

Partner Notification for Sexually Transmitted Diseases in Peru: Knowledge, Attitudes, and Practices in a High-Risk Community

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Objectives: Notification and treatment of sex partners after diagnosis of a sexually transmitted disease (STD) is essential to reduce reinfection and further transmission.

Goal: The goal of this study was to determine the prevalence of partner notification and subsequent health-seeking behavior in a high-risk population in Lima, Peru.

Study Design: STD-infected participants of an HIV/STD prevention trial completed a questionnaire concerning partner notification.

Results: Of the 502 STD-positive subjects, 287 completed the survey. Among survey participants, 65% informed their primary partner and 10.5% informed casual or anonymous partners. Reasons for failure to notify varied by partner type and included not understanding the importance of partner notification, embarrassment, fear of rejection, and inability to locate the partner. When notified, approximately one third of all partners sought medical attention.

Conclusions: Partner notification in Peru is limited by relationship dynamics, social stigma, and limited contact information. Interventions could emphasize the importance of notification, improvement of communication skills, and introduce contact tracing programs (including Internet-based systems) and expedited partner therapy.

AFTER THE DIAGNOSIS OF A SEXUALLY transmitted disease (STD), notification and treatment of recent sex partners is essential to limit the spread of disease and reduce the risk of reinfection. The issue of voluntary partner notification has been studied in a variety of social settings in the United States and Europe.^{1–12} Through partner notification, recent sex partners of patients diagnosed with an STD are informed of their potential exposure and need for testing. Current programs are based either on direct notification by the patient or third-party notification by the healthcare provider or a public health authority.^{2,3,7,13–16} Although third-party referral is generally more effective than patient-

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mediated notification strategies, infrastructural resources for partner notification are generally lacking in public health systems, and private sector physicians often do not incorporate partner notification into their routine practice patterns.^{2,7,15,16} Among patients, certain factors that influence whether partners are informed have been described. Primary partners are more likely to be informed than casual or anonymous partners and women more often inform their partners than men.^{10–12,17–20} Qualitative studies of the issue often point to fear of rejection or physical violence from the partner or a general lack of communication skills as reasons for not disclosing STDs to sex partners.^{5,17,21}

Information on partner notification in societies and cultures outside of the United States and Europe is limited. Several studies have analyzed the relationship between partner notification and social issues of gender and access to care in Africa.^{21–24} Other work has pointed to the difficulties and systemic failures of incorporating partner notification and referral into the existing social and public health structures of African societies.^{19,20,25} Despite growing interest in the epidemiology of HIV and STDs in Latin America, we are not aware of any studies of partner notification in the region. Reliable estimates of the population-wide prevalence of STDs in Peru are also limited, although published reports indicate a trend toward increases in certain infections, including genital herpes, trichomoniasis, and pelvic inflammatory disease.^{26,27} Given the context of increasing STD transmission and a lack of knowledge concerning partner notification in Peru, we examined attitudes and practices concerning patient-mediated partner notification for STDs among a group of high-risk men and women in Lima.

Materials and Methods

Study Design, Population, and Recruitment

The NIMH Collaborative HIV/STD Prevention Trial is an international multisite trial designed to test the efficacy of a “diffusion of innovations” model for a community-based intervention to reduce HIV/STD transmission. Initial enrollment for the Peru site was conducted in low-income urban neighborhoods of Lima in May–June 2003. Subjects were recruited from microvenues where

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TABLE 1. Subject Characteristics and Sexually Transmitted Disease Prevalences of the NIMH Collaborative HIV/STD Prevention Trial, Lima, Peru, 2003

Characteristic	n (N = 1,263)	Percent
Gender		
Male	1,186	93.9
Female	77	6.1
Age (y)		
18–20	445	35.2
21–23	366	29.0
24–26	197	15.6
27–29	113	8.9
30–32	64	5.1
33–35	45	3.6
36–38	23	1.8
39+	10	0.8
Risk group		
Heterosexual-identified male	878	69.5
Homosexual-identified male	308	24.4
Heterosexual-identified female	77	6.1

men and women at high risk for HIV/STDs were known to congregate such as bars, pool halls, soccer fields, and street corners.^{28–31} To qualify for the study, participants had to be between the ages of 18 to 40 years, to live in the selected neighborhood, and to frequent the microvenues at least twice a week (participant characteristics are listed in Table 1). All participants were screened for STDs, including HIV, syphilis, herpes simplex virus type 2 (HSV-2), trichomonas, and genital gonorrhea and chlamydia, at the initial study visit and again at 2 annual follow-up visits. Participants diagnosed with an STD were given treatment by the study (or if HIV-positive, a referral to an established HIV treatment center) and advised of the importance of having their partners tested and treated for HIV/STDs. In the case of HSV-2 infection, participants were counseled concerning their diagnosis and management of outbreaks, and participants with active outbreaks were referred for medical therapy. All STD-positive participants were informed that their partners could present to the study site for free treatment or could independently seek care from a private physician or public health clinic.

Data Collection

At the first of 2 annual follow-up evaluations, participants who had been diagnosed with an STD during the baseline survey were asked to complete a brief (one-page) questionnaire as a supplement to the standard study questionnaire. Before completing the questionnaire, participants were reminded of the importance of partner notification and advised that they would be asked about their practices. Participants were asked questions about their diagnosis, their history of notifying primary and nonprimary partners, their reasons for informing or not informing partners of their diagnosis, and whether their partners sought treatment. Potential responses to the closed-ended questions were developed using information collected during a qualitative analysis of the study population conducted before initiation of the trial. Written informed consent was provided by all study participants. The study was approved by the Institutional Review Boards of the University of California, Los Angeles, the University of California, San Francisco, and Universidad Peruana Cayetano Heredia.

Data Analysis

Analysis of results was performed through use of χ^2 or Fisher exact tests when appropriate. Results are presented as prevalences

or odds ratios (ORs) with 95% confidence intervals (CIs). ORs calculated for comparisons of behavior with primary versus secondary partners include only participants who reported having a primary or secondary partner as the respective denominators. All *P* values are 2-sided and considered significant if *P* < 0.05. Epi Info 3.01 (Centers for Disease Control and Prevention, Atlanta, GA) was used for all statistical analyses.

Results

At the initial study visit, 1,263 subjects were enrolled and 502 (39.7%) were diagnosed with an STD. Of the STD-positive subjects, 419 were diagnosed with HSV-2, 58 with HIV, 99 with syphilis, 66 with chlamydia, 11 with gonorrhea, and 4 with trichomoniasis (some subjects had multiple coinfections). Of those subjects, 287 completed the partner notification survey at the follow-up visit. Refusal rates for specific STDs ranged from 36.2% to 75.0% with no statistically significant difference in refusal according to STD diagnosis (Table 2).

The majority of participants (96.9%) reported that they were aware of the importance of notifying sex partners of their diagnosis so that they could seek treatment. Of note, all 9 participants who did not consider partner notification important failed to inform their partners. Among the subjects who reported having a “stable partner” at the time of their diagnosis, 65.0% reported notifying this partner (Table 3). In contrast, although 53% of subjects reported having “other sex partners” at the time of diagnosis, only 10.5% of these participants informed their secondary partners of their STD diagnosis (OR = 15.78; 95% CI = 8.7–28.6). No significant differences were observed in frequency of notification according to type of STD (HIV, syphilis, chlamydia, gonorrhea, HSV-2, and trichomonas).

Within primary partner relationships, reasons for not disclosing STD infection status were most often embarrassment (66.7%) and fear of breaking up or rejection (31.7%). Among nonprimary partnerships, embarrassment was also reported by 38.0% of subjects as a reason for not disclosing their STD status. However, primary partners were more likely than casual partners not to be notified as a result of embarrassment (OR = 3.26; 95% CI = 1.7–6.3) or fear of rejection/breakup (OR = 5.14; 95% CI = 2.2–12.0). Another crucial issue influencing notification of secondary partners was the unstable and often transient nature of these relationships in which many participants reported they “did not know” their partner (28.9%) and/or were unable to locate them (20.7%). Difficulty locating the person was more often given as a reason for not informing a secondary or casual partner (20.6% vs. 3.3%; OR = 18.88; 95% CI = 4.4–81.6) in comparison to a primary partner. Similarly, when allowed to list “other” reasons for not notifying their nonprimary partners, 6.6% offered that it was

TABLE 2. Sexually Transmitted Disease Prevalence, Study Participation, and Partner Notification Rates by Diagnosis, Lima, Peru, 2003

Sexually Transmitted Disease	Prevalence n/N(%)	Study Participation n/N (%)	Partner Notification n/N (%)
Gonorrhea	11/1,263 (0.9)	4/11 (36.4)	3/4 (75.0)
Chlamydia	66/1,263 (5.2)	32/66 (48.5)	17/32 (53.1)
Herpes simplex virus type 2	419/1,263 (33.2)	195/419 (46.5)	86/195 (44.1)
Trichomonas	5/1,263 (0.4)	3/5 (60.0)	1/3 (33.3)
Syphilis	99/1,263 (7.8)	70/99 (70.7)	29/70 (41.4)
HIV	58/1,263 (4.6)	21/58 (36.2)	9/21 (42.9)

TABLE 3. Partner Notification Practices in a High-Risk Community for Sexually Transmitted Disease Transmission, Lima, Peru, 2004

Characteristic	N	n	Percent
Had primary partner at the time of diagnosis	287	200	69.6
Informed primary partner of diagnosis	200	130	65.0
Reasons for not informing primary partner*	60		
Embarrassment		40	66.7
Unable to locate partner		2	3.3
Fear of rejection/breakup		19	31.7
Fear of violence		3	5.0
Had secondary partner(s) at time of sexually transmitted disease diagnosis	287	152	52.9
Informed secondary partner(s) of diagnosis	152	16	10.5
Reasons for not informing secondary partner(s)†	121		
Embarrassment		46	38.0
Unable to locate partner		25	20.6
"Did not know" partner		35	28.9
Fear of rejection/breakup		10	8.2
Fear of violence		3	2.4
Other ("not important")‡		8	6.6

*Ten participants did not provide a reason for not informing their primary partner.

†Fifteen participants did not provide a reason for not informing their secondary partner(s).

‡This response was not provided as a potential response in the survey and was independently volunteered by the study participants.

"not important," a reason never described as a factor in failing to disclose to a primary partner.

For sex partners who were notified of their potential STD exposure, study participants were certain that only 37.6% of their primary partners and 33.3% of their secondary partners had sought treatment from a physician or pharmacist. It should be noted that data concerning treatment-seeking behavior is secondary source information derived from participants' report of their partner's activity and may not be completely reliable. Further underlining the instability of the nonprimary sexual relationships, 60.0% of participants did not know whether their secondary partners had received any treatment in contrast to only 13.6% of primary partners (OR = 9.53; 95% CI = 3.0–30.2).

Discussion

We report on partner notification practices among high-risk participants of an HIV/STD prevention trial in Peru. Despite receiving counseling on the importance of informing their partners of their diagnosis, notification rates were only 65.0% for primary partners and 10.5% for secondary partners. Reasons for lack of notification included embarrassment, fear of rejection, and difficulty in locating casual or anonymous partners. When informed of their partner's STD diagnosis, approximately one third of the sexual contacts were known to have received medical attention despite the fact that care was freely available.

All of the participants in our study had been previously instructed on the importance of notifying sex partners of their STD diagnosis, and the lesson was affirmed by the majority of respon-

dents (96.9%) at the follow-up session. Those who denied the importance of informing their partners of their diagnosis universally failed to do so. Although reported partner notification levels were suboptimal in all patient groups, the complete lack of notification among patients who had not incorporated the message reflects the potential importance of a brief educational intervention for improving notification rates.

Other barriers to disclosure can be analyzed according to the type of partner relationship. Primary or stable partners were more likely to be informed of the subject's diagnosis and to seek treatment. When primary partners were not informed, the reasons were usually related to fear of rejection or abandonment. Although embarrassment and fear of rejection were also common reasons for not disclosing an STD diagnosis to secondary or casual partners, other important factors in this group were the inability to locate or identify the person and the perception that informing a transient partner was "not important."

On the basis of these findings, notification of primary partners could be promoted by interventions that emphasize communication within the relationship and accentuate the importance of diagnosis and treatment as a means of maintaining relationship stability and the health of both partners. Strategies to increase notification of secondary or casual partners could also address communication strategies but must acknowledge the logistic difficulties of identifying and tracing transient contacts. Using the model of syphilis containment, provider-based programs to promote notification and treatment of STD exposure have been applied to the control of HIV, gonorrhea, and chlamydia infections with some success.^{2,3,9,32} However, the limited economic resources available for public health in Peru may preclude the development of labor-intensive, provider-based programs. Other innovative mechanisms have been introduced that use the Internet as a tool for locating and anonymously informing sex partners of exposure despite limited contact information such as the website www.inspot.org.^{33–35} Given the extensive spread of the Internet among youth in Peru (where 41% of the population reports access to the Internet and 87% of Internet users are younger than 45 years old), Internet-based partner notification strategies could be very effective and economic in this setting and warrant further investigation.^{36,37}

The low number of partners known to receive treatment for STDs after notification also suggests the potential importance of an expedited partner therapy (EPT) program in Peru. EPT recognizes that partners of newly diagnosed cases of an STD need to be treated and enables the treating medical providers to offer extra treatment to the patient to deliver to their sex partners (patient-delivered partner therapy) or creates a system whereby the treating medical provider can make treatment available for partners through a prewritten prescription or an arrangement with a local pharmacy.^{38–41} EPT has been shown to significantly reduce rates of gonorrhea reinfection and is recommended by the U.S. Centers for Disease Control and Prevention as a tool to enhance STD control.^{38–41} Sex partners of 73% of patients in San Francisco diagnosed with chlamydia and 74% of patients in Uganda diagnosed with any STD were known to receive treatment when EPT was provided.^{19,42} In contrast, only approximately one third of those notified of their partner's positive STD status in our study were known to have sought any form of medical attention. The reasons why people did not present for treatment after notification of exposure were not determined. However, inability to pay for medical care or antibiotic therapy is not a likely reason for lack of follow up, because all study participants' partners were offered free STD testing and treatment. Furthermore, any economic barriers of financial access to medical attention present outside of the controlled setting of a research protocol or social barriers of shame in identifying oneself to a health professional as potentially STD-

infected would be addressed by an EPT program. EPT could also potentially increase partner notification rates by allowing STD-positive patients to offer their partner(s) a concrete, immediate treatment option when disclosing their STD status instead of the uncertainty of a loosely structured referral.

The limitations of our study are related to the fact that all of the subjects were members of an ongoing HIV/STD prevention trial in a community where HSV-2 was the predominant STD. Participants were counseled on the importance of partner notification and treatment for STDs at the time of diagnosis and so do not represent a population free from previous intervention. However, this limitation is also a strength in that our cohort reflects the attitudes and behaviors of a community at risk after a brief educational intervention that is consistent with current standards of care for management of an STD. Participants were also reminded of the importance of partner notification and explained the reason for the study before completing the questionnaire. Although these issues may have resulted in a possible bias toward socially acceptable responses, such bias would suggest that partner notification rates are even lower than reported. The dominance of HSV-2 infection among STDs diagnosed may also affect the applicability of our findings. Because patients are not routinely treated for latent HSV-2 infection, the diagnosis is not amenable to an EPT program but instead requires a traditional program of counseling on management of outbreaks and prevention of transmission. The absence of antiviral therapy for asymptomatic HSV-2 also could have caused participants to see this infection as unimportant and thereby undervalue the importance of notifying their partners. Despite these limitations, the distribution of male subjects and HSV-2 infections reflect the demographic patterns of high-risk behavior and prevalences of specific STDs in urban Peruvian communities. These findings illustrate the context for any future intervention and identify the issues that remain unresolved after implementation of standard counseling and treatment measures in a population at risk for HIV and STD transmission.

Our study illustrates the attitudes and practices concerning partner notification present in a high-risk urban community in Peru. Barriers to notification of sex partners differed according to the type of relationship (stable vs. casual or anonymous) and included lack of awareness of the importance of disclosure, embarrassment or fear of rejection, and an inability to locate or identify previous partners. Potential interventions to improve partner notification and treatment include educational programs that address the importance of notifying partners and improvement of communication skills within relationships, provider-based notification, Internet-based contact tracing with anonymous notification, and EPT. Continued study of partner notification and EPT within the cultural and social contexts of Latin American societies is necessary to further elucidate these issues and to develop culturally specific solutions.

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