV.

In addition to describing the impact of social context variables on HIV self-management, our work fills a prominent gap in the literature by quantifying the relationship between social roles and self-management in women. We found that two social roles significantly negatively impacted HIV self-management: the role of being a wife on the social support domain of the HIV self-management scale and the role of being a mother on the chronic nature of HIV self-management (Hunter, 2009; Merenstein et al. 2009). Additionally, while not statistically significant, the role of being a mother also had a negative impact on the daily HIV self-management health practices whereas the role of employee had a positive impact on the same domain. Having children living at home did not affect our findings.

While our study has made several contributions to the literature, there are limitations to interpreting and generalizing our findings. Our data was limited by only surveying two communities. The differences in these communities are shown in Table 1 and significant differences were found between the sites in our regression models. These communities may not represent the entire HIV community in terms of access to medical care, social capital, and other measures of interest. Our data were further limited because several of our variables, which were measured on ordinal scales, were collapsed into dichotomous categories during analysis. Collapsing this data, while statistically appropriate, may oversimplify the relationship between variables. One variable which may have been affected by this analytic method is the construct of motherhood, measured by the variable 'Number of Children at Home.' We acknowledge that this conceptualization of motherhood is incomplete, but given the paucity of data on this topic, felt that presenting this data with its limitations was better than not presenting it at all. We strongly encourage future research examining a more comprehensive concept of motherhood and its relationship to self-management.

We also acknowledge the controversy surrounding the standard conceptualization and measurement of social capital (Macinko & Starfield, 2001) and that our measurement

selection of the *Social Capital Scale* to capture this concept may have overlooked some aspects of social capital. However, we agree with Macinko that it is important to be clear in this conceptualization and have not only advocated for the widespread use of the *Social Capital Scale* used in this study but we have also established its reliability and validity in a large sample of people living with HIV around the globe (Webel et al., 2012b). However, a limitation to this scale is that two of the subscales, social agency and participation in the local community may have a tautological relationship with the second domain of the HIV Self-Management Scale, social support and HIV Self-Management. Social support is an important aspect of disease self-management (Swendeman et al., 2009). To address this, we present each of the self-management domains separately and recommend that this relationship be examined in future research.

The influence that being an employee had on our sample highlights the need to clearly understand the type of work people are engaging in and administering work-related items in this scale will be helpful in further analyzing the positive aspects of employment in this population. Although, we anticipated and recorded low employment in our sample, we recommend that investigators carefully consider whether or not to include work-related items. Furthermore, given the low incomes we observed among those working, it would be interesting to further investigate the type, regularity, achieved self-purpose, and formality of the work women living with HIV are engaged in. This information could help us better identify how employment improves daily HIV self-management practices. Additionally, we did not examine wealth inequality in this study. Future work should include measures of both perceived wealth inequality and should take advantage of community-level, state/provincial-level, and national inequality measures (Fox, 2010). This feminist ecological perspective will provide much information on the potential efficacy of multi-level interventions to improve HIV self-management, particularly at the policy level, which can be challenging to change. Finally, we found that being African American was associated with a higher daily self-management health practices among women living with HIV. This finding is important considering the increase in African American women becoming infected with HIV and warrants further research to understand this positive relationship.

In summary, we found evidence supporting a relationship between aspects of a woman's social context and HIV self-management, using a feminist sociological framework. Specifically, we found that two social context variables, perceived social capital and social roles, exerted significant influence on a woman's HIV self-management behavior. These findings support using a feminist sociological framework in analyzing the health practices of women living with HIV to highlight how social capital and social roles can be used to develop effective and sustainable self-management interventions for this population.

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Research Highlights

- We found evidence that social context vulnerabilities significantly influence HIV self-management in women
- Of the vulnerabilities examined, traditional social roles and social capital exert the most influence on HIV self-management
- We also found evidence confirming the relationship between housing stability and HIV self-management in women
- Our findings support using the Feminist Sociological Framework in analyzing health practices of women living with HIV

Table 1

Descriptive Statistics of Participant Characteristics

	Northeast, Ohio (n=125)	San Francisco Bay Area, CA (n=135)	Total (N=260)
	Frequency (%) ¹	Frequency (%) ¹	Frequency (%) ¹
DEMOGRAPHICS			
Age, Mean (SD), years ²	45 (9.4)	48 (8.9)	46 (9.3)
Race			
African American	91 (70)	78 (60)	169 (65)
White/Angelo	24 (19)	22 (17)	46 (18)
Hispanic/Latina	13 (10)	9 (7)	22 (9)
Asian/Pacific Islander	0 (0)	5 (4)	5 (2)
Native American	1 (0.8)	7 (5)	8 (3)
Other	0 (0)	8 (6)	8 (3)
Education Level³			
11th grade or less	52 (40)	37 (29)	89 (35)
High School or General Equivalency Degree	51 (39)	52 (41)	103 (40)
2 years of college	20 (15)	28 (22)	48 (19)
4 years of college	5 (4)	9 (7)	14 (5)
Median Annual Income (IQR)	\$8,088 (3,000–12,000)	\$10,140 (8,088–12,000)	\$10,000 (6,000–12,614)
Has Permanent Housing ³	115 (90)	100 (74)	215 (82)
Has Health Insurance ³	118 (91)	132 (98)	250 (94)
Type of Health Insurance³			
Medicaid	87 (76)	64 (50)	151 (62)
Medicare	18 (16)	41 (32)	59 (24)
Private, not by work	2 (1.74)	1 (0.8)	3 (1)
Private, provided by work	4 (3)	11 (9)	15 (6)
SOCIAL ROLES			
Mother			
Have children living at home	53 (40)	30 (22)	83 (31)
Wife			
Employee	28 (22)	26 (19)	54 (21)
Perceived Social Capital, Mean (SD)	2.74 (0.50)	2.70 (6.2)	2.73 (0.56)
Access to Care, Mean (SD)	20.6 (6.3)	22.28 (5.8)	21.45 (5.62)
MEDICAL CHARACTERISTICS			
Year Diagnosed with HIV, Mean (SD)	1999 (7.4)	1995 (7.4)	1997 (7.5)
Prescribed Anti-Retroviral Therapy	102 (86)	96 (74)	198 (80)
Undetectable HIV Viral Load	51 (68)	54 (68)	105 (68)
Mean CD4 cells/ μ l (SD)	520 (362)	575 (378)	550 (371)

	Northeast, Ohio (n=125)	San Francisco Bay Area, CA (n=135)	Total (N=260)
	Frequency (%) ¹	Frequency (%) ¹	Frequency (%) ¹
HIV SELF-MANAGEMENT OUTCOMES			
Daily Self-Management Health Practices, Mean (SD)	2.11 (0.51)	2.27 (0.54)	2.19 (0.53)
Mean Social Support And HIV Self-Management, Mean (SD)	1.88 (0.85)	2.10 (0.89)	2.0 (0.88)
Chronic Nature Of HIV Self-Management, Mean (SD)	2.71 (0.35)	2.58 (0.49)	2.64 (0.43)

¹ Descriptive statistics are reported as frequency and per cent of total sample, unless otherwise noted;

² Statistical significant difference between sites was found using a Student's t-test at the 0.05 p-value;

³ Statistically significant difference between sites was found using either a Spearman rank correlation or chi-square at the 0.05 p-value

Table 2
 Relationship between Daily Self-Management Health Practices and social context variables in women living with HIV

Model	β	95% CI	p-value	F (df)	Adjusted R ²
Demographic Variables					
Age	0.006	-0.003-0.015	0.176		
Race	-0.072	-0.126-0.018	0.009		
Education level	-0.058	-0.147-0.031	0.196		
Permanent housing	0.135	-0.111-0.380	0.279		
Annual Income	-3.11 ^{e-06}	-0.000-5.44 ^{e-06}	0.472		
Social Roles					
Mother	-0.216	-0.471-0.040	0.097		
Employee	0.198	0.022-0.417	0.077		
Wife	0.043	-0.177-0.262	0.701		
Access To Care	-0.008	-0.024-0.007	0.287		
Perceived Social Capital	0.404	0.261-0.546	<0.001		
Site	0.209	0.035-0.334	0.019		
Constant	0.889	0.177-1.602	0.015	5.40 (11,123)	0.27

CI = confidence interval, df = degrees of freedom

^eVariable selection consistent with the feminist sociological theory

Table 3
 Relationship between social support and HIV self-management and social context variables in women living with HIV

Model	β	95% CI	p-value	F (df)	Adjusted R ²
Demographic Variables					
Age	-0.006	-0.021 – 0.009	0.398		
Race	-0.006	-0.095 – 0.082	0.889		
Education level	-0.253	-0.399 – 0.107	0.001		
Permanent housing	0.538	0.150 – 0.927	0.007		
Annual Income	-1.33 ^{e-06}	-0.000 – 0.000	0.851		
Social Roles					
Mother	0.255	-0.168 – 0.677	0.236		
Employee	-0.105	-0.471 – 0.261	0.572		
Wife	-0.424	-0.779 – 0.691	0.020		
Access To Care	0.030	0.004 – 0.055	0.022		
Perceived Social Capital	0.421	0.181 – 0.660	0.001		
Site	0.350	0.069 – 0.631	0.015		
Constant	-0.326	-1.514 – 0.861	0.588	4.50 (11,129)	0.22

CI = confidence interval, df = degrees of freedom

^eVariable selection consistent with Feminist Sociological Framework;

Table 4

Relationship between chronic nature of HIV self-management and social context variables in women living with HIV¹

Model	β	95% CI	p-value	F (df)	Adjusted R ²
Demographic Variables					
Age	0.010	0.004 – 0.056	0.001		
Race	-0.027	-0.623 – 0.007	0.120		
Education level	-0.040	-0.097 – 0.018	0.174		
Permanent housing	0.197	0.044-0.351	0.012		
Annual Income	-4.44 ^{e-06}	-9.86 ^{e-06} -9.89 ^{e-07}	0.108		
Social Roles					
Mother	-0.219	-0.387-0.052	0.011		
Employee	0.084	-0.057-0.226	0.239		
Wife	0.069	-0.073-0.212	0.338		
Access To Care	-0.012	-0.021-0.002	0.023		
Perceived Social Capital	0.218	0.124-0.311	<0.001		
Site	0.008	-0.101-0.118	0.879		
Constant	2.000	1.543-2.456	<0.001	5.57 (11,128)	0.27

CI = confidence interval, df = degrees of freedom

¹ Variable selection consistent with the Feminist Sociological Framework;