Does intimate partner violence affect the acceptability of expedited partner therapy?

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DOES INTIMATE PARTNER VIOLENCE AFFECT THE ACCEPTABILITY OF EXPEDITED PARTNER THERAPY?

by

Suzanne E. Beck

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Abstract

Background: Studies have identified associations between intimate partner violence (IPV) and elevated risk of sexually transmitted infections (STI). An estimated 6% of women in the United States have experienced physical and/or sexual assault inflicted by an intimate partner in the previous year. Of those with an STI, chlamydia is disproportionately reported for women. In 2009, New York State legalized Expedited Partner Therapy (EPT) for chlamydial infections; however clinicians are lacking guidance with respect to appropriate use of EPT when IPV is a concern.

Objectives: To detect associations between IPV and female opinions regarding EPT.

Methods: Study participants were women receiving health services at an urban Upstate NYS health center who completed a self-administered questionnaire. Exposure to IPV within the past year was measured by the composite abuse scale (CAS). Recent IPV was defined by a CAS score >3 and all others were defined as no recent IPV exposure.

Results: Among 260 respondents, 130 (50%) reported recent IPV. Compared to women with no recent IPV, those recently exposed were more likely to report >1 current sex partner (p<0.001), more likely to agree they had at least one partner they would not trust to give them a prescription to treat an STI [prevalence ratio (PR) = 2.8, 95% Confidence Interval (CI) = (1.7, 4.6)] and less likely to agree that it is okay for a doctor to give an STI-infected patient a written prescription with the name of his or her sexual partner (PR = 0.7, 95% CI = 0.5-0.9).

Conclusions: Differences in the acceptability of EPT exist between women recently and not recently exposed to IPV. These findings suggest that women experiencing IPV are less likely to view EPT as beneficial. Partner management strategies should be developed in the context of IPV risk assessment, and guidance should be provided to clinicians in this regard as EPT is implemented and at a minimum, prescriptions with a specific notation of “EPT” in lieu of a person’s name should be distributed for EPT.
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Introduction

In New York State (NYS), infection with *C. trachomatis* is the most commonly reported communicable disease. The number of cases reported annually has doubled since the condition became reportable in NYS in August 2000 (1). In 2009, over 33,000 cases of chlamydia were reported in NYS, excluding New York City (NYC), and young women are disproportionately represented. The chlamydia case rate for females residing in NYS, excluding NYC, in 2009 was 427.1 per 100,000 population with females aged 15-19 and 20-24 having the highest per capita chlamydia rates (2619.9 and 2775.5 per 100 000 population, respectively) (1). National data reflect this case distribution with over 1.2 million cases reported across the United States (US) in 2009; females aged 15-19 and 20-24 had the highest chlamydia rates (2754.5 and 2687.8 per 100 000 population, respectively) (2).

Research has demonstrated a clear association exists between intimate partner violence (IPV) and risk factors for sexually transmitted infections (STI). This association is, in part, due to sexual coercion and decreased sexual and condom negotiation practices (3-7). An estimated 36 percent of US women have experienced physical violence and/or sexual assault inflicted by an intimate partner, with an estimated 7 million women assaulted annually (8). The magnitude and frequency of IPV varies and may include one or more forms of abusive behavior including emotional, physical, sexual, or threatening acts (9).

Available resources to prevent the spread of STIs are limited, and control efforts are further complicated by the high prevalence of IPV among women. Traditional approaches to controlling STIs, including chlamydia, focus on risk reduction counseling and treating sex partners of infected patients to prevent re-infection (10, 11). However, the high morbidity coupled with a persistent scarcity of resources in health departments limits the number of partners that are contacted and referred for medical evaluation and treatment (12, 13). Expedited Partner Therapy (EPT) is defined as the practice of treating the sex partners of STI-infected patients by providing the infected patient with a prescription or medication to give to his or her partner, without the
partner receiving a medical evaluation. This method of STI control has been recommended by the Centers for Disease Control and Prevention (CDC) as a way to increase the number of treated sex partners and reduce the burden of STI control on health departments (14). In 2009, NYS passed legislation to legalize EPT for chlamydial infections by allowing physicians to provide index patients with prescriptions for their sexual partners. Several studies have examined the acceptability of EPT among providers, health departments and patients (15-17). These studies have shown that opinions of EPT vary among stakeholders and have highlighted the perceived limitations of EPT which include lost opportunities for risk reduction counseling and diagnosing co-infections, side effects, the potential for medication not reaching partners, and malpractice risk (16, 17). Factors associated with a positive opinion of EPT in patients are not well described and there is no guidance regarding the use of EPT when IPV is a concern.

1 Background

1.1 Biology, epidemiology, transmission, and prevention of Chlamydia trachomatis

1.1.1 What is Chlamydia

Chlamydial organisms that are associated with human disease include Chlamydia psittaci, C. trachomatis, and C. pneumoniae (18). The chlamydiae organism is an intracellular bacterium with a growth cycle unique from all other microorganisms; a cycle that involves two distinct morphological forms, the elementary body and reticulate body (19). The elementary body form is responsible for transmission from the host and the reticulate body is involved in bacterial replication and growth. Chlamydiae contain both DNA and RNA with genome transcription, protein synthesis, and genome replication occurring within the reticulate body. Bacterial replication is initiated upon exposure to host target cells wherein the bacterium, in elementary body form, enters the host cell by inducing endocytosis. In the intracellular environment, the bacterium undergoes a morphological change into a reticulate body followed by
cellular replication and ultimately, binary fission that results in two elementary bodies released from the host cell through exocytosis. The entire process from host cell entry to release takes an estimated 48 to 72 hours (19). The incubation period of *C. trachomatis* in humans is poorly defined because many infections remain subclinical, but it is thought to be one week to three weeks or longer in symptomatic individuals (18-20).

### 1.1.2 Clinical Manifestations of *C. trachomatis*

*C. trachomatis* is well recognized as a sexually transmitted pathogen responsible for a variety of clinical conditions in both males and females. In the US, the clinical manifestation most commonly observed in symptomatic men is urethritis; infection can also lead to sequelae including epididymitis, Reiter’s Syndrome, and acute proctitis (more commonly seen among men who have sex with men but can occur also occur among females), (19). The most frequently observed symptom among infected women is an endocervical mucopurulent discharge; however, infection among women is more frequently asymptomatic, causing clinicians to rely on screening tests to identify disease (10, 20). Untreated infection in women can lead to serious complications including pelvic inflammatory disease (PID), ectopic pregnancy, and infertility (19, 21). Infection during pregnancy carries the risks of preterm delivery and conjunctival and pneumonic infection of the neonate. As with other inflammatory STIs, chlamydial infection can facilitate the transmission of human immunodeficiency virus (HIV) (22, 23).

### 1.1.3 Global Chlamydia Epidemic

Worldwide, the clinical effects of *C. trachomatis* affect a much larger proportion of the population. One of the sequelae, trachoma, is a condition that affects the eyelid and cornea. It is rarely seen among industrialized populations and is a common cause of blindness (19, 24). The World Health Organization estimates that 140 million people are affected by trachoma and six million are blind due to infection, with the highest prevalence seen among rural populations in
Africa, the Middle East, Central and South-East Asia, and certain Latin American countries. This condition is more common among women (24).

1.1.4 Chlamydia Screening

Diagnostic testing for *C. trachomatis* is available for use on endocervical and vaginal swab specimens collected from women, urethral swabs collected from men, and urine specimens collected from symptomatic and asymptomatic women and men. Nucleic acid amplification tests (NAATs) are currently the most sensitive diagnostic tests, and offer a number of advantages: they are widely available, can concurrently detect *Neisseria gonorrhoeae* infection, and are generally affordable. Most tests are not federally approved for use with rectal and pharyngeal specimens, possible anatomical sites of infection for those who engage in receptive anal intercourse or oral sex. Thus, physicians must rely on chlamydia culture to identify infection in extragenital sites (10).

Higher reported rates of chlamydia among women can be attributed to federal screening programs that target funds for screening women but not men. These programs were established due to the asymptomatic nature of *C. trachomatis* infection and risk of severe sequelae in women (21). Also, young women going through puberty are physiologically more susceptible to infection due to the increased number columnar epithelial cells on the surface of the cervix, resulting in a greater surface area susceptible to infection (19). The CDC recommends all sexually active women less than 26 years of age and those with certain other risks receive annual chlamydia screening. Screening among sexually active men is recommended for those seeking services where chlamydia prevalence is high (10).

1.1.5 Treatment for chlamydial infection

Treatment guidelines published by the CDC focus on prompt treatment of chlamydia-positive patients to prevent transmission and treatment of all sex partners to prevent reinfection of
the original patient. The recommended single dose regimen of azithromycin eliminates issues related to treatment compliance with relatively few side effects (10). Alternative regimens to treat chlamydia are available and antibiotic resistance is not currently an issue (25-27). Penicillins and cephalosporins are not effective against chlamydia and a vaccine to prevent infection is not available (10).

1.1.6 Chlamydia prevention

To reduce the burden of STIs, including chlamydia, public health activities concentrate on two main primary prevention activities: preventing transmission and preventing reinfection. Complicating these efforts is the fact that persons exposed to STIs are often unaware of an infection and can unknowingly spread infection to others. Partner Services is an evidence-based public health intervention that can help break the chain of infection through an array of services that endeavor to assure evaluation and treatment of all sexual partners (10-11). Partner service specialists are trained to discuss personal medical information and behavioral risk reduction strategies with patients; specialists are qualified to identify patient needs and ensure linkage to care, when appropriate, as well as offer other services such as referrals to treat substance abuse, mental health services, or housing assistance. In addition to resource-limited health departments and the high prevalence of STIs, barriers to providing comprehensive partner services include patient acceptance of services and fear of retaliation by partners after notification (28, 29). Partner notification is not recommended when the risk of IPV is present (11).

1.2 Expedited Partner Therapy

1.2.1 Expedited Partner Therapy to Prevent Chlamydia

In 2006, the CDC published “Expedited Partner Therapy in the Management of Sexually Transmitted Diseases, Review and Guidance.” This guidance document provides rationale for
EPT, summaries of the research on EPT, implementation and other issues around EPT, and finally, recommendations for EPT eligibility (14). Few studies on the efficacy of EPT to prevent patient reinfection had been published prior to CDC making recommendations that EPT should be legalized at the State level and employed as a tool to control chlamydia and gonorrhea among heterosexual men and women. The main body of EPT research cited in the guidance document comprised four randomized controlled trials (RCTs) funded by CDC (30-33). Results of two of these RCTs failed to show statistically significant associations between EPT and a follow-up negative test for chlamydia among female patients when compared to traditional partner referral (30, 31). Neither of the remaining two RCTs investigated EPT use for partners of women with chlamydial infection (32, 33).

1.2.2 Cost effectiveness of Expedited Partner Therapy

Cost-effective analyses of EPT have yielded varied results with EPT shown to be less costly than traditional partner referral when the associated costs of prevented sequelae are included in the models (34, 35). EPT was estimated to be more expensive than traditional partner referral when public health expenditures, such as personnel costs, were considered (35).

1.2.3 Expedited Partner Therapy Considerations

Several issues related to implementing EPT have been identified. First, data are lacking on EPT use among men who have sex with men (MSM), adolescents, and pregnant women (14). NYS law does not permit EPT to treat partners of patients infected with C. trachomatis among MSM or those co-infected with gonorrhea or syphilis. Although NYS law does not exclude adolescents from EPT eligibility, NYS guidance advises EPT is not the preferred method to manage adolescent sex partners. NYS guidance also advises against EPT in cases where child abuse or sexual abuse is suspected or the patient’s safety may be at risk (36).
Second, potential missed opportunities to diagnose and treat co-morbid STIs in partners have been identified as barriers to the acceptability of EPT (16, 17, 37). In a study conducted by Steckler, et al., co-infection with gonorrhea, HIV, syphilis, or trichomoniasis was identified in 4.5 percent of sex partners of patients diagnosed with chlamydia only (37), indicating that if EPT had been provided to these partners, an arguably significant number of partners would not have been correctly diagnosed nor provided adequate treatment or referral for care. This study also identified PID in 3.7 percent of female sex partners to patients diagnosed with chlamydia. This finding prompted the authors to recommend that EPT for female partners should include information on symptoms of PID and guidance on the need to seek care if any symptoms exist. NYS requires health education materials be provided in conjunction with EPT; however, the NYSDOH-developed education material for partners does not specifically list signs of PID (38).

In addition to missed opportunities to identify co-infections in partners, missed opportunities to provide prevention counseling to partners represents a barrier to provider acceptance of EPT (17). Methods to overcome the missed opportunities for prevention counseling include the following recommendations: provide the prevention messages with health education materials, as NYS does (14, 36) or utilize the pharmacist to provide prevention messages at the point of medication retrieval (14).

Third, antimicrobial resistance and possible adverse effects related to EPT-delivered medications have also been cited as barriers to implementing EPT (14). The recommended treatment for chlamydial infection and prophylactic treatment of partners is one gram of azithromycin, a macrolide antibiotic, which is available as a single dose regimen with relatively few side effects (10). While case reports in the literature have documented reduced Chlamydia trachomatis antimicrobial susceptibility to azithromycin (25, 26), evidence has also shown reduced infectivity of chlamydiae organisms that carry macrolide resistance (26). Additionally, K Hong, et al., examined the development of C. trachomatis resistance following four biannual community-wide trachoma treatment campaigns and found no significant increase in
antimicrobial drug resistance against azithromycin or doxycycline (27). While the emergence of antimicrobial resistance in *Neisseria gonorrhoeae* is a major public health concern (10, 39, 40), NYS law does not allow EPT for sex partners to gonorrhea patients.

1.3 Intimate Partner Violence

1.3.1 Prevalence of Intimate Partner Violence

The National Intimate Partner and Sexual Violence Survey, 2010 Summary Report (NISVS 2010) defines IPV as physical violence, sexual violence, stalking, and psychological aggression (including coercive tactics) perpetrated by a current or former intimate partner (3). IPV is considered a highly prevalent public health problem and the health consequences of IPV can be severe. Women are disproportionately affected by IPV and among the 70% of women who have been victimized, the first incident was experienced before 24 years of age (3). The NISVS 2010 estimates 42.4 million, or 36 percent of U.S. women, have experienced some form of IPV at least once in her lifetime and close to 7 million or 6 percent of women have experienced a form of IPV within the 12 months preceding survey administration.

While women of any age, race or ethnicity can be a victim of IPV, the burden of IPV is disproportionately distributed across racial and ethnic groups. The estimated prevalence of lifetime IPV is highest among non-Hispanic multiracial women (54 percent), followed by 46 percent of American Indian or Alaskan Native non-Hispanic women, and 44 percent of black non-Hispanic women (3). Factors associated with IPV history include young age, pregnancy, mental health problems, alcohol or substance abuse by victim or perpetrator, acceptance of violence, history of childhood abuse, and low income. Women are 7 to 14 times more likely than men to be severely injured from an intimate partner.
1.3.2 Screening for Intimate Partner Violence

The U.S. Preventive Services Task Force (USPSTF) most recently published screening recommendations for family and intimate partner violence in 2004 (41). These recommendations were based on a systematic evaluation of available literature and cite insufficient evidence to recommend for or against routine screening of women for IPV. The task force also found limited evidence that interventions reduce harm to women and found no studies that evaluated possible negative consequences of screening and intervention for IPV. In contrast, several professional medical societies including The American College of Obstetricians and Gynecologists and the American Medical Association recommend universal IPV screening of all women (42, 43). Advocates of IPV screening cite the high prevalence of IPV among women and severe impact and outcomes of IPV as rationale for screening (42-44).

1.3.3 Cost of Intimate Partner Violence

An estimated 5.8 billion dollars per year is spent on IPV-related costs with approximately two-thirds of the total cost spent on healthcare (45). Death is the most serious consequence of IPV. In the U.S. 64 percent of female homicide victims were killed by a male intimate partner in 2008 (46). Physical harm can result in serious injury, hospitalization, disfigurement, disability, and chronic pain. Mental health consequences of IPV can lead to depression, anxiety, and low self-esteem, substance abuse, and suicide attempts. Victims of IPV are also at risk for acquiring STIs, HIV and gynecological or pregnancy-related complications (5, 6, 42-44).

1.3.4 Intimate Partner Violence Prevention

Historically, a large portion of IPV prevention resources have been dedicated to secondary forms of prevention such as supporting victims by providing shelter and legal services and thereby preventing further victimization (47). It is acknowledged that effective primary prevention strategies are lacking and evidence-based strategies to prevent violence before it
occurs are needed (47, 48). These strategies need to address the individual, community, and societal factors that are associated with perpetrating violence and becoming a victim of violence. One evidence-based primary prevention strategy targeted at the individual level is the use of school-based programs to promote healthy dating relationships and violence awareness among adolescents (47). Community and societal prevention should aim to reduce gender inequality and the acceptance of violence, while increasing awareness of risks for IPV and criminalizing violent acts against women (45-48).

1.4 Study Objectives

The objectives of this study are to describe the acceptability of EPT among women receiving health services in an urban community health center, assess associations between IPV and the woman’s opinions of EPT, and identify factors that may influence the acceptability and uptake of EPT.

2 Journal Article

Introduction

In New York State (NYS), infection with *C. trachomatis* is the most commonly reported communicable disease and the incidence has doubled since the condition became reportable in NYS in August 2000 (1). In 2009, over 33,000 cases of chlamydia were reported in NYS, excluding New York City (NYC), and young women are disproportionately represented. The chlamydia case rate for females residing in NYS, excluding NYC, in 2009 was 427.1 per 100,000 population with females aged 15-19 and 20-24 having the highest per capita chlamydia rates (2619.9 and 2775.5 per 100 000 population, respectively) (1). National data reflect the same case distribution (2). Available resources to prevent the spread of sexually transmitted infections (STIs) are limited, and control efforts are further complicated by the high prevalence of intimate
partner violence (IPV) among women. A new strategy to expand outreach and treatment for STIs has not been studied in some at-risk subpopulations, such as women who are living with the threat of IPV.

Research has demonstrated a clear association exists between IPV and risk factors for STI. This association is, in part, due to sexual coercion and decreased sexual and condom negotiation practices (5-9). An estimated 36% of US women have experienced physical violence and/or sexual assault inflicted by an intimate partner, with an estimated 7 million women assaulted annually (3). The magnitude and frequency of IPV varies and may include one or more forms of abusive behavior including emotional, physical, sexual, or threatening acts (4).

Traditional approaches to controlling STIs, including chlamydia, focus on risk reduction counseling and treating sex partners of infected patients to prevent re-infection (10, 11). However, the high morbidity coupled with a persistent scarcity of resources in health departments has limited the number of partners who are contacted and referred for medical evaluation and treatment (12, 13). To expand STI control despite budget constraints the Centers for Disease Control and Prevention (CDC) introduced recommendations for a new strategy to contain STI incidence in 2006. “Expedited Partner Therapy” (EPT) is defined as the practice of treating the sex partners of STI-infected patients by providing the infected patient with a prescription or medication to give to his or her partner, without the partner receiving a medical evaluation. Theoretically, this strategy would increase the number of treated sex partners and reduce the burden of STI control on health departments (14).

In 2009, NYS passed legislation to legalize EPT for chlamydial infections by allowing physicians to provide index patients with prescriptions for their sexual partners. Several studies have examined the acceptability of EPT among providers, health departments and patients (15-17). These studies have shown that opinions of EPT vary among stakeholders and have highlighted the perceived limitations of EPT which include lost opportunities for risk reduction counseling and diagnosing co-infections, side effects, the potential for medication not reaching
partners, and malpractice risk (16, 17). Factors associated with a positive opinion of EPT in patients are not well described and there is no guidance regarding the use of EPT when IPV is a concern. While the strategy was accompanied by several studies highlighting limited success, some continue to question its efficacy in practice, particularly among vulnerable subpopulations such those victimized by IPV. This study assesses the acceptability of EPT among NYS women, and stratifies findings according to reported history of IPV.

Materials and Methods

Study participants were women receiving health services at an urban community health center located in Upstate New York. Participants were asked to complete a self-administered questionnaire that collected patient information and opinions on general health, sexual health, health policy, and patient demographics. The questionnaire was administered from October 2007 through January 2008. Patients were approached by a researcher in the health center waiting area, told the survey was voluntary and anonymous, and assured that refusal to participate would not affect the healthcare received. The study protocol was approved by the State University of New York Institutional Review Board.

Clinic confidentiality policy would not allow us to know the number of women eligible for the study. Anecdotally, participation proportion was high (ie, >70%), similar to previous studies at this site.

IPV among participants was measured using the composite abuse scale (CAS), a validated series of 31 questions intended to comprehensively evaluate IPV (49). A CAS score was assigned to each female participant based upon survey responses; three levels of IPV were assigned: a cumulative CAS score of ten or greater was considered high level IPV, a cumulative CAS score range of four though nine was considered lower level IPV, and a cumulative CAS score of three or less was considered no IPV. The acceptability of EPT was assessed by 10 EPT-
related questions with scaled Likert response options: “Strongly agree,” “Agree,” “Neither agree nor disagree,” “Disagree,” or “Strongly disagree.”

Bivariable measures of association between patient demographics and recent IPV (within past 12 months) were tested using the Chi-square and Fisher’s exact tests. Adjusted prevalence ratios (aPR) were obtained using multivariable log binomial models. Reported patient demographics found to be associated (p≤0.05) with unfavorable opinions of EPT using stratified bivariable analysis were included in multivariable models. Data were analyzed using SAS version 9.1 (SAS Institute, Carey, NC).

Results

Of the 298 women who completed the questionnaire 294 answered the IPV assessment section. Women reporting no lifetime intimate partners (n=24) or same sex only intimate partners (n=10) were excluded from analysis because they are not considered at risk for C. trachomatis infection. Thus, 260 women were included in the analyses.

Participants (N=260) were aged 18-45 years; the majority reported being Black or African American (69 percent), 47 percent reported never being married, and close to 70 percent reported having at least a high school equivalency degree or better. Sixty percent reported having more than one current intimate partner (Table 1).

Recent exposure to IPV (within the last 12 months) was reported by 50 percent of eligible study participants: 31 percent reported a high level and 19 percent reported a lower level of IPV. Statistically significant differences of EPT opinions were not seen between those with a high level and low level of IPV exposure so the two groups were combined to create one IPV exposure category (data not shown). Women exposed to recent IPV were statistically more likely to report more than one current intimate sex partner when compared to women not exposed to IPV in the last year (p<0.001) (Table 1).
Bivariable analysis revealed that women recently exposed to IPV were less likely to strongly agree or agree with the opinion that “it is okay for a doctor to give someone with an STI a written prescription for his or her sexual partner (with the partners name on it)” (PR = 0.7, 95% Confidence Interval (CI) = 0.5-0.9). (Table 2) Strongly agreeing or agreeing with the opinion “there is at least one partner in the past year who I would not trust to give me a prescription with my name on it” was statistically associated with recent exposure to IPV (PR 2.8, 95% CI 1.7-4.6). Additional measured opinions of EPT were not identified to have statistically significant associations between recent IPV; however, women with recent exposure to IPV consistently had different opinions toward EPT than women not recently exposed (Table 2).

Log binomial regression analysis, adjusted for potentially confounding variables, demonstrated that the association remained significant between recent IPV exposure and strongly agreeing or agreeing with the opinion “there is at least one partner in the past year who I would not trust to give me a prescription with my name on it” (aRR 3.2, 95% CI 1.5-6.9).

Discussion

Since its introduction in 2009, EPT is now permissible in 33 states and its availability continues to expand (50). While the CDC provided substantial guidance on implementation, it is unfortunately deficient with respect to IPV victims. The purpose of this study was to ask women seen in medical settings about their perspectives on aspects of EPT, and to determine if partner violence victims have concerns that differ from women with no history of abuse. Increasing evidence indicates that sexual coercion and control within abusive relationships increases the risk for STIs among females (5-7) thus necessitating improved knowledge on the dynamics of novel STI prevention efforts in the context of IPV. To date, this study is the first to evaluate how IPV affects the acceptability of EPT among women.

Study findings show that important differences in the acceptability of EPT exist between women recently exposed to IPV and women not abused. While only 40 percent of women in this
study strongly agree or agree that it is acceptable for a doctor to give someone with an STI a written prescription for his or her sexual partner with the partner’s name on it, women recently exposed to IPV were significantly less likely to find this practice acceptable. In situations where the index patient is a male IPV perpetrator, providing a prescription labeled with his partner’s name to treat a stigmatizing condition such as chlamydia, could potentially provide the perpetrator with an additional mechanism to coerce his partner and enhance his level of control.

In this study, women recently exposed to IPV were significantly more likely than women not recently exposed to have the opinion that at least one partner in the past year would not follow through and provide the prescription with her name on it. This finding suggests that among women exposed to IPV, a group of women already at increased risk for an STI (5-7), would be less likely to benefit from EPT. Taken together, these results highlight the need for investigation into the idea that providing a prescription to a male IPV perpetrator could place a vulnerable woman’s health and privacy in the hands of an abuser and in doing so provide a mechanism for the abuser to adversely manipulate his partner.

Some limitations to the generalizability of these findings include the use of a NYS urban community-based health center patient population which comprised predominantly non-married African American women. However, the findings are consistent with studies that found perpetrators use multiple methods to control the victim’s life (3, 5, 51). Because recent IPV was determined from self-reporting of events that occurred over the past year, social desirability and recall biases may affect these data. These biases, however, would likely involve underreporting of IPV and are unlikely to substantially bias the estimated associations between IPV and the acceptability of EPT.

Findings from this study reveal three themes: 1) fewer than half of women surveyed find it acceptable for a physician to give someone with an STI a prescription for his or her sexual partner with the partner’s name on it; 2) one quarter of women believe there is at least one former partner who would not give her the prescription; and 3) the majority of women surveyed would
see a physician for evaluation and treatment if presented with a patient-delivered prescription. The acceptability of EPT differs among women with recent IPV exposure when compared to women not recently exposed. STI prevention programs should take IPV into account when developing policies and regulations around EPT. At a minimum, prescriptions with the notation of “no name” or “EPT” in lieu of a person’s name should be distributed for EPT. Using named prescriptions for individuals not seen by the health care provider may translate to supplying IPV perpetrators with another weapon to utilize against their victims.
3 Epidemiologic Considerations

3.1 Study Design Discussion

This cross-sectional study sought to examine the relationship between exposure to IPV and outcomes or opinions of EPT among women during a visit to a federally-qualified health center. The study was carried out to inform health policy planners about aspects of EPT that had not been previously defined in NYS.

All women attending the clinic were asked to complete the questionnaire regardless of reason for visit or demographic characteristic. Because cross-sectional studies assess current disease or outcome status (prevalence) in relation to current exposure status during a specific point in time, the defined outcomes in this study were current EPT opinions and the exposure was defined as IPV experience in the last 12 months.

3.2 Temporality

All research study methods have advantages and disadvantages, however, cross-sectional studies are subject to limitations that can make them less scientifically rigorous than other study designs. The lack of ability to deduce the temporal sequence of exposure and outcome is one of the most important limitations of cross-sectional studies. Uncertainty around timing of exposure and outcome makes it difficult to support the hypothesis that exposure to IPV affects the women’s opinions on EPT. However, because EPT is a relatively new concept about which most are likely unaware, it is unlikely that these participants had established opinions on EPT at the time the questionnaires were completed.

3.3 Validity

This study compared outcome frequencies among those recently exposed to IPV and those not recently exposed by estimating relative measurements of association, i.e. prevalence
ratios. Unlike absolute measurements of association, relative measurements of association describe the strength of the causal relationship between exposure and disease and are subject to bias, confounding, and random error such that studies must be assessed for validity and precision in order to conclude the measured associations are true.

3.3.1 Observation or Recall Bias

Observation or recall bias introduced by relying on the self-reporting of IPV may have led to misclassification of exposure status among study participants. Although the method used to assess IPV in this study, the composite abuse scale, has been evaluated for validity and reliability (41), the possibility remains that potentially embarrassing questions or questions that do not fit within societal norms will not always be answered truthfully, resulting in under estimates of exposures. Conversely, this study identified a higher prevalence of recent IPV among women than among the general population, suggesting exposure misclassification may have occurred or the prevalence of recent IPV in this study population is higher than the general population. The latter scenario is likely. Our study population had a set of risk factors making the women more likely to have experienced IPV: predominantly non-married, African American, female patient population from an urban, community-based health center located in a low-income area (3, 42).

3.3.2 Selection Bias

While all patients attending the health center during the study period were eligible to participate in the study, it is unknown to the study investigators how many refused participation, and the characteristics of these non-responders are unknown. This lack of information makes it impossible to detect differences between participants and non-participants and therefore to assess the presence of possible selection bias in this study.
3.3.3 **Confounding**

Comparison of characteristics between the exposed and unexposed groups indicated women exposed to recent IPV were more likely to report greater than one current intimate sex partner than women not recently exposed to IPV. The two groups did not significantly differ by any other characteristic measured. These findings suggest confounding factors did not influence the measures of association in this study. Based on known risks for exposure to IPV and to adjust for possible confounding, multivariable models included age, race/ethnicity, marital status, level of education, health care insurance status, the number of intimate partners within the last year, and self-reported assessment of general health.

3.3.4 **Conclusion**

Relatively small sample sizes among sub-categories of study participants yielded relatively wide confidence intervals for adjusted prevalence ratios. Nonetheless, bivariable and multivariable analyses indicate differences in the acceptability of EPT exist between women recently exposed to IPV and women not abused. Additionally, this study suggests that abused women may be less likely to benefit from EPT. STI prevention programs should take IPV into account when developing policies and regulations around EPT. At a minimum, prescriptions with a specific notation of “EPT” in lieu of a person’s name should be distributed for EPT. Using named prescriptions for individuals not seen by the health care provider may translate to supplying perpetrators of IPV with another weapon to utilize against their victims.
4 References


39. Cephalosporin Susceptibility Among Neisseria gonorrhoeae Isolates, United States, 2000-2010. MMWR July 8, 2011 / 60(26);873-877

40. Neisseria gonorrhoeae with Reduced Susceptibility to Azithromycin-San Diego County, California, 2009. MMWR May 13, 2011 / 60(18);579-581.


Table 1. Characteristics of Study Participants

<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>All respondents</th>
<th>IPV* in last year</th>
<th>No IPV in last year</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (percent)</td>
<td>N (percent)</td>
<td>N (percent)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>260 (100.0)</td>
<td>130 (50.0)</td>
<td>130 (50.0)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td>0.314</td>
</tr>
<tr>
<td>18-25</td>
<td>79 (30.6)</td>
<td>45 (57.0)</td>
<td>34 (43.0)</td>
<td></td>
</tr>
<tr>
<td>26-35</td>
<td>85 (33.0)</td>
<td>41 (48.2)</td>
<td>44 (51.8)</td>
<td></td>
</tr>
<tr>
<td>36-45</td>
<td>94 (36.4)</td>
<td>43 (45.7)</td>
<td>51 (54.3)</td>
<td></td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td>0.505</td>
</tr>
<tr>
<td>White</td>
<td>36 (14.6)</td>
<td>14 (38.9)</td>
<td>22 (61.1)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>169 (68.7)</td>
<td>88 (52.1)</td>
<td>81 (47.9)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>25 (10.2)</td>
<td>13 (52.0)</td>
<td>12 (48.0)</td>
<td></td>
</tr>
<tr>
<td>Other race/Non-Hispanic</td>
<td>16 (6.5)</td>
<td>9 (56.2)</td>
<td>7 (43.8)</td>
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</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td>0.200</td>
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<tr>
<td>Married</td>
<td>45 (17.4)</td>
<td>13 (28.9)</td>
<td>32 (71.1)</td>
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</tr>
<tr>
<td>Divorced</td>
<td>48 (18.5)</td>
<td>29 (60.4)</td>
<td>19 (39.6)</td>
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</tr>
<tr>
<td>Widowed</td>
<td>1 (0.40)</td>
<td>1 (100.0)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Never Married</td>
<td>121 (46.7)</td>
<td>63 (52.1)</td>
<td>58 (47.9)</td>
<td></td>
</tr>
<tr>
<td>Member of unmarried couple</td>
<td>44 (17.0)</td>
<td>24 (54.5)</td>
<td>20 (45.5)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td>0.253</td>
</tr>
<tr>
<td>Less than High School Graduate</td>
<td>79 (30.6)</td>
<td>42 (53.2)</td>
<td>37 (46.8)</td>
<td></td>
</tr>
<tr>
<td>Grade 12 or GED</td>
<td>85 (33.0)</td>
<td>43 (50.6)</td>
<td>42 (49.4)</td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>76 (29.5)</td>
<td>40 (52.6)</td>
<td>36 (47.4)</td>
<td></td>
</tr>
<tr>
<td>College graduate</td>
<td>18 (7.0)</td>
<td>5 (27.8)</td>
<td>13 (72.2)</td>
<td></td>
</tr>
<tr>
<td>Health Care Coverage</td>
<td></td>
<td></td>
<td></td>
<td>0.806</td>
</tr>
<tr>
<td>Yes</td>
<td>217 (84.4)</td>
<td>103 (47.5)</td>
<td>114 (52.5)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>40 (15.6)</td>
<td>25 (62.5)</td>
<td>15 (37.5)</td>
<td></td>
</tr>
<tr>
<td>Number of Intimate Partners</td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>One</td>
<td>103 (39.6)</td>
<td>35 (34.0)</td>
<td>68 (66.0)</td>
<td></td>
</tr>
<tr>
<td>Greater than one</td>
<td>157 (60.4)</td>
<td>95 (60.5)</td>
<td>62 (39.5)</td>
<td></td>
</tr>
<tr>
<td>General Health</td>
<td></td>
<td></td>
<td></td>
<td>0.033</td>
</tr>
<tr>
<td>Excellent</td>
<td>45 (17.4)</td>
<td>24 (53.3)</td>
<td>21 (46.7)</td>
<td></td>
</tr>
<tr>
<td>Very good</td>
<td>76 (29.3)</td>
<td>32 (42.1)</td>
<td>44 (57.9)</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>102 (39.0)</td>
<td>58 (56.9)</td>
<td>44 (43.1)</td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td>33 (12.7)</td>
<td>12 (36.4)</td>
<td>21 (63.6)</td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>4 (1.5)</td>
<td>4 (100.0)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
</tbody>
</table>

* Intimate Partner Violence
Table 2. Study Respondents' Opinions toward Expedited Partner Therapy by level of Exposure to Intimate Partner Violence

<table>
<thead>
<tr>
<th></th>
<th>N with outcome</th>
<th>Exposed to IPV* in last year</th>
<th>Not exposed to IPV in last year</th>
<th>Bivariable PR (95 % CI)</th>
<th>Multivariable adjusted PR (95 % CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is OK for a doctor to give someone with a STD a written prescription for his/her sexual partner (with the partners name on it)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree or agree</td>
<td>102</td>
<td>41 (32.0)</td>
<td>61 (46.9)</td>
<td>0.7 (0.5, 0.9)</td>
<td>0.5 (0.3, 1.0)</td>
</tr>
<tr>
<td>There is at least one partner in the past year that I would not trust to give me a prescription with my name on it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree or agree</td>
<td>61</td>
<td>45 (35.4)</td>
<td>16 (12.8)</td>
<td>2.8 (1.7, 4.6)</td>
<td>3.2 (1.5, 6.9)</td>
</tr>
<tr>
<td>There is at least one partner in the past year that I would not give a prescription to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly agree or agree</td>
<td>49</td>
<td>26 (20.5)</td>
<td>23 (18.3)</td>
<td>1.1 (0.7, 1.9)</td>
<td>1.3 (0.6, 3.0)</td>
</tr>
<tr>
<td>If I were offered prescriptions for all my partners in the past year I would take the prescriptions to every partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree or disagree</td>
<td>116</td>
<td>62 (50.4)</td>
<td>54 (43.6)</td>
<td>1.2 (0.9, 1.5)</td>
<td>1.6 (0.9, 3.0)</td>
</tr>
<tr>
<td>If a partner gave me a prescription with my name on it, I would take it to the pharmacy, get the medicine and take it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree or disagree</td>
<td>112</td>
<td>56 (44.1)</td>
<td>56 (44.8)</td>
<td>1.0 (0.7, 1.3)</td>
<td>0.8 (0.4, 1.5)</td>
</tr>
<tr>
<td>If I were given a prescription by a partner I would go see a doctor anyway to get examined and treated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly disagree or disagree</td>
<td>16</td>
<td>11 ( 8.9)</td>
<td>5 ( 3.9)</td>
<td>2.3 (0.8, 6.3)</td>
<td></td>
</tr>
</tbody>
</table>

* Intimate Partner Violence