The Potential of Pre-Exposure Prophylaxis for Women in Violent Relationships

Amy Braksmajer, MPH, PhD, Theresa E. Senn, PhD, and James McMahon, PhD

Abstract

HIV and intimate partner violence (IPV) are significant intersecting threats to women's health. Women in violent relationships have few feasible HIV risk reduction options as traditional prevention methods are largely dependent on a partner's cooperation. The purpose of this review is to explore potential benefits and drawbacks of pre-exposure prophylaxis (PrEP) use among women in the United States experiencing IPV. Advantages of PrEP use in this population include the potential for covert or autonomous use, coital independence, dual protection against sexual and injection risk, and facilitated connections to social services. A number of barriers, however, may interfere with the effective use of PrEP, including partner resistance, cost, frequent medical visits, gendered norms regarding sexuality, and stigma. To realize its potential for women in violent relationships, it will be necessary to incorporate PrEP into behavioral and structural interventions that encourage uptake, facilitate adherence, ensure women's safety, and challenge existing gender norms.

Introduction

HIV AND INTIMATE PARTNER VIOLENCE (IPV) are significant intersecting threats to women's health, as reflected by President Obama's creation in 2012 of an interagency Federal Working Group to explore the intersection of HIV/AIDS, violence against women and girls, and gender-related health disparities.¹ Women in violent relationships have few feasible risk reduction options because traditional prevention methods, including female-controlled methods (e.g., the female condom), are largely dependent on a partner's cooperation.

Oral pre-exposure prophylaxis (PrEP; tenofovir/emtricitabine), approved by the FDA in 2012, holds considerable promise to overcome many of the barriers of traditional HIV prevention methods for women experiencing IPV. Current federal guidelines recommend that PrEP be considered for individuals who are both HIV negative and at high risk of contracting HIV, including heterosexual women in serodiscordant relationships, women engaging in condomless sex with a partner of unknown status who is at high risk of HIV infection (e.g., behaviorally bisexual, injection drug user), injection drug users, and sex workers.² There are, however, no guidelines for PrEP provision to women in violent relationships.

The purpose of this narrative review is to explore potential benefits and drawbacks of PrEP use that are specific to women in the United States experiencing IPV in their heterosexual relationships. We begin by reviewing the intersection of IPV and HIV risk, as well as obstacles to the use of typical female-controlled HIV risk reduction strategies for

women in violent relationships. We discuss possible benefits of PrEP use in this population, including its potential to increase women's control over HIV prevention. We then consider barriers to oral PrEP uptake and adherence among women experiencing IPV and discuss how gendered power relations might interfere with the effective use of PrEP. We conclude with recommendations for future research, public health interventions, and clinical practice.

HIV and IPV: Intersecting Public Health Epidemics

HIV continues to be an important health risk for women living in the United States, particularly women of color. In 2014, women comprised 19% of new HIV infections, the vast majority of which were acquired through heterosexual sex (87%).³ By the end of 2013, 24% of those living with HIV in the United States were women.³ Black women are disproportionately affected by HIV; they account for over 60% of women living with HIV in the United States³ and are newly diagnosed at rates ~20 and 5 times higher than white or Hispanic women, respectively.⁴ Finally, HIV is a leading cause of death for black women, ages 20–54, in the United States.⁵

IPV also poses a significant risk to women living in the United States. The 2010 National Intimate Partner and Sexual Violence Survey (NISVS) found that ~36% of women living in the United States had experienced physical violence, rape, or stalking by an intimate partner in their lifetimes.⁶ Other forms of abuse, such as emotional abuse and coercive control (e.g., monitoring and controlling a partner's behavior,

delivering threats), often accompany physical and sexual violence.⁷ The NISVS found that ~40% of women had experienced verbal aggression from an intimate partner during their lifetime, while 41% had experienced some form of coercive control by an intimate partner.⁶

IPV has been associated with increased risk of sexually transmitted infections (STIs), including HIV,^{8,9} and the rate of IPV among HIV-positive women in the United States is double that of the general population.¹⁰ Abuse may directly increase HIV risk through forced intercourse with an HIV-positive partner, and physical trauma to the genitals that may occur during sexual partner violence can directly facilitate HIV infection.¹¹ Women in violent relationships are also less likely than nonabused women to refuse sex or use condoms during intercourse.^{12–14} Women's reluctance to use condoms may stem from fear of physical or sexual violence.¹² In addition, the psychological sequelae of partner violence (e.g., depression, suicidal ideation) as well as substance abuse, which is associated with IPV victimization, have been shown to increase sexual risk taking and thus contribute to HIV infection.^{15,16} Women's risks are compounded by the fact that perpetrators of IPV are themselves at higher risk of HIV infection, being more likely than nonperpetrators to engage in HIV risk behaviors, such as partner concurrency and transactional sex,^{17–19} and to be diagnosed with a STI/HIV.^{18,20} Violent partners are also more likely to refuse condom use.¹⁷

Gendered power inequalities place women at a disadvantage in regard to safer sex negotiation and refusal of unwanted sexual activity and thus contribute to women's increased vulnerability to the intersecting harms of IPV and HIV. Wingood and DiClemente, adapting Connell's theory of gender and power,²¹ suggest that the sexual division of labor, gendered power inequalities, and social norms regarding gender, sexuality, and HIV prevention increase women's HIV risk.²² For example, the sexual division of labor results in women taking on a majority of childrearing and domestic tasks, which often leads to increased financial dependence on male partners. Furthermore, gendered social scripts regarding male control of sexual interactions and female sexual passivity can contribute to a reluctance to protect oneself against HIV as efforts to do so require a degree of sexual autonomy and agency.^{23–25} Men may view violations of these sexual and relationship norms as a threat to their masculinity and may respond with violence.²⁵ Studies also suggest that women may view male sexual and relationship dominance (including force, coercion, pressure, and/or manipulation) as typical or acceptable aspects of heterosexual relationships.^{23,24} While experiences of gendered power inequalities are not limited to women in violent relationships, violence may render women more vulnerable to these inequalities as well as increase the harmful consequences resulting from a breach of gendered sexual norms.

Disadvantages of Existing Female-Controlled HIV Prevention Methods

In principle, female-controlled risk reduction methods (e.g., female condoms, vaginal microbicides, diaphragms) may facilitate safer sex among women who lack power in their sexual relationships.^{26–28} Uptake and acceptability of such methods, however, remain low,²⁹ and partner violence may make it difficult for women to utilize female-controlled methods in

practice. For example, the use of female condoms requires partner consent because female condoms are easily detectable. Female condoms may not be feasible or acceptable in the face of partner antagonism toward, or disinterest in, this method of HIV prevention.^{30,31} Other existing female-controlled methods (e.g., nonspecific microbicides, diaphragms, and lubricant gel) have limited efficacy in regard to HIV prevention.^{32,33} Thus, there is a need to identify acceptable, feasible, and effective female-controlled HIV risk reduction methods for women in violent relationships as well as address potential barriers to uptake and adherence of these methods.

PrEP: An Effective HIV Risk Reduction Method for Women

Efficacy

PrEP use has been shown to significantly reduce HIV acquisition rates among men who have sex with men (MSM) if taken consistently,³⁴ although randomized trials of PrEP involving women have demonstrated mixed results. Two clinical trials, Partners PrEP^{35–37} and the Bangkok Tenofovir Study,³⁸ demonstrated a 66–79% reduction in HIV acquisition among women. Overall, the TDF2 study found a 62% reduction in HIV acquisition among heterosexuals, although the authors were not able to draw separate conclusions for men and women due to low statistical power.³⁹ In all trials, efficacy was positively associated with medication adherence, increasing to ≥85% for those who had detectable drug levels in blood samples.⁴⁰ Two studies of oral PrEP among women living in Sub-Saharan Africa, Fem-PrEP⁴¹ and the oral tenofovir arm of VOICE,⁴² however, did not demonstrate efficacy due to low adherence and were closed for futility.⁴⁰ Adherence may be especially important for women because more consistent dosing is required to achieve effective drug levels in vaginal tissue compared with rectal tissue.⁴⁰ Thus, there is evidence that PrEP reduces the risk of HIV infection among women when adherence is high, but additional research is needed to identify and address barriers to adherence.

Safety

PrEP has been shown to be generally safe, although there are small, but significant, risks of decreased kidney function as well as reports of bone mineral density loss.⁴³ Loss of bone mineral density may be more significant among women than men, particularly women taking long-acting contraceptives, although more research in this area is needed.⁴⁴ Regarding reproductive health, PrEP and hormonal contraception have not been shown to interfere with each other.⁴³ Although there is little research on the effects of PrEP on a fetus if a woman takes it while pregnant, data from the Partners PrEP and VOICE trials indicated no significant differences in pregnancy loss or adverse outcomes in infants (e.g., preterm birth, birth defects) in women taking PrEP compared with women taking a placebo.⁴³ Nonetheless, the Centers for Disease Control and Prevention (CDC) recommend that women take a pregnancy test before initiating PrEP and women who are pregnant consult with their doctor about potential risks. Thus, there appear to be few safety concerns specific to women taking PrEP, although it is yet unknown as to whether women who experience partner violence have specific contraindications to

PrEP use (e.g., if chronic stress induced by IPV exacerbates tenofovir-associated adverse effects).

Acceptability

Although PrEP uptake among women living in the United States has been slow,⁴⁵ evidence suggests that PrEP is at least hypothetically acceptable among women, including women experiencing IPV.^{46–48} A recent focus group study of women in six US cities found that although almost none of the participants had heard of PrEP before the study took place, many said they would use PrEP if available.⁴⁶ In a study assessing attitudes toward PrEP uptake and adherence, young adult women who experienced IPV reported greater willingness to take PrEP than those who had not. Furthermore, younger women who had experienced IPV were less embarrassed to ask healthcare providers for PrEP than younger women who had not experienced IPV.⁴⁸ These findings indicate that women in violent relationships may consider PrEP a feasible option for HIV prevention.

Advantages of PrEP for Women in Violent Relationships

Although alternative PrEP formulations (e.g., tenofovir gel, long-acting injectables, vaginal rings) are currently under development, these are not yet available in the United States. Therefore, oral PrEP is the only biomedical, female-controlled HIV prevention method currently available to women in violent relationships living in the United States. While there are a number of benefits to PrEP use for all women (e.g., safe conception, HIV risk reduction, perceptions of increased pleasure and intimacy if condom use is reduced or eliminated), PrEP has several critical advantages over other female-controlled HIV prevention methods for women in violent relationships. These include the potential for covert or autonomous use, coital independence, dual protection against sexual and injection HIV risk, and facilitated connections to social services.

Covert or autonomous use

One advantage of PrEP is that it provides protection from HIV that is not partner dependent; that is, women can use PrEP without their partners' active involvement, knowledge, or consent. Thus, PrEP protects against HIV even when a partner refuses to use a condom. Furthermore, women experiencing IPV relationships often do not request condom use due to fear of violence; covert use obviates this difficulty.

In regard to covert PrEP use, oral PrEP has an advantage over alternative PrEP formulations such as topical gels. Women may be able to use oral PrEP more discreetly than topical gels as partners may notice the extra lubrication that gels provide.^{49–51} Although little research on covert use of vaginal microbicides has been conducted in the United States, one focus group study of black women found that women were concerned that their partner would be able to tell when they had used vaginal gel due to increased lubrication.⁴⁷ As in the case with the female condom, preventive measures that produce immediate physical indicators of their use may make covert usage difficult for women in violent relationships; thus, oral PrEP may be preferable to the use of microbicide gel in this population.

Coital independence

A second advantage of PrEP is that it does not need to be taken at the time of the sexual encounter (i.e., it is coitally independent), which may be important for women in violent relationships who may not have control over when or how sexual activity takes place. Taking PrEP independent of sexual activity, therefore, may allow for consistent dosing and improved medication adherence. Furthermore, coital independence may make covert use easier because women can take it on their own schedule and in a location that is inaccessible to an abusive partner.

Dual protection against sexual and injection risk

PrEP is unique in terms of HIV prevention because it protects against HIV transmitted through both sexual contact and injection drug use; other HIV prevention options protect women only from sexually transmitted HIV (e.g., condoms) or from HIV transmitted through shared injection equipment (e.g., syringe exchanges). Violence (IPV), HIV/AIDS, and substance use frequently co-occur [i.e., SAVA (substance abuse, violence, and AIDS) syndemic].¹⁵ When the co-occurring substance use involves injection drug use, women may additionally be at risk of HIV through shared needles. Studies have demonstrated that women experiencing partner violence are more likely to inject drugs than women who do not experience partner violence,¹⁴ and women who inject drugs are more likely to engage in sex with partners who inject drugs.^{14,52,53} IPV perpetration by male injection drug users is common.^{54,55} Furthermore, abusive partners may control women's access to drugs (e.g., via control of the preparation and timing of an administered injection) and injection equipment.^{56,57} Women's HIV risk may increase if sexual compliance is required in exchange for drug access.

Beyond sexual risk, however, women experiencing IPV may incur additional injection-related HIV risk. Even in the absence of IPV, gendered power relationships help to structure women's HIV risk from injection drug use. Women who share needles are most likely to do so with intimate others such as sexual partners^{58–61} as well as those who they inject or who inject them,⁵⁹ and women are frequently injected by their sexual partners.^{62,63} When women share syringes with their partners, the male partner is generally the one who injects first.⁵⁶ Scholars have suggested that partner violence may increase the likelihood of injecting with a syringe that had been previously used by someone else.⁶⁴ Although further research is needed to assess how widespread such practices are, syringe sharing is another potential source of HIV risk for women experiencing IPV. PrEP may protect against such risks in ways that other HIV risk reduction methods cannot.

Facilitated connection to social services

A fourth advantage of PrEP use for women in violent relationships is the opportunity for connection to social services, particularly those relating to partner violence. Recommendations for PrEP include quarterly medical appointments for HIV testing and monitoring for health problems and side effects.² Although women in violent relationships could face barriers to attending such frequent appointments (as will be discussed below), PrEP providers may be well positioned to screen for and identify IPV among

their patients, as well as assist them in mitigating the harms associated with violent relationships. Given the aforementioned co-occurrence of violence, HIV/AIDS, and substance use, such providers can also make connections to additional social services (e.g., inpatient drug treatment, transitional living programs). The capacity to screen, identify, and provide service referrals to women in violent relationships might depend on clinic type (e.g., primary care practice, HIV clinic); nevertheless, the PrEP consultation could provide a unique opportunity for outreach and assistance for women experiencing IPV.

Barriers to PrEP Use Among Women in Violent Relationships

Although PrEP may reduce the risk of HIV infection for women in violent relationships and has several advantages over other currently available female-controlled HIV risk reduction methods, women in violent relationships still face barriers to PrEP uptake and adherence, including partner resistance, cost, gendered norms regarding sexuality, and stigma. These barriers need to be addressed for PrEP to become a useful HIV prevention option for women in violent relationships.

Partner resistance

If men become aware of their partner's use of PrEP, they may discourage its use or even react with physical violence. As with other HIV risk reduction methods, male partners may oppose PrEP use because they think it suggests infidelity, dishonesty, or a casual attitude toward one's partner,^{51,65–68} which may exacerbate violence for women in abusive relationships. Jealousy and anxiety about potential infidelity are precursors to IPV and have been associated with IPV-related injuries among women.⁶⁹ Furthermore, the use of female-controlled HIV prevention methods such as PrEP may indicate a woman's control over her own body (i.e., sexual autonomy), which may in turn incur a violent backlash.⁷⁰

Difficulties with covert use

Women who fear partner resistance or violence in response to PrEP may value the possibility of covert use. Little is known, however, about whether or not women in violent relationships would choose to use PrEP covertly in practice. Although many women express favorable attitudes toward other covert HIV prevention methods,^{71–73} these attitudes do not guarantee that women will keep their use of such methods secret from their partners. Little research has been conducted on this topic in the United States. In a qualitative study of microbicides for HIV prevention, the majority of men and women reported that a woman should always tell her partner about microbicide use, although women were less likely to endorse this view as the seriousness of the relationship declined. Despite voicing a number of barriers to revealing microbicide use to a casual partner, including the fear of violence, many women reported that they would tell partners they were using microbicides even in casual relationships.⁷⁴ Internationally, a study in Uganda found that although most women reported that covert use was a major advantage of female-controlled methods, less than 40% covertly used a female-controlled product after 1 week and only 22% used

the products without their partner's knowledge after 10 weeks.⁷¹ Another study of women living in South Africa, Tanzania, Uganda, and Zambia found that a major reason for disclosure of microbicide gel use was the fear of violence if covert use was discovered.⁵⁰

Covert use of oral PrEP may likewise not be practical due to the effort required to prevent detection, and continued stress incurred by fear of detection could make covert PrEP use undesirable. Concealing PrEP storage as well as taking a daily pill unobserved may be difficult. Arranging to take PrEP away from home or storing the medication at the home of a friend or family member may prevent partner discovery, but may not be practical, particularly for women whose partners restrict or monitor their movements outside the home. Furthermore, although studies have found that the short-term side effects of PrEP (e.g., nausea, stomach pain, weight loss, headache) tend to be relatively mild and infrequent,⁴³ noticeable side effects could raise a partner's suspicions.

Finally, it is recommended that individuals who are taking PrEP visit a medical provider every 3 months to be retested for HIV and to be monitored for potential health problems and side effects associated with PrEP.² Women in abusive relationships who are restricted in their movements may find such frequent follow-up difficult,⁷⁵ especially with covert use. Several studies have shown that women experiencing IPV may in fact receive more preventive services, particularly those related to sexual health (e.g., STI/HIV testing) than those not experiencing IPV.^{76–78} Given the relatively frequent follow-up required for PrEP, however, it is unclear as to whether these findings are applicable in this context.

Cost

Financial barriers may limit PrEP use among women experiencing IPV. In many abusive relationships, the male partner maintains control over household finances and/or prevents women's economic independence by limiting their ability to gain employment or education.⁷⁹ This may make it difficult for women to pay for PrEP, which is estimated to cost between \$8000 and \$14,000 per year without health insurance.⁸⁰ Many insurance programs, including Medicaid, cover some or all of the cost of PrEP; however, women who are covered under their partners' insurance plan may not be able to utilize insurance coverage if they wish to use PrEP covertly (e.g., if an Explanation of Benefits is sent to the partner as policyholder).⁸¹ Although medication assistance programs may relieve some of the cost of PrEP for economically disadvantaged women or those without insurance, these resources may not be available for women whose household income is above the maximum allowable qualifying amount.

Gendered norms regarding sexuality

Social norms regarding gender and sexuality may affect the likelihood of PrEP uptake and adherence among women in violent relationships. For example, PrEP use is stigmatized because people associate its use with having multiple partners.^{82,83} Gendered norms regarding female sexuality, such as a sexual double standard that dictates fidelity or chastity for women while encouraging male promiscuity,²³ may heighten this stigma among heterosexual women. The consequences of PrEP-associated stigma may be greater for women in violent relationships as it may increase partner

violence in reaction to discovery of PrEP use. In addition, PrEP stigma may lead to negative reactions from friends and family as the sexual double standard also suggests that women who adhere to this norm (i.e., good girls) are more worthy of respect and protection compared with those who do not.²³ The potential loss of external social supports due to PrEP use may be particularly problematic for women experiencing IPV because partners who are violent often attempt to isolate their partners from such supports.^{84–86}

Discussion

Women in violent relationships, who are at increased risk of HIV infection, are in need of female-controlled HIV prevention methods. PrEP may be a useful female-controlled risk reduction option in this population. Despite the benefits of PrEP, women in violent relationships face barriers to PrEP uptake and adherence, including partner resistance, difficulties with covert use, cost, and gendered norms regarding sexuality. Many of these barriers are similar to barriers associated with other female-controlled risk reduction methods, illustrating women's difficulties in becoming empowered to take control of their sexual health. Nevertheless, PrEP has several advantages for women experiencing IPV, including its ability to be used without partner involvement or consent, coital independence, protection against multiple routes of HIV transmission, and facilitated connections with social services.

Future research

PrEP has the potential to transform the risk reduction landscape for women in violent relationships. However, additional research is necessary before PrEP's potential for women in violent relationships can be realized. First, research is needed to explore women's perspectives on and experiences with PrEP to identify potential additional barriers to PrEP uptake and adherence and to describe methods to overcome barriers to PrEP usage among women in violent relationships. Future research is also needed to assess the efficacy, acceptability, and long-term safety of alternative means of PrEP delivery that would facilitate ease of use for women in violent relationships. Some of the barriers identified in this article, particularly those associated with covert PrEP use, may be overcome with alternative formulations, such as long-acting injectables (although barriers related to the need for frequent clinic visits would remain).

Implications for public health interventions

Intervention research may identify promising behavioral interventions that focus on the reduction of IPV and HIV incidence, incorporating PrEP as a vital component. Although biomedical interventions may address women's immediate prevention needs, they do not address social constructions of gender that increase women's HIV risk;⁸⁷ thus, behavioral interventions might also encourage critical reflection on gender and sexual norms, gendered power inequalities, and the ways that these contribute to IPV and HIV risk.

Integrating structural components into behavioral interventions that include PrEP use may increase instrumental and affective support for women's choices, which could reduce barriers to care and increase PrEP uptake and adherence. For example, efforts toward making PrEP more financially ac-

cessible for women experiencing IPV might include health insurance policies that maximize privacy for dependents, ensuring that women experiencing IPV can confidentially access healthcare. Furthermore, medication assistance programs should be available to women who may not be able to access insurance due to fears of violence. Ideally, integrated biomedical, behavioral, and structural interventions would not only reduce the risk of acquiring HIV but would also facilitate empowerment on multiple levels, potentially reducing women's vulnerability to violence and helping them to lead healthier and more fulfilling lives.

Implications for clinical practice

The potential use of PrEP for women in violent relationships raises several important considerations for clinical practice. Provider-initiated conversations regarding PrEP may be warranted with women in abusive relationships who are not able to protect themselves through other means (e.g., condom use, refusing sexual activity), particularly if they fall into a high-risk category.

Before this can take place, however, providers must be able to routinely screen for IPV as part of HIV prevention screening. Routine screening for IPV can be difficult in the absence of guidelines that allow providers to identify IPV and assess its relationship to a woman's risk of acquiring HIV. Even where guidelines are in place, however, provider adherence to those guidelines may be challenging. For example, in a survey of providers at HIV counseling and testing sites in New York State, where IPV screening of individuals testing positive for HIV was mandated in 2001, screening was unstandardized and sporadic, despite providers' awareness of screening requirements.⁸⁸ In addition to absent or poorly implemented guidelines for providers, barriers to IPV screening can include overburdened staff, lack of private screening space, lack of reimbursement for services, and lack of adequate staff training.^{89,90} There is a strong need to develop clinical protocols and provider education regarding PrEP and the intersection of HIV and IPV, as well as clinic policies that enable IPV screening provision during HIV counseling and testing.

Limitations

The purpose of this article was to discuss the potential utility of PrEP to reduce HIV risk for women in violent relationships. We note several caveats to our work. First, this article is not a systematic review of PrEP barriers and use among women in violent relationships; therefore, there may be additional studies that shed light on potential barriers and benefits of PrEP use among women experiencing IPV. Second, this article exclusively focused on women experiencing IPV. MSM in violent relationships may also benefit from PrEP use. However, MSM may face different barriers to PrEP use than heterosexual women (e.g., different gender and sexual dynamics; internalized homophobia and concealment of sexual orientation);⁹¹ therefore, we believe a separate discussion of PrEP for MSM in violent relationships is warranted.

Finally, our review was limited, in that there is little available evidence specific to the intersection of IPV and PrEP. While we drew on evidence related to other female-controlled methods (e.g., vaginal microbicides) to speculate on issues that might be related to feasibility and acceptability of PrEP use among women in violent relationships, these might not be directly

comparable. Furthermore, little research has been conducted regarding partner resistance and covert use of female-controlled HIV prevention methods among women living in high-income countries (e.g., the United States). Although we drew on evidence from the global South to suggest potential difficulties related to these issues, women in these countries may possess different levels of social and political agencies, making comparisons inadvisable. We hope, however, that this review provides a useful starting point for considering PrEP use in this vulnerable population.

Conclusions

Women who experience IPV are at increased risk of acquiring HIV.^{8,9} Female-controlled risk reduction methods, although initially hailed as a means of sexual empowerment for women with limited HIV risk reduction options, are problematic in regard to feasibility, effectiveness, and acceptability. Although PrEP has advantages over other female-controlled risk reduction methods for women in violent relationships, factors that increase abused women's risk for HIV such as gendered power inequalities are also impediments to the adoption of PrEP. To realize its potential for women in violent relationships, it will be necessary to incorporate PrEP into behavioral and structural interventions that encourage uptake, facilitate adherence, ensure women's safety, and challenge existing gender norms. Such comprehensive approaches will be vital to reducing HIV risk among women in violent relationships.

Author Disclosure Statement

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Address correspondence to:
 Amy Braksmajer, MPH, PhD
 University of Rochester School of Nursing
 255 Crittenden Boulevard
 Rochester, NY 14642

E-mail: amy_braksmajer@urmc.rochester.edu