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Client perspectives on design and implementation of a couples-based intervention to reduce sexual and drug risk behaviors among female sex workers and their noncommercial partners in Tijuana and Ciudad Juárez, México

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Abstract

This mixed-methods study examined the acceptability of a hypothetical couples-based HIV prevention program for female sex workers and their intimate (non-commercial) male partners in Mexico. Among 320 participants, 67% preferred couples-based over individual programs, particularly among men. Reasons cited for preferring couples-based programs included convenience and health benefits for both partners. Participants reported that they would benefit from general health information and services, HIV counseling and testing, job training (particularly for men) and other services. However, qualitative interviews revealed that barriers relating to the environment (i.e., poor access to services), providers (i.e., lack of a therapeutic alliance), and intimate relationships (i.e., mistrust or instability) would need to be addressed before such a program could be successfully implemented. Despite women's concerns about privacy and men's preferences for gender-specific services, couples-based HIV prevention programs were largely acceptable to female sex workers and their intimate male partners.

Keywords

female sex workers; couples-based research; interventions; implementation; HIV; drug use; Mexico

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Introduction

Compared to individual-oriented approaches, couple-based interventions may be more successful in reducing sexual and drug-related risk behaviors for transmission of HIV and other sexually transmitted infections (STIs) [1]. Programs for couples have successfully promoted HIV counseling and testing [1-3,] and treatment adherence in the United States [4] and developing country contexts [5-8]. Couple-based interventions offer important advantages over individual-focused prevention programs including the ability to address gendered issues of power, control, and dominance that may limit women's ability to negotiate safe behaviors within heterosexual relationships [9, 10]. By bringing partners together in safe environments, couple-based approaches can acknowledge these gendered dynamics and place mutual responsibility for HIV/STI prevention and general health and wellbeing on the dyad rather than individual women or men [11, 12]. Couple-oriented approaches have also helped address couples' sexual expectancies and communication [13-18]. Nevertheless, gaps in the couple-based intervention science remain, including questions of ideal intervention content, delivery approaches, and implementation strategies.

Although intervention content and topics to date have been heterogeneous [1], some successful programs have involved helping couples recognize sexual and drug related risks for disease transmission [18, 19], promoting HIV/STI counseling and testing together [3, 10, 20], and working to improve peer norms favoring safer sex behaviors [21, 22]. Most couple-based interventions have focused on identifying and reducing risk behaviors within relationships; however, recent research indicates that working with couples to improve relationship quality, wellbeing more generally, and addressing intimate partner violence can also help influence partners' abilities to coordinate safer sex [11, 23, 24]. Many of these approaches could benefit high risk couples in diverse settings, yet additional research is needed to identify content that is most urgent for populations facing dual sexual- and drug-related risks for HIV/STIs.

Research is also needed to assess how couples-based interventions could be delivered to marginalized populations in resource-poor settings. Efficacious prevention interventions for high risk couples have been implemented in a variety of ways, including providing risk reduction strategies to men and women separately but simultaneously, and training partners together in specific risk reduction strategies [25-27]. As successful couple-based interventions usually involve a combination of approaches based on the unique needs and contexts of their target populations [25-29], research is continuing to explore the optimal mix of intervention content and delivery approaches for diverse populations and socioeconomic contexts [11, 27].

Once effective intervention content and delivery approaches have been identified, translation of evidence-based interventions into real world settings requires demonstrating effectiveness (as opposed to their efficacy in controlled, experimental conditions) and a high likelihood that programs can be implemented with fidelity [30, 31]. Implementation is a process involving several stages, beginning with exploration and moving along to adoption, routine use, and sustainment [32-36]. Several factors that constitute characteristics of the external socioeconomic environment (e.g., availability of funding, political or social demand for the

intervention, community support), organizations (e.g., favorable cultures and climates, sufficient resources including number of trained practitioners), individual practitioners (e.g., training, attitudes toward innovation) and consumers may either facilitate or hinder the implementation of interventions [33-35]. As marginalized populations at heightened risk for HIV/STI transmission constitute an important stakeholder group for prevention programs, their perspectives on the adoption, routine use or engagement, and sustainment of such interventions is critical to deciding whether to adapt existing interventions or develop new programs to more specifically address their needs and socioeconomic contexts.

Within the past decade, communities in Northern Mexico have been experiencing linked epidemics of sex work, drug use, and HIV/AIDS [37, 38]. Recent studies in Tijuana and Ciudad Juarez, the two largest Mexican cities along the border with the United States, have documented a rise in HIV prevalence among female sex workers (FSWs) from <1% in the 1990s to nearly 6% in 2006 [39] and increasing to 12% among FSWs who inject drugs [40]. An individual-oriented behavioral intervention that successfully increased FSWs' condom use with their male clients failed to improve condom use with steady, non-commercial male partners [41]. Recent research by our team has revealed that many FSWs in these cities have intimate partners with whom unprotected sex is common [41] despite partners' engagement in high risk behaviors including sexual partner concurrency [42]. No research to date has investigated the possibility of designing or implementing a couples-based program to prevent HIV/STI transmission among drug-involved FSWs and their intimate partners. Our mixed methods study sought to explore these high risk couples' perspectives regarding hypothetical individual- and couples-based prevention programs and elicit their suggestions for intervention content, delivery, and implementation.

Methods

Overview

This study draws on data collected as part of *Proyecto Parejas* (Couples Project), a prospective study of the social epidemiology of HIV/STIs among 214 FSWs and their non-commercial male partners in Tijuana and Cd. Juárez, Mexico (n=428). Our study protocol is described elsewhere [43]. Briefly, between 2010 and 2011, we recruited women first using targeted and snowball sampling. Eligibility criteria for women included being at least 18 years old; reporting lifetime use of heroin, cocaine, crack, or methamphetamines; exchanging sex for money, drugs, or other goods in the past 30 days; having a steady, intimate (non-commercial) male partner for at least 6 months; and reporting sex with that partner in the past 30 days. Women were ineligible if they reported fearing extreme intimate partner violence (IPV) resulting from participation. Eligible FSWs were invited to bring their primary non-commercial male partners to study offices to assess the men's eligibility, which included being at least 18 years old and in a verified non-commercial relationship with an eligible FSW. Drug use was not an eligibility criterion for men. All eligible couples provided written informed consent for quantitative interviews and HIV/STI testing at baseline and every 6 months for 2 years. A sub-sample of couples also participated in qualitative interviews at baseline and one-year follow-up and provided additional written consent. We utilized both passive and active follow-up methods (e.g., street-based tracking

by experienced outreach workers) to prevent attrition due to incarceration, drug treatment entry, financial and housing instability, and other social and structural vulnerabilities known to affect this population. When couples broke up or if male partners were no longer willing or able to participate (e.g., due to incarceration), we continued to follow women. Institutional review boards of the University of California, San Diego, the Hospital General and El Colegio de la Frontera Norte in Tijuana, and the Universidad Autónoma de Ciudad Juárez approved all study protocols.

For this study, we utilized the prospective nature of *Proyecto Parejas* and drew from quantitative and qualitative follow-up instruments for the purpose of confirming one set of findings with another through convergence, providing a depth of understanding with qualitative data to complement the breadth of understanding from quantitative data, and using the qualitative data to explain or expand upon the findings of the quantitative results [44].

Quantitative Data Collection and Analysis

Beginning in 2010, we conducted individual quantitative surveys to measure individual- and relationship-level characteristics and behaviors related to HIV/STI risk at baseline and every six months for two years. Participants were reimbursed $20 for completing questionnaires lasting between one and two hours in length at each visit. Surveys were administered to each partner separately in private rooms by trained interviewers using laptop computers. From 2012 to 2013, 320 individuals (179 women, 141 men) who remained in the study (i.e., who had not broken up, moved away or otherwise been lost to follow-up at the time of analysis) completed interviewer-administered follow-up surveys for their fifth and final study visit. This questionnaire assessed participants' interest in future health programs for couples, individuals, or neither (i.e., not interested in a program) as well as reasons for preferring certain types of programs using closed- and open-ended questions. Finally, participants were asked whether they would be interested in a series of health program topics including general and specific healthcare services (e.g., HIV/STI and hepatitis information, testing and counseling), ways to improve intimate relationships (e.g., communication skills, anger management and violence prevention), drug cessation information and support, and employment and legal assistance. Design and selection of interview questions were based upon theory [45-49] and previous research with this population [50, 51].

Descriptive statistics provided frequencies and means for overall sample characteristics, interests in individual- vs. couples-based interventions, and health program topics of interest. To assess reasons for preferences regarding prevention programs, our bilingual team of data analysts used content analysis to categorize participants' open responses according to the most commonly identified explanations [52]. Once all data had been quantified, we compared program interests and preferences between women and men using bivariate logistic regression with clustered standard errors to account for any correlation within couples.

Qualitative Data Collection and Analysis

We conducted individual and joint qualitative interviews to explore the social contexts and relationship dynamics surrounding HIV/STI risk with a sub-sample of couples who were purposively selected for maximum variation in age, relationship duration, drug use and male employment status. Individual interviews provided a private space for expressing views regarding sensitive topics [53], while joint interviews allowed observation of couples' interpersonal dynamics [53-55]. We used the same semi-structured interview guide for the couple and individual interviews to assess if different information emerged depending on the interview context [56]. Bilingual interviewers were gender-matched with participants and engaged 41 couples (n=82) in baseline interviews lasting one to two hours. For this study, we re-interviewed a subsample of 29 couples at their third follow-up visits between June and December 2011. Couples in the follow-up qualitative sample were purposively selected from the 41 baseline couples based on their potential as "information rich" cases [52] that could provide in-depth feedback on their experiences in the project and offer their perspectives on future directions for interventions. Follow-up interviews lasted 30-60 minutes. After interviewing 29 couples (n=58), we reached saturation of categories, whereby we began to hear similar information across the interviews and judged that our sample size was sufficient [57].

We digitally recorded and transcribed all qualitative interviews following a structured protocol [58]. We kept all follow-up data in the source language (e.g., Spanish, English, or bilingual) throughout analyses to preserve participants' expressions and related connotations. With topics of interest determined *a priori*, we employed a primarily deductive coding strategy to follow up data [52]. Our bilingual team of qualitative data analysts carefully reviewed all individual and couple transcripts for intervention-related content. Analysts used MAXQDA software to manage, merge, and analyze the transcript data, interview summaries, and memos in an integrated system that could also be incorporated with the baseline data for additional contextual information on couples' relationships. We recorded detailed memos about interesting, important and unique findings, and identified broader crosscutting themes (e.g., contexts in which programs could or could not be implemented as designed). We organized data according to these topics and themes and selected illustrative examples that were translated into English as necessary.

Results

Sample Characteristics

Among 179 FSWs and 141 of their intimate male partners who completed follow-up surveys (n=320), the median age was 36 years (interquartile range [IQR]: 31-42). Thirty-six percent reported having a monthly income under $200 USD (2500 pesos). Recent drug use was common, with participants using heroin (50%), methamphetamines (11%), crack (8%), cocaine (4%), and injecting any drugs (49%) in the past six months. The median relationship duration at time of follow-up was approximately 5 years (IQR: 4-7). Trust between study partners was high (median ranking 9 out of 10 points; IQR: 8-10) and most couples were satisfied with their relationships (median score 15 out of 20 points; IQR: 14-15). However, conflict was relatively common, with individuals reporting past-year psychological

aggression (56%), physical assault (27%), injury (11%), and sexual coercion (3%) within their relationships. Unprotected sex was routine, with 79% of individuals reporting “always” having unprotected sex during the past month. Among 28 couples completing qualitative interviews (n=56 individuals), sample characteristics mirrored those of the overall cohort.

Interest in Future Health Programs

The overwhelming majority of participants (97%) expressed interest in future health programs (Table 1). Two thirds (67%) preferred programs for couples. The most common reasons for interest in a couples-based program included the belief that there would be improved health benefits for both partners (18%), that it was generally good for both partners (17%), and convenience (12%). More men than women cited convenience (e.g., “because we’re together all of the time”) as a reason for preferring a couples program (19% vs. 7%, $p<.05$). Partners explained that they would motivate each other to attend a program for couples more consistently than they would for an individual-oriented program. Many participants (43%) were also enthusiastic about the possibility of receiving couples voluntary counseling and testing for HIV/STIs. As explained by one woman in Tijuana, testing only one partner while the other remained unaware of their status could prove futile to HIV prevention efforts: “what is the point of one person being well if her partner is not?” Through providing couples with HIV/STI testing together, programs could help reduce anxiety about health risks and HIV/STI status. Counseling on disclosure of HIV/STI test results could also help couples improve communication within relationships. Six percent of participants cited the importance of improving communication within their relationships (e.g., “we could share our experiences and reflect about the questions”), explaining that training partners to express themselves more accurately and appropriately could help reduce conflict between partners and improving relationship quality more generally.

Nearly one third of participants (30%) preferred programs for individuals. The most common reason for preferring individual-based programs was the need for privacy (9%), particularly among women who were concerned with the sensitivity inherent in discussing sex work (e.g., “my husband is very jealous…I’d prefer to come by myself to avoid problems”). Women were significantly more likely than men to cite counseling as a reason for preferring an individual-based program (12% vs. 4%, $p < 0.01$). Men were significantly more likely than women to cite the need for gender-specific services to be provided individually (11% vs. 3%, $p<.05$), particularly health services for men (e.g., “there is only help available for women, and they don’t really take men into account, but we have problems too”). Women were more likely than men to report that men would prefer individual programs because they would not want to attend programs that appeared to be for women (7% vs. 1%, $p < 0.05$). Finally, qualitative interview participants explained that an individual program would help reach a broader population in need of these services (e.g., other sex workers who were not currently in relationships would be excluded from a couples-based program).

Suggested Features of Future Health Programs

With respect to the content of either individual- or couples-based programs, participants suggested four broad areas: 1) health care, 2) risk reduction training, 3) relationship

counseling, and 4) other social services. First, couples were highly interested in receiving general medical treatment and health information (57%) including urgently needed HIV/STI counseling and testing (43%) and psychological counseling (24%). Relating to HIV/STI testing, the disclosure of HIV status to children and other family members was discussed by 15% of participants as an important need, as described by one male partner in Tijuana:

> As a parent, I would like help explaining [HIV status] to our children&because there will come a time when they are going to ask&or someone is going to say, "Your dad is a *sidoso* [person who has AIDS]," and that concerns me a lot&In fact, my family is still ignorant about HIV, and they're educated people&architects, lawyers. I would like advice so I can talk to people who don't know anyone who is infected, but mainly to my children, without having to use medical terms.

Men were significantly more likely than women to cite this as a topic for a prevention program (19% vs. 11%, $p < 0.05$).

Regarding risk reduction, participants requested that programs provide information on education relating to drug use, sex work, and community violence. They also suggested providing free syringes and condoms and information on drug cessation, including where to obtain methadone therapy. Despite similar prevalence of drug use across gender, men were more likely than women to be interested in learning about the long-term health consequences of drug use (33% vs. 15%, $p < 0.01$) and receiving information on drug treatment services (28% vs. 13%, $p < 0.01$). Conversely, more women than men were interested in receiving hepatitis counseling and testing (34% vs. 25%, $p < 0.05$).

In terms of their intimate relationships, couples were interested in counseling to improve general relationship quality (23%), training to improve problem solving and risk communication between partners (18%), condom negotiation skills with your partner (13%), and ways to build trust with their partner (13%). Improving couples' communication was also described in qualitative interviews as a means to establishing greater trust and closeness within relationships (e.g., "getting to know" one's partner better). Couples were also interested in learning more about anger management and violence prevention, with 17% of participants suggesting that programs make referrals or facilitate access to violence prevention and anger management services.

Finally, participants discussed other social services that they perceived would improve their wellbeing. Men were more likely than women to be interested in employment training (37 % vs. 15%, $p < 0.01$), psychological counseling (34% vs. 16%, $p < 0.01$), and legal assistance (15% vs. 5%, $p < 0.05$). Formats suggested for delivering all of these content areas in the qualitative interviews included private couple sessions, group settings, and receiving health information through a movie or documentary.

Considerations for Intervention Implementation

Our quantitative and qualitative analyses revealed three sets of determinants or contexts that could influence the implementation of future individual- or couples-based health programs: 1) environment-based, 2) provider-based, and 3) relationship-based factors. First, interest in participating in a prevention program stemmed largely from the lack of existing health

services for marginalized populations in the environments (e.g., neighborhoods) where participants lived and worked in Tijuana or Ciudad Juárez, particularly services tailored toward their needs (e.g., sexual health and drug treatment services). Participants commented on their inability to access or afford existing health services, even those designated for low-income residents. Several participants also described experiencing discrimination when seeking health services due to their occupation (i.e., sex work) or their identification as a known drug user. The possibility of being identified as a drug user by police could also lead to male participants being arrested. For example, one couple in Ciudad Juárez worried about arrest or police harassment whenever traveling downtown to attend a program and suggested providing certificates or letters to police to certify their attendance at a legitimate program. Another woman in Juarez stated that her husband would probably not let her attend an individual program by herself due to the high levels of violence in their communities. Other participants described lacking facilities or opportunities to remove themselves from exposure to HIV/STI risk in the local environment. For example, programs could help couples to “get motivated to do something different&to get your mind out of the money, drugs&like trips to the beach, you know, different kinds of things.”

A second set of barriers was identified related to healthcare providers and prevention program personnel. Several participants commented on the challenges of developing comfortable or therapeutic relationships with services providers. As explained by one woman from Tijuana, interacting with the same provider(s) consistently over time would help establish increasing trust given the sensitivity of risk reduction topics:

> At first you may want to say something, but you back off. Then you go home and think, “Well, she was kind of nice, and she didn’t look like she was judging me.” And then the next time you share more. And when I talk about something, I’m like, “Remember when I told you about this?” And she remembers, and that feels good. That helps our self-esteem and helps us feel more confident. It’s really hard to talk about all this stuff, especially your past&It would be weird to just be saying it to some stranger, somebody new. You go back into your shell all over again. It is hard, emotionally, you know? It takes a lot out of a person.

Third, participants raised several relationship-related concerns that could affect the design and implementation of couples-based interventions. Some couples believed that at least some intervention components should be delivered to individuals privately (i.e., without their steady partners present). For example, one woman from Tijuana found it difficult to communicate openly when her husband was present and preferred discussing sensitive health topics with a counselor privately. As noted above, women were more likely than men to cite the need for privacy as a barrier to attending couples-based programs, but this was still only 13% of the total sample of women, and the difference was not statistically significant. Nevertheless, women explained in the qualitative interviews that, even when they prioritized honesty within their relationships, “there are still things that you don’t want to say, maybe because you’re afraid of hurting your partner, or you’re afraid of how they are going to take it.” Some men were also aware that their female partners experienced difficulty “opening up” about HIV/STI risk, particularly given their sex work involvement. At the same time, a man from Tijuana explained that prevention programs could help

couples navigate difficult conversations by initially allowing private spaces for discussing sensitive topics with a counselor while later promoting communication and acceptance between partners, “because she doesn’t realize that I’ve already accepted her and that I’m still going to be there to help her out&so she could be honest with me and I could be honest with her and we could help each other out.” Another couple from Tijuana believed that a couples-based program could help them get to know each other better. However, programs should be tailored to the unique needs of individual relationships. Counselors assigned to work with one couple could develop personalized questions and risk reduction plans for each partner: “Ask them separately, or plan little suggestions based on what the other partner said. I think we would love that.”

Discussion

In our exploration of high risk FSWs’ and their intimate male partners’ perspectives regarding interventions, we found that interest in couples-based interventions was high. Citing enhanced health benefits and increased convenience, two thirds of our sample preferred couples-based over individual programs, particularly among men. It is unsurprising that members of this socially marginalized population suggested topics for health programs including general healthcare, HIV/STI counseling and testing, risk reduction training, and other social and employment services. Our findings point to the priority given to immediate needs related to physical and economic survival. However, couples also expressed interest in the potential for prevention programs to strengthen their relationships, including counseling to improve communication skills and anger management, condom negotiation skills with your partner, and ways to build trust with your partner. Moreover, some of our participants preferred programs or at least some intervention components to be provided to individuals privately, as discussed below. Couple-based intervention science to date has not thoroughly included the perspectives of FSWs or their intimate male partners in resource poor settings. Thus, our findings provide a starting point from which researchers can begin developing intervention content and delivery approaches and understanding factors that could influence implementation.

Many prevention interventions—for couples or individuals—focus on identifying and reducing sexual and drug-related risk behaviors, but some recent couple-based intervention studies have found that working with couples to improve relationships and promote general health and wellbeing can lead to more significant improvements in partners’ abilities to coordinate safer sex within their intimate relationships [20-22, 59-61]. In addition to providing information on health risks, some of these interventions have provided couples with training and skills to improve their trust, intimacy, relationships satisfaction, commitment, and communication while also addressing gendered issues of control and power dynamics [10, 23-25]. In our study, couples explained that they would benefit from having a space in which they could focus on evaluating and discussing their intimate relationships. At a minimum, these findings suggest that couples in our study could benefit from a general relationship counseling program in which they would be allowed time away from the hustle and bustle of street life and a space in which they could focus on their relationships.

Although comprehensive guidelines for delivery of couples-based HIV interventions exist [62], our findings also provide an opportunity to expand our understanding of intervention delivery approaches. Couple-based intervention components have been delivered in a variety of ways. Some programs have provided health services and skills training to men and women separately (e.g., in different rooms), while others have worked with couples together to develop specific reduction strategies (e.g., activities requiring coordination between partners) [25-27]. Recent meta-analytic evidence investigating the efficacy of couple-based interventions suggests that mixed delivery modes can increase risk reduction [63]. Participants in our study implied that a one-size-fits-all approach may not be well suited in this population. We have previously found that couples in this population have varying levels of emotional connectedness and openness in their communication patterns [64, 65]. In this study, some couples acknowledged difficulty in communicating about sexual and drug-related risks, yet they believed that an intervention could help them develop and practice new communication and negotiation skills. Couple-based approaches are uniquely suited to promote the positive aspects of relationships (e.g., love, trust, commitment) and cultural norms that are supportive of couples' health (e.g., spiritual beliefs that encourage caring for loved ones) [20-22, 59-61]. Such approaches also help to reframe safer sex discussions away from "risk" [66, 67] and toward more positive, protective values [18, 68, 69]. As a result, members of high risk populations are often eager to participate in couple-based interventions [12].

Couples-based programs can create safe environments for couples to discuss sensitive or taboo topics such as power imbalances and conflict, abuse in past relationships, drug use, risky sexual behaviors, and even risks originating from outside of the dyad (e.g., concurrency) [11, 18, 22, 23, 70]. However, due to the possibility of intimate partner violence increasing HIV risk in many heterosexual relationships [71-73], caution is required when addressing potentially destabilizing topics (e.g., outside sexual or drug related risk behaviors). Our past research has highlighted the need for enhanced risk communication within FSW-intimate partner dyads [42, 64, 72-74]. The findings of this study confirm that experienced facilitators trained to identify intimate partner violence would be required to assess each couple's unique situation and provide tailored training in risk communication, problem solving and mutual goal setting [18, 20-22], while taking into consideration issues of safety. For some couples, however, individual counseling and referrals to outside services (e.g., for victims of abuse) would be more appropriate than a couple-based program.

Our study also revealed factors that could influence program participation that correspond to the Andersen behavioral model of health services utilization [75], including perceived need for services; sociodemographic characteristics like age, gender and ethnicity that predispose individuals to use or not use services; and factors like availability of services and health insurance that enable individuals to use them. First, both men and women expressed a need for drug and HIV/STI testing and counseling, perhaps reflecting their acknowledgment of the risks they face in their daily lives. However, couples also expressed a preference for other medical services (e.g., diabetes and cancer screening, nutrition and physical fitness counseling, and help with psychological stress) and services targeting their intimate relationships, as described above (e.g., strategies to build trust, anger management and communication skills, assistance with HIV/STI disclosure). This suggests a need to provide

HIV/STI prevention through an integrated approach that also considers other health problems [76].

Second, we found that gender could represent an important predisposing factor to engagement in a prevention program. Among the gender differences in program preferences that we identified, male partners in our study lacked health services targeted toward their needs and described significant environmental- and provider-related barriers (e.g., risk of arrest, stigma associated with being a drug user). These barriers rendered men reluctant to access existing services and may have led them to express greater interest in job training and psychological counseling than women. Citing the convenience of attending prevention programs together, men were more likely to express interest in couples-based programs, although the gender difference was not statistically significant. Research in other settings has found that men may feel more inclined to obtain services when encouraged to do so by their female partner [77]. At the same time, women were more likely to prefer programs for individuals due to a need for privacy (e.g., to discuss sex work risks) and concern that their male partners would not want to attend programs that appeared to be for women. However, we should note that the number of women expressing a need for privacy was relatively small (n = 22 or 12% of the women in our sample). Our findings also suggest that women may have a greater need for programs that offer counseling and training relating to violence, while men may be more concerned about being ignored or “left behind” in the HIV/STI prevention agenda, especially if FSWs obtain services that are unavailable to men. Involving partners in active, positive ways may help ameliorate the concerns of men and women in this population [78].

Third, the uncertain predisposition of this cohort to use condoms within and outside of their relationships poses a particular challenge to engaging in HIV prevention efforts. As noted above, previous studies have suggested that couples-based interventions are efficacious in reducing unprotected sex within the context of romantic relationships [63]. However, although distribution of free condoms was suggested by some of the women who participated in the qualitative interviews, only 12% of women and 14% of men expressed interest in learning how to negotiate use of condoms with their intimate partner. Previous studies with this population [64, 65, 74] also noted a general lack of interest in use of condoms and microbicides within the relationship because their use implies a lack of trust and possible infidelity, they are not seropositive, they “do not like them”, and the lack of use defines them as a couple. Our results suggest that a prevention program targeting this population may thus emphasize condom use outside of the relationship as a means of protecting one’s intimate partner rather than condom use within the relationship. Alternatively, such an intervention will need to focus on disentangling the use of condoms within the relationship from its representation as a sign of trust and intimacy. On the other hand, our results suggest that these couples have more in common with participants of drug use-focused couples interventions and thus would be more likely to benefit from similar focused interventions with minimal adaptation.

Finally, enabling factors that could determine the feasibility and acceptance of prevention programs were also highlighted by our findings. Participants mentioned the difficulty in accessing general medical services due to lack of availability in their neighborhoods and

perceived discrimination when they are available due to their lifestyle and employment in the sex trade. Since health and social services were reportedly unavailable to many of our participants, access to these services could be a primary incentive to participating in individual- or couples-based HIV/STI prevention programs. Having access to a "regular source of care," i.e., a counselor or provider who knew them and treated them with *dignidad* [dignity] was viewed by couples as a high priority. Any program lacking these characteristics would be unlikely to be successfully implemented and sustained because there would be no demand for such services.

There are several limitations to our study that deserve mention. First, our focus on a unique sample of drug involved FSWs' intimate relationships in Tijuana and Ciudad Juárez likely limits the generalizability of our findings. Despite our utilization of passive and active outreach efforts (e.g., street-based tracking), attrition due to relationship dissolution, incarceration, entering drug treatment, and other factors substantially reduced our sample size and may have biased our sample towards more stable, lower risk couples. The exclusion criteria (i.e., excluding women who were fearful of life threatening intimate partner violence) also biased the sample in a similar manner. We also relied on self-reported interest in health programs. Given the lack of available services that currently exist in these underserved communities, and the fact our study provided some services (e.g., HIV/STI testing), it is possible that social desirability bias led participants to report generally favorable attitudes toward future programs. However, the qualitative interviews that we conducted may have opened up a space for participants to more fully explain why they would or would not be interested in certain intervention modalities. Finally, we focused on the relationship level of analysis; additional research is needed to more fully understand the contexts in which implementation could occur, particularly environmental-level factors including poverty and social marginalization of sex workers and drug users. However, many of our findings were confirmed in both quantitative and qualitative interviews, and our qualitative data helped expand upon important considerations for designing and implementing programs for these couples, highlighting the value of mixed methods approaches in intervention and implementation research.

Despite these limitations, our study contributes important findings regarding FSWs' intimate relationships in a resource-poor context to the couples-based intervention science. We believe that our findings have the potential to inform future interventions to reduce sexual and drug-related risk behaviors for HIV/STIs and improve general health and wellbeing among underserved populations of FSWs' and their intimate male partners. We identified high demand for health interventions involving specific services among drug-involved FSWs and their intimate male partners in the Mexico-U.S. border region. Most couples viewed prevention programs as both feasible and acceptable. Such a program would address important risk-behaviors such as needle sharing, unsafe sexual practices, partner concurrency, HIV or STI disclosure, intimate partner violence, and general medical needs. Despite some individuals' concerns about privacy and the need for gender-specific services for men and women, most preferred couples-based approaches to HIV/STI prevention and general health interventions. However, we also identified specific predisposing and enabling factors that constitute barriers to program implementation, including gender differences in

need for and willingness to use services individually and as a couple, reluctance to use condoms within the relationship, and availability of services. These barriers would need to be addressed before such a program could succeed, however, and certain features of such a program would have to be adapted to address gender-specific needs and preferences.

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Table 1

Interest in individual and couples-based health programs among women and men enrolled in the *Proyecto Parejas* cohort study in Tijuana and Cd. Juarez, Mexico (n=320)

Responses	Women (n= 179)	Men (n= 141)	Overall[a] (n= 320)
Interested in a program for:			
Couples	109 (61%)	105 (74%)	214 (67%)
Individuals	63 (35%)	32 (23%)	95 (30%)
Neither (not interested)	7 (4%)	4 (3%)	11 (3%)
Reasons for interest in a program for couples:[a, b]			
Generally good for both partners	31 (17%)	23 (16%)	54 (17%)
Convenience (easier to come together)	12(7%)	27 (19%)	39 (12%) *
Communication will benefit from couples program	7 (4%)	11 (8%)	18 (6%)
Trust will be strengthened by couples program	11 (6%)	4 (3%)	15 (5%)
Health benefits for both partners, especially HIV/STI tests	31 (17%)	27 (19%)	58 (18%)
Helps keep drug use “in check”	5 (3%)	6 (4%)	11 (3%)
Problem solving will be strengthened by couples program	2 (1%)	5 (4%)	7 (2%)
Health information/education for both partners	4 (2%)	5 (4%)	9 (3%)
Improves relationship quality, male partners act more helpful	11 (6%)	1 (1%)	12 (4%)
Both partners can earn (more) money from couples program	4 (2%)	1 (1%)	5 (2%)
Reasons for interest in a program for individuals:[a, b]			
Men/women need special/extra/different services (esp. men)	5 (3%)	15 (11%)	20 (6%) *
Convenience (easier to come to program alone)	3 (2%)	6 (4%)	9 (3%)
Single/broke up with partner (or planning to break up)	19 (11%)	2 (1%)	21 (7%)
Privacy (keep confidentiality, prevent jealousy)	22 (12%)	6 (4%)	28 (9%) **
Male partner doesn’t like to come to program for women	12 (7%)	2 (1%)	14 (4%) *
Interested in the following topics in a health program:[a]			
HIV/STI information, testing, and counseling	67 (39%)	66 (48%)	133 (43%)
Hepatitis information, testing, and counseling	58 (34%)	33 (24%)	91 (29%) *
General medical treatment and information about other health issues (diabetes, cancer, etc.)	93 (54%)	84 (61%)	177 (57%)
Ways to improve your relationship with your partner/couples counseling	39 (23%)	31 (23%)	70 (23%)
Improving communication with your partner	25 (15%)	30 (22%)	55 (18%)
Anger management skills and violence prevention	24 (14%)	27 (20%)	51 (17%)
Condom negotiation skills with your partner	20 (12%)	19 (14%)	39 (13%)
Help disclosing HIV/STI test results to your partner	19 (11%)	26 (19%)	45 (15%) *
Help talking to your partner about outside sexual partners and clients/sex work	19 (11%)	16 (12%)	35 (11%)

Responses	Women (n= 179)	Men (n= 141)	Overall[a] (n= 320)
Ways to build trust with your partner	17 (10%)	23 (17%)	40 (13%)
Information on health risks of using drugs and long term consequences of drug use	26 (15%)	45 (33%)	71 (23%) **
Learning how to take care of your veins, abscess prevention, and safer injection information	20 (12%)	13 (9%)	33 (11%)
Information about leaving drugs, drug treatment, and medication to stop using drugs	23 (13%)	38 (28%)	61 (20%) **
Support groups, like AA or “ayuda mutua”	12 (7%)	15 (11%)	27 (9%)
Employment counseling and job training	26 (15%)	51 (37%)	77 (25%) **
Help with legal issues (getting an ID card, papers, deportation cases)	9 (5%)	20 (15%)	29 (9%) **
Family planning and information on contraception	7 (4%)	9 (7%)	16 (5%)
Parenting skills and learning how to talk to your children about drugs and sexual risks	15 (9%)	9 (7%)	24 (8%)
Nutrition counseling	18 (10%)	8 (6%)	26 (8%)
Physical fitness and health information	32 (19%)	18 (13%)	50 (16%)
Stress relief techniques	17 (10%)	10 (7%)	27 (9%)
Psychological counseling	28 (16%)	46 (34%)	74 (24%) **

Notes:

* $p<.05$;

** $p<.01$; p-values from univariate odds ratios with clustered standard errors within couples.

[a] Sample size restricted to 320 participants who expressed interest in future programs.

[b] From open-ended questions about why participants would prefer programs for couples vs. individuals.