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Abstract

The design and implementation of structural interventions may provide for simultaneous and longitudinal responses to prevention needs in multiple contexts as defined by social determinants, thus varied opportunities exist to respond to the HIV prevention needs of women. According to the CDC, in 2010, the rate of new HIV infections among black women was 20 times that of white women, and the rate among Hispanic/Latino women was 4 times the rate of white women. Additionally, 86% of HIV infections in women were attributed to heterosexual contact and 14% to injection drug use (CDC, 2012). These numbers are reflected outside the US with 49% of those infected by HIV being women with a predominant source of infection being related to heterosexual transmission (WHO, 2008). In sub-Saharan Africa, of those living with HIV, 60% are women.

Attention to the influential context of social determinants of health provides unique opportunities for innovative prevention practice in HIV/AIDS prevention for women. In this paper, social determinants of health as an influential, behavioral concept is defined both in terms of women's health and their sexual behavior decision making, along with examples of potential structural interventions that not only address the social determinants of their HIV risks but also reflect the contextual complexity of their life experiences. An earlier study (Abdul-Qader and Collins, 2011) solicited statements from a sample of experts in HIV prevention and areas of public health to identify potential structural interventions that would be feasible and impactful regarding HIV prevention - the DHAP Structural Interventions Mapping project. Data was elicited from these stakeholders most likely to be designing and guiding interventions to determine their perspectives on feasible and impactful structural intervention to address sexual behavior in women. The current paper is based on secondary analysis of 20 of these potential structural interventions generally and specifically applicable to women and their HIV prevention needs. Qualitative analysis resulted in three overall themes of economic interventions, response to violence against women and integrated health service delivery strategies that address key health-belief and socio-cultural issues. The themes are reflected and substantiated in current research literature, and provide a foundation for the next steps regarding research, policy planning and program implementation for developing evidence-based structural interventions focused on preventing HIV in women.

Keywords

Social determinants; structural interventions; women's health; HIV prevention

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Exploring the Influence of Social Determinants on HIV Risk Behaviors and the Potential Application of Structural Interventions to Prevent HIV in Women

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ABSTRACT

When seeking to prevent HIV/AIDS in women, attending to aspects of their lived experience provides opportunities to address the presence of social determinants in prevention strategies. According to the CDC, in 2010, the rate of new HIV infections among Black women was 20 times that of White women, while among Hispanic/Latino women it was 4 times the rate of White women. Additionally, 86% of HIV infections in women were attributed to heterosexual contact and 14% to injection drug use. The WHO indicates that worldwide, 49% of individuals infected by HIV are women, with a predominant source of infection tied to heterosexual transmission. This paper presents social determinants as influential factors in terms of women's sexual behavior decision-making, along with suggested structural interventions to address the social determinants of their HIV risks. Secondary analysis was conducted on data from an earlier study (Abdul-Quader and Collins, 2011) which used concept-mapping to examine the feasibility, evaluability, and sustainability of structural interventions for HIV prevention. The current analysis focused on structural interventions applicable to women and their HIV prevention needs. Three themes emerged: economic interventions, responses to violence against women, and integrated health service delivery strategies. The themes provide a foundation for next steps regarding research, policy planning, and intervention implementation that is inclusive of women's lived experience. The paper concludes with suggestions such as attention to innovative projects and a paradigm shift regarding policy planning as key next steps towards HIV prevention that reflects the contextual complexity of women's lived experiences.

Keywords: HIV, Social Determinants, HIV risk, Structural Interventions, women's health, HIV risk reduction, HIV prevention

INTRODUCTION

There is a disproportionate burden of HIV infection within the lives of women and girls of color as compared to White women. In the United States, even though new HIV infections among Black women fell by 21% between 2008 and 2011, the diagnosis of HIV infection for Black females was almost 20 times as high as the rate for White females, while it was approximately 4 times as high as the rate for Hispanic/Latino females (CDC, 2012). As of 2011, women made up 49% of the 34 million persons worldwide infected with HIV (Joint United Nations Programme on HIV/AIDS, 2012). In sub-Saharan Africa, 60% of those living with HIV are women. From a global perspective, women of color are deemed to be more severely burdened by HIV/AIDS partially based on socially determined barriers many face within their respective cultures, locations and contexts (Larios, et al, 2009; Gibbs, et al, 2012; Gupta, et al, 2008). Typical descriptions of the social determinants affecting women's vulnerability include disadvantages based on gender, race, ethnicity, economics, and geographic location. Additionally, these barriers overlap to provide unique effects that influence behavior in general and sexual behavior decision making in particular (Dworkin & Blankenship, 2009; Kippax, 2008).

In recognition of external barriers and their effects on the lives of women and girls in their fight against HIV/AIDS, the Centers for Disease Control and Prevention suggested a more holistic prevention framework by recognizing the effects of social determinants of health. This recent White Paper titled, *Establishing a Holistic Framework to Reduce Inequities in HIV, Viral Hepatitis, STDs, and Tuberculosis in the United States*, published by the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (CDC, 2010), defined social determinants of health as "the complex, integrated, and overlapping social structures and economic systems that include the social environment, physical environment, health services and structural and societal factors." Within this definition is the recognition of structural, cultural, and societal factors responsible for health inequities, which in turn affect the chances of women's ability to successfully navigate the HIV/AIDS prevention process. There has been increased recognition that "interventions that address social determinants of health have The greatest potential public health benefit" (Frieden, 2010, p. 594). The approach, taken by the CDC to address social determinants of health, is supported by attention to "upstream" (physical and social environments) and "downstream" (medical care, personal resources and health behaviors) social determinants of health which exert levels of influence on personal behaviors, including those related to health maintenance (Woolf and Braveman, 2011). This includes addressing larger environmental and social factors that may influence risk-taking behaviors (Frieden, 2010).

Research continues to indicate an expansive listing of external social determinants that affect the capacity and efficacy of women to engage in behavior change regarding safer sexual behavior (Jana, et al, 2004; Huso, et al, 2010: Gomez, 2011; Gibbs, et al, 2012). For example, stable housing for HIV-positive individuals was associated with changes in risk behaviors. Changes in housing status significantly reduced risks of drug use, needle use, needle sharing and unprotected sex (Aidala, et al., 2005). Additionally, social and structural factors such as legal, cultural, and policy aspects of the social environment may also support the probability and vulnerability of being at risk for HIV (Gupta, et al, 2008; Parker, et al, 2013). According to Gupta et al, there is a context of vulnerability that "either contributes to increased individual risk of exposure to HIV or compromises the ability to protect oneself from infection," which is illustrated by the trajectory of gender inequality as a super structural factor that affects women's

economic participation and culminates in an inability to purchase food and other life necessities. Key examples of such social determinants cited include gender inequality, marital status, sexual violence, migratory behavior in search of employment, stigma related to HIV/AIDS, geographic location, and legal status (Gupta, et al, 2008).

These social determinants are potentially compounded when they intersect to create and maintain these contexts of vulnerability, which contribute to the need for unique interventions to address their overlapping effects. Examination of "context of vulnerability" factors that influence HIV risks suggest that modifying these contextual factors may facilitate risk reduction and provide justification for developing women-specific intervention approaches tailored to specific determinants of risks (Tawil, et al., 1995; Gupta, et al., 2008). Studies have indicated the role of stress, marital status, presence of children on health, underlying a woman's ability and opportunity to fend for herself economically (Shannon, et al. 2012; Auerbach, et al, 2011; Gibbs, 2012). These studies provide insight as to the linkages between inequities experienced by women based on multiple social determinants (expected gendered behavior, sexism, violence, marital status, economic exclusion) and their overlapping effects on women's ability to make empowered decisions in general and regarding their health in particular.

The compounded effects of separate, social determinants of health on the lived experience of women consequently affect their sexual behavior decision-making (Gibbs, et al, 2012; O'Leary & Martins, 2000; Dworkin & Blankenship, 2009). For example, a woman who is financially dependent on a male sex partner has little power to insist on condom use upon learning that he has other female sex partners. Such dependence could affect other aspects of her life such as access to food, transportation, and housing. Domestic violence, obtaining prenatal care, and empowered sexual choices are tied to economic access and thus ties to having and maintaining good health. Key linkages exist between drug use and risky behaviors (Arasteh , Des Jarlais, and Perlis, 2008; Broz, et al, 2014; Majer, Rodriguez, Bloomer, and Jason, 2014). Similarly, women experience the scarcity of health-related resources in poor, under-served communities or villages where access to health care and condoms are not readily available. These barriers exist, largely, outside the behavioral purview of the individual woman and thus are typically beyond the ameliorative scope of interventions designed to influence or change women's behavior on a group or individual level (Gomez, 2011; Auerbach, et al, 2011; Kim, et al, 2008).

Social determinants may be addressed through structural interventions, which have been defined as those prevention interventions that include physical, social, cultural, organizational, community, economic, legal, and policy factors (Abdul-Quader & Collins, 2011). Because structural interventions attend to public health problems within the context of social, economic, and political environments they often have the potential to extend or increase the effects of individual-level or group-level interventions by combining interventions to create and maintain environments that enable individuals to consistently practice preventive behaviors (Auerbach, et al, 2011; Gupta, et al, 2008; Grossman, et al, 2013; Meader et al., 2013). This maintenance of a supportive environment for new behaviors may be viewed as one of the ideal outcomes of a structural intervention. However, this potential is not typically reflected in HIV prevention interventions aimed at changing women's sexual behavior decision making.

The general lived experiences of women worldwide include similar effects related to their gender, class, race, geographic location, education and economic stability. Though women in high and low resource countries have similar experiences regarding these and other more

specific social determinants, the majority of HIV prevention interventions that reflect these aspects are limited in number, and tend to be implemented primarily in medium to low resource countries. Addressing social determinants of health is said to have 'the greatest potential public health benefit' (Frieden, 2010) as well as affecting major health behaviors for women (Bates, Berkman and Glymour, 2013). Additionally, there is a suggested role for civil society, policy makers and researchers to play in advancing this focus with regard to designing and implementing interventions that address the effects of social determinants on health and health behavior decision-making (Blas, et al, 2008; Frieden, 2010; Raphael, Curry-Stevens and Bryant, 2008; Woolf and Braverman, 2011), as well as the need for broader scholarship (Bates, Berkman and Glymour, 2013). The structural interventions identified in the earlier study (Abdul-Quader and Collins, 2011), reflected a broad perspective and were inclusive of, but not specifically focused on, the lived experiences of women. The current analysis reviewed these interventions proposed by the subject matter experts to focus on the suggested structural interventions that included (general) or reflected (specific) the lived experiences of women. Revisiting this information and focusing on specific HIV prevention needs of women in relation to social determinants can provide direction for informed next steps in designing and implementing structural interventions that reflect women's lived experiences, while increasing the knowledge base that is available to policy makers, researchers and members of civil society.

METHODS

Secondary data analysis involves reanalyzing data that were collected earlier or for purposes other than the current application (Heaton, 2008). In addition to being a time and cost saving methodology, there is the possibility for discovering new knowledge or perspectives (Cheraghi-Sohi, et al, 2013). The current study conducted secondary analysis of data collected from stakeholders and subject-matter experts representing different disciplines and regions of the United States, as well as different developed and developing countries (Abdul-Quader and Collins, 2011). This earlier study used a concept-mapping exercise to solicit ideas, from these experts regarding their perception of the feasibility and impact of implementing structural interventions for HIV prevention. It is a mixed-methods approach that allows for the generation of initial ideas, and the use of rating and sorting to prioritize ideas to achieve a particular goal (Trochim, 1989).

As a planning and evaluation approach, concept mapping integrates familiar qualitative group processes ('brainstorming', 'pile sorting') with multivariate statistical analyses to describe ideas and represent these ideas visually through a map (Trochim & Linton, 1986; Trochim, 1989; Greene & Caracelli, 1997). Use of subject matter experts is an accepted practice for obtaining unique information not readily available and is also viewed as accessing the knowledge network of a specific field (Blas, et al, 2008; CDC, 2012; HHS, 2013). The subject matter experts in the original study were accessed to obtain key information on identifying structural interventions for HIV prevention.

The Initial Study

Abdul-Quader and Collins (2011) used concept mapping to begin a taxonomy of potential structural interventions for HIV prevention. The planning stage of the mapping exercise included 75 subject-matter experts from a broad range of disciplines based on their knowledge, expertise and involvement in HIV prevention research and program activities, and structural interventions (Abdul-Quader and Collins, 2011). They were recruited and participated in the

generation stage of the exercise, by responding to the following prompt: "structural factors associated with HIV transmission may include physical, social, cultural, organizational, community, economic, legal, or policy aspects of the environment. To address these structural factors, a specific action (e.g., project, intervention, or social change) that has been or could be taken to reduce HIV transmission is. …". A total of 123 unique, non-redundant statements resulted from this stage, with each statement describing an action, project, or intervention that could address HIV prevention both in the United States and in international settings.

The next segment of the mapping exercise involved 31 of the original subject-matter experts from the United States (10) and other countries (21), rating each statement (on a scale of 1–5 regarding feasibility of implementation and impact on the HIV epidemic), and sorting (separating the structural interventions into separate meaningful groups). Once these steps were completed, the data were analyzed using the concept-mapping software program. This analysis resulted in a point-cluster map indicating the distribution of 123 statements in relation to each other, a table of mean feasibility and mean impact ratings, and a pattern match comparing clusters based on their feasibility and impact (See Abdul-Quader and Collins, 2011).

The Current Study

Secondary analysis was conducted on the original 123 structural statements to focus on suggested structural intervention related generally or specifically to preventing HIV in women. First, the statements were reviewed to determine whether they referred to women (directly or indirectly), which resulted in 20 suggested structural interventions. Qualitative analysis of these statements involved use of constant comparison methodology (Strauss & Corbin, 1990) based on open coding. In this process, once coding begins, statements were compared to earlier codes and were either included in the initial code, if possible, or a new code was created. Once all statements were coded, the data were further synthesized, allowing for discovery of emergent themes.

RESULTS

Three themes emerged from the 20 statements that were coded: (1) economic interventions, (2) response to violence against women, and (3) integrated health service delivery strategies (Table 1). The economic theme centered on economic inequality and provision of economic opportunity to women and resulted from codes focused on direct and indirect financial interventions. Those indirectly related to women involved primarily increasing their ability to earn money and assuring capacity to earn a living. Structural interventions to this effect include *eliminate bride and inheritance rules that prevent women and girls' independence in many cultures, keeping girls in school through late adolescence in developing countries*. These statements are more distal to developing economic equity for women. Direct economic interventions focused on providing money or credit to women; these statements include *support micro-credit financing schemes, provide economic alternatives for sex workers*.

Table 1. Statements Describing Women Focused Structural Interventions and Accompanying Themes

Statements and Accompanying Themes
Economic (Direct and Indirect) – 8 statements
Support rural development in regions with high levels of population mobility to give people work options closer to home.
Support micro-credit financing schemes for adolescent girls and young women in developing countries and other vulnerable populations.
Provide economic support systems and self-defense training for widows so they can avoid dangerous re-marriage or sexual dependency.
Provide economic alternatives for sex workers.
Legalize prostitution.
Increase interventions to keep girls in school through late adolescence in developing countries.
Eliminate bride and inheritance rules that prevent women's and girls' independence in many cultures.
Help organize cooperatives of sex workers.
Service Integration and Delivery – 8 statements
Make STD screening of HIV positive (and sexually active) a routine practice every six months a standard of care.
Provide condom access programs for teens and young adults.
Make HIV prevention services and messages part of general health services at all clinics and hospitals.
Allow women with drug use histories to continue to care for their children.
Integrate reproductive health, STD and HIV programs at CDC in funding and resource issues.
Require antenatal (prenatal) HIV screening of pregnant women.
Integrate family planning and HIV prevention services.
Provide STD clinical services as a part of HIV counseling and testing.
Response to Violence Against Women- 4 statements
Offer all male and female rape victims immediate access to non-occupational post-exposure prophylaxis (PEP).
Ensure fast track prosecution of domestic violence and rape cases where the perpetrator is HIV positive.
Open battered women's shelters for drug using women.
Provide economic support systems and self-defense training for widows so they can avoid dangerous re-marriage or sexual dependency.

The economics theme indicates what could be done from a practical and policy perspective in recognition of sociocultural norms that place economic resources in the hands of males or constrain women to obtain economic resources from a male. Limited access to economic resources and the power to generate or control economic resources may increase a woman's engagement in risky sexual behavior in order to earn money and impede her HIV prevention efforts. HIV risk reduction in relation to commercial sex by women has been an area where structural interventions have been implemented and evaluated in Thailand (Rojanapithayakorn and Hanenberg 1996), India (Swendeman, et al, 2009; Gurnani, et al., 2011), the Dominican Republic (Kerrigan, et al., 2006), the Phillipines (Morisky, et al., 2006), and Nevada (Albert, et al., 1995). Cultural and gender-based barriers that give economic power to males in a society have a direct impact on a woman's ability to earn a living or manage resources in a manner that protects personal or familial health. Additionally, keeping girls in school through incentives payments has resulted in decreased prevalence of HIV and herpes simplex virus-2 infections in a randomized trial (Baird, et al., 2012).

As this theme indicates, having the ability and preparation to earn a living would place a woman in a more empowered position regarding survival choices. Developing economic opportunity for women, such as micro-loan programs or alternative economic and employment resources for female commercial sex workers is potentially capable of reducing the likelihood of a woman being vulnerable to high-risk sexual behaviors as a means of earning income.

The second theme, response to violence against women, focused on social or sexual experiences that may negatively affect a woman's ability or resources to protect herself and the need for protections related to these experiences. Suggested structural interventions include *offer all male and female rape victims immediate access to non-occupational post-exposure prophylaxis; ensure fast track prosecution of domestic violence and rape cases where the perpetrator is HIV positive; and open battered women's shelters for drug using women.* Sexual violence against women may be perpetrated by an intimate partner within a relationship or from individuals outside of an intimate partner relationship, thus reflecting a risk factor for HIV infection in women (Wyatt, et al, 2002; Zierler, et al., 1991). Structural interventions may differ greatly depending on whether the perpetrator of sexual violence is an intimate partner with whom a woman has a relationship or whether that sexual violence comes from outside the relationship (Maman, 2000). Also reflected here are aspects of women's' reality that put them not only at risk for HIV, but also at risk for not being able to function socially because of the vulnerability to sexual and physical crimes that could negatively affect economic participation and productivity.

Sexual victimization places a woman at risk for HIV, whereas the consequences of sexual victimization may further reduce women's full participation in community and society and subsequently the ability to use HIV prevention resources. A woman exposed to HIV through a violent sex act requires a combination of biomedical and social interventions, but a culture with unacceptable levels of violence against women requires a structural intervention or interventions that address those risk determinants that support perpetuation of violence against women. Protection of women from HIV requires a combination approach whereby a woman who is a victim of sexual violence is provided with nPEP to reduce the probability of HIV infection, but also a societal response through the criminal justice system to identify and punish the perpetration of sexual violence.

The final theme of integrated health service delivery focuses on health service delivery strategies that address key health-belief and socio-cultural issues. It includes statements describing structural interventions that reflect HIV concerns regarding health (*require antenatal [prenatal] HIV screening of pregnant women*), health service delivery (*integrate family planning with HIV prevention services, integrate reproductive health, STD and HIV programs at CDC in funding resource issues*), and social service support (*allow women with drug histories to continue to care for their children*). These statements indicate a specific need for interventions that directly include HIV and STD service delivery as a component of women's health care and social service delivery. Additionally, for a woman, the possibility of a negative response as a result of having to disclose any information regarding the purpose of a doctor's visit, HIV or STD service delivery can be ensconced within the need for reproductive or prenatal care. Women who are more concerned about reproductive health or having a successful pregnancy may be able to conceptualize HIV screening as a part of a comprehensive health service delivery process. These stated structural interventions provide guidance for the possibility of integrating and 'normalizing' HIV and STD prevention within the rubric of health and reproductive care, including innovative projects with similar goals of addressing reproductive needs (Swendeman, et al, 2009; Gurnani, et al., 2011; Kerrigan, et al., 2006).

DISCUSSION

Attention to the influential context of social determinants on women's health and their ability to participate in and benefit from HIV prevention interventions provides unique opportunities for innovative prevention practice. Obtaining information from subject matter experts regarding structural interventions by accessing the knowledge network (Blas, et al, 2008), allowed for initially identifying their potential usability regarding HIV prevention (Abdul-Quader and Collins, 2011). The structural interventions, reflected in the statements analyzed in this study, reflect possible strategies to address the broad array of overlapping social determinants where women are concerned, thus providing a roadmap as to what is feasible and impactful to support women's efforts to engage in HIV protective behaviors. Social determinants such as race, gender inequality, marital status, economic status, geographic location, education, and cultural norms tend to have a restrictive effect on women's sexual decision-making behavior (Walters, et al, 2012; Shannon, et al, 2012; Gillespie-Johnson, 2008). As stated earlier, overlapping effects of social determinants may erode a woman's ability to respond to behavior change strategies that are key components of typical HIV prevention interventions. Therefore, attempts to address these constraints must include attention to her social milieu from a structural perspective (Behanzin, et al, 2013; Shannon, et al, 2012; Sanders-Phillip, Roberts & Mathews, 2012).

The results of conducting a secondary analysis of the data-set of statements reflecting potential structural interventions (Abdul-Quader and Collins, 2011) also provide added support for understanding feasibility and impact under real-world conditions when creating structural interventions to prevent HIV in women. Studies that reflect the influence of structural interventions are available (Rojanapithayakorn and Hanenberg 1996; Swendeman, et al, 2009; Gurnani, et al., 2011; Kerrigan, et al., 2006; Morisky, et al., 2006; Albert, et al., 1995), as well as the need for such studies to reflect the unique needs of women regarding HIV prevention (Lin, McElmurry and Christiansen, 2006; Aneiku. 2002). The suggested impact of structural interventions reflects both the intransigence of social determinants in the lives of women and the

accompanying examples of structural interventions required to address their effects. Of the suggested interventions, a majority simultaneously reflect both social determinants for women and structural interventions that are deemed feasible and capable, pending results of such studies, of ameliorative change. Consequently, cultural and gender-based barriers reflect a need for innovative HIV prevention policy and program development that reflect the lived experiences of women. Typically, individual and social networks studies are not adequate because they respectively do not reflect the broad aspects of women's lived experiences by their scope. These interventions are usually not as inclusive of the structural focus that is necessary to address social determinants that support women's successful participation in prevention interventions (Gibbs, et al, 2012)

The studied effects of social determinants of health, and the applicability of structural interventions to address women's HIV prevention needs, are supported within the literature, including suggestions for focused research and policy planning as key next steps to move this perspective to practical applicability (Gibbs, et al, 2012; Gupta, et al, 2008; Kim, et al, 2008). Factors for inclusion in intervention design include integration of stakeholders (Fawole, Ajuon & Osungbade, 2004), combinations of interventions and financial interventions, all within the scope of a longitudinal focus. The literature strongly supports the relevance of structural interventions as a means of addressing the social determinants that leave women vulnerable to HIV. Studies cited in this paper provide examples of programs that are designed, implemented and maintained from a collaborative perspective (Gurnani, et al., 2011; Swendeman, et al, 2009; Gupta, et al, 2008; Kerrigan, et al., 2006; Ashburn, Kerrigan and Sweat, 2008), thus providing an alternative to typical research and intervention design processes which is often focused on individual or group outcomes with restricted accommodation of the lived experience of participants.

CONCLUSION

Limitations

This study possesses four key limitations. These include: (1) the perspectives of the subject matter experts, mostly from the US and developing countries, who served as participants in the concept mapping process; (2) realization that research findings on current, structural intervention studies are predominantly descriptive, natural history, or correlative in nature, meaning that many structural intervention studies reported are not supported by research designs that are more indicative of causation; (3) the potential for limitations when conducting secondary analysis of data that may have been collected for a separate purpose, and (4) the realization that structural interventions are likely to be affected by local cultural norms and numerous factors that may be problematic to change or modify from either a policy or research perspective.

Those limitations are reflected in the direct applicability of the ideas as presented, not the use of the subject matter experts (SMEs) because they represent access to a knowledge network that is applicable in both methodology and product. The subject matter expert participants in the original study identified potential structural interventions that reflected both a U.S. and international perspective for addressing women's HIV prevention needs. Therefore, reviewing these interventions for possible development and implementation will first require determining which suggestions would reflect the lived experience of women in the United States and outside. However, it is possible that some of the interventions are universally applicable with regard to women. For example, though women in industrialized countries tend to be predominantly more economically empowered than those who are not, it is more a matter of economic degree,

because poor women in any country require similar attention because of their vulnerability based on lack of economic resources.

Structural interventions that have been implemented and found to be efficacious use serial cross-sectional designs with few randomized control trials (Golden, Collins, et al., 2013). This reflects the considerable technical and conceptual difficulty in randomizing countries, states, and cities to experimental or control conditions. Few structural intervention studies have reported results based on randomized control trials (Baird, et al, 2010). When conducting secondary data analysis, there are inherent limitations in that the data may have been collected for a separate purpose that is not as specific to the current purpose. There is some applicability in the current paper, since structural interventions were the primary focus of the original study, while for the current paper, structural interventions is viewed as concurrent to recognition of social determinants on women's HIV risk behaviors and their ability to participate successfully in typical prevention interventions. Additionally, women were not the primary focus of the original study, while this paper focuses specifically on women.

Finally, implementing structural interventions may also be vulnerable to cultural and social norms regarding expectations of gendered behavior around issues like handling money, marital status, educational pursuits, and making other substantial decision. In many cultural settings, these decisions are the social privilege of males and allowing women to make these decisions as a means toward reducing their vulnerability to HIV in a structural intervention may provide challenges. This limitation may be reflected in not being able to replicate some structural interventions with typical fidelity after they are found to be efficacious through RCT.

Though the limitations of this study reflect some of the unique challenges and opportunities that are intrinsic components of developing and implementing structural interventions, there are also key strengths of the study. Varied and innovative opportunities exist to respond to the HIV prevention needs of women. The development and implementation of structural interventions is one example of such innovative practice. Results of this secondary analysis provide opportunities for innovation and expansion of the base of knowledge that is available when conducting this type of work on behalf of women and their HIV prevention needs.

Another strength of the study is that secondary analysis of the structural interventions provided additional insight into a key population regarding HIV prevention, while also accessing subject matter experts who are often difficult to reach in large numbers. These are two key advantages of qualitative secondary data analysis (Heaton 2008; Long-Sutehall, 2010) that were achieved in this paper. Access to subject area experts and their combined knowledge provided a unique opportunity to obtain data that could be subsequently augmented by local knowledge for intervention design and implementation.

In summary, research on structural responses that are feasible and have impact are needed as part of a comprehensive HIV prevention strategy that focuses on women, especially due to the compounding effects of social determinants on women's ability to participate in typical HIV interventions. Feasibility and impact of structural interventions, the focus of the original study (Abdul-Quader & Collins, 2011) as well as literature sources provide a supportive background for designing structural interventions that address the social determinants that negatively affect women's sexual decision-making abilities and sexual behaviors. There are available studies that provide an impetus for next steps that include this level of intervention design and implementation to address the continual presence of HIV in the lives of women (Latkin &

Knowlton, 2005; Aniekwu, 2006; Ashburn, et al, 2008; Kim, et al, 2008; Gibbs, et al, 2012; Golden, Collins, et al, 2013). This focus is also reflected in attention to the effects of social determinants in recent findings by the World Health Organization through its Commission on Social Determinants of Health (WHO, 2008; Marmot et al, 2008), the need for policies and programs (Braverman et al, 2011), the limitations of current policies (Woolf & Braverman, 2011), the potential barriers to addressing these determinants (Raphael, Curry-Stevens & Bryan, 2008) and the acknowledgement of the public health potential of addressing social determinants of health (Frieden, 2010). The shift in policy needed to support the larger focus is also indicated within current literature (Gibbs, 2008; Lurie, 2002 Blankenship, et al, 2006; Grossman, et al, 2013; CHIPTS, 2012) thus providing impetus for both evidence based research and a paradigm shift in the design and implementation of interventions aimed at preventing HIV in women.

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