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Intimate partner violence and HIV-positive women's non-adherence to antiretroviral medication for the purpose of prevention of mother-to-child transmission in Lusaka, Zambia

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ABSTRACT

Background: Prevention of mother-to-child transmission (PMTCT) depends critically on HIV-positive women's adherence to antiretroviral drugs during and after pregnancy. Adherence among pregnant and breastfeeding women remains a challenge across sub-Saharan Africa. Power dynamics within couples, such as intimate partner violence, has largely been neglected in research regarding PMTCT adherence.
Objective: This study aims to determine if there is a relationship between intimate partner violence and non-adherence to PMTCT.
Methods: In 2014, using a verbally administered cross-sectional survey at a large public health clinic in Lusaka, Zambia, 320 HIV-positive postpartum women, who were currently married or living with a man, provided information on their drug adherence during and after pregnancy, as well as relationship dynamics. Adherence was defined as the woman reporting she took or gave to the infant at least 80% of prescribed medication doses.
Results: Experiencing intimate partner violence was associated with decreased odds of adherence to PMTCT during and after pregnancy. Different forms of violence affected PMTCT adherence differentially. Physical violence had a less pronounced effect on non-adherence than emotional and sexual violence. A dose–response relationship between intimate partner violence and non-adherence was also observed.
Conclusions: Intimate partner violence is associated with non-adherence to PMTCT during and after pregnancy, which deserves increased attention in the effort to eliminate mother-to-child transmission of HIV.

1. Introduction

Antiretroviral (ARV) drugs during and after pregnancy can reduce the risk of mother-to-child transmission (MTCT) of HIV in utero, during childbirth, or while breastfeeding from 35% to less than 5% in low and middle-income countries (WHO, 2010a). Major strides have been made at the political and institutional level to increase coverage of ARVs for the purpose of prevention of mother-to-child transmission (PMTCT) in sub-Saharan Africa where 90% of HIV-positive mothers live (WHO, 2010b). Zambia is one of six countries in the region that has achieved PMTCT coverage of more than 75% (UNAIDS, 2012). Despite increasing access to highly efficacious combination antiretroviral therapy (cART) for PMTCT, hundreds of thousands of infants in sub-Saharan Africa continue to contract HIV from their mothers each year (WHO, 2013). In Zambia alone, despite a commendable downward trend, almost 10,000 infants are newly infected with HIV annually (UNICEF, 2012). A critical barrier to PMTCT in Zambia is HIV-positive women's poor adherence to cART during pregnancy and the breastfeeding period (Ngoma et al., 2015).

While given less attention than scaling-up ARV services, PMTCT depends critically on HIV-positive pregnant and breastfeeding women's adherence to cART across the cascade of care. Recent studies suggest that HIV-positive individuals need to take at least 80% of prescribed cART doses to adequately suppress HIV (Gordon et al., 2015; Kobin and Sheth, 2011). Suboptimal adherence to cART among HIV-positive pregnant and breastfeeding women not only increases the risk of MTCT, but also increases the likelihood of maternal HIV-related disease progression and drug resistance for both the mother and the infant (Nachega et al., 2007; Ngoma et al., 2015; Onono et al., 2015). Achieving high PMTCT adherence

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remains a challenge in many settings globally, including sub-Saharan Africa (Nachega et al., 2012). Indeed, research from Zambia indicates that PMTCT adherence ranges from 63% to 79% (Conkling et al., 2010; Megazzini et al., 2010; Stringer et al., 2010); however, these estimates are based on single dose Nevirapine (sdNVP) at the time of labor/delivery and not cART across the PMTCT cascade. Little is known about HIV-positive women's ability to adhere to the newer extended cART PMTCT regimens in Zambia.

Often, HIV-positive women's attitude, perceived norms, and personal agency are cited as ways to understand and address PMTCT adherence (Awiti Ujiji et al., 2011; Nyasulu and Naysulu, 2011; Varga and Brookes, 2008). The problem with examining PMTCT adherence using only intrapersonal constructs is that the sole responsibility to prevent MTCT is thereby placed on the HIV-positive mother, without taking into account the context in which these health behaviors occur and the large gender inequities that persist both within society and sexual relationships (Campbell et al., 2008).

Intimate partner violence (IPV) against women is one of the most compelling manifestations of unequal power in sexual relationships and the larger phenomenon of gender inequality (Blanc, 2001). IPV includes actual or threatened physical or sexual violence, or psychological and emotional abuse directed toward a partner/spouse that is part of a general strategy of power and control (Campbell, 2002; Johnson, 2008). Based on the most recent Zambian Demographic and Health Survey (ZDHS), IPV against women appears to be a normative and accepted behavior. Over 46% of women reported they believe a husband is justified in beating his wife for at least one specified reason and 47% of women reported experiencing IPV from their current partner/spouse (CSO, 2014). Qualitative research from Zambia indicates that refusing to have sex, discussing HIV testing or treatment, and disclosure of an HIV positive status to a male partner can initiate IPV against women (Human Rights Watch, 2007; Murray et al., 2006).

IPV is associated with numerous adverse health outcomes among women globally (Campbell, 2002), including a higher risk of sexually-transmitted infections (STIs), including HIV (Harvey et al., 2007; Li et al., 2014). Women are also at increased risk of IPV after HIV-infection (Mulrenan et al., 2015). In addition, IPV is linked to poor reproductive health outcomes, such as low birth weight, preterm delivery, and maternal and infant mortality (Boy and Salihu, 2004; Emenike et al., 2008). Lastly, IPV reduces the likelihood of certain HIV-related health behaviors among women, such as HIV testing and adherence to cART for the woman's own health (Hatcher et al., 2015; Siemieniuk et al., 2013). Qualitative research from South Africa also indicates that HIV-positive women often cite IPV as a barrier to PMTCT (Hatcher et al., 2014; Mepham et al., 2011). However, no studies to-date have quantitatively established a relationship between IPV and non-adherence to PMTCT in sub-Saharan Africa (Hatcher et al., 2015).

This article examines whether IPV against HIV-positive women is associated with non-adherence to cART during and after pregnancy in urban Zambia. This paper also explores whether the type, frequency, and severity of IPV differentially impact adherence to various PMTCT medication protocols. In order to create effective interventions, we need to understand both the nature of IPV, as well as its consequences (White et al., 2000). The a priori hypothesis of this study is that women with more severe and frequent IPV will have the poorest adherence to PMTCT due to their lack of autonomy and decision-making ability within the family.

2. Methods

2.1. Study design

A cross-sectional survey was conducted with postpartum HIV-positive women at a large public health center in Lusaka, Zambia, from April to August of 2014. Quantitative data were collected through a face-to-face survey with closed-ended questions on women's self-reported PMTCT adherence and gender power dynamics within their current sexual relationship. The questionnaire was pretested during a pilot study in March of 2014. Trained Zambian research assistants verbally administered the survey in the local languages on paper forms in a private location at the health center. The questionnaire was written in English, but translated into the two most commonly spoken dialects in Lusaka. Participants received a small travel reimbursement for their time. Written informed consent or a thumbprint was obtained from all participants.

The four research assistants were all individuals who had previously participated in data collection for health research and were trained health care workers. They also attended a three-day training, which included in-depth discussion of research ethics. The study was designed and implemented in accordance with the World Health Organization (WHO) Ethical and Safety Recommendations for Research on Domestic Violence Against Women (WHO, 2001). Women who reported IPV were offered referrals to the Young Women's Christian Association (YWCA) in Lusaka for counseling and victim support services. The study was approved by the Colorado Multiple Institutional Review Board (COMIRB) and the Excellence in Research Ethics and Science (ERES) Converge in Lusaka, Zambia.

2.2. Study participants

Participants were 320 HIV-positive postpartum women who had brought their infants for routine pediatric well-child care (e.g., immunizations) in the Department of Maternal and Child Health at a large public health facility in Lusaka. The health center has a catchment population of over 160,000 individuals living in the surrounding low socioeconomic neighborhoods. Women who were HIV seropositive, over the age of 18 years, currently married or living with a man, and whose youngest infant was between 3 and 9 months of age, were invited to participate in the survey after completing their health care visit. Infant age criterion was selected to capture all of the essential postpartum PMTCT protocols and limit recall bias. Routine pediatric health care in Zambia recommends infants receive immunizations and other preventative care at 14 weeks; 6 months; and 9 months. Immunization compliance is high with only 3.2% of Zambian infants having no immunizations by 12 months of life (CSO, 2014).

Nurses determined eligibility for the study using the infant's “Under-Five Card,” a mother's copy of her child's health record that she is required to bring to all pediatric health care visits and includes the child's birth date, height and weight, immunizations, medications, and PMTCT. Nurses providing immunizations examined the Under-Five Card and verbally invited eligible women to participate in the survey by proceeding to a designated room in the clinic where research assistants awaited them. The response rate for eligible women was 85%.

2.3. Measures

Questions regarding medication adherence during and after pregnancy, the main outcome of interest, were developed by the primary investigator based on Simoni et al. (2006) and the 2010