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A Qualitative Study Among Injection Drug Using Women in Rhode Island: Attitudes Toward Testing, Treatment, and Vaccination for Hepatitis and HIV

MICHELLE A. LALLY, M.D., M.Sc.¹, SYDNEY A. MONTSTREAM-QUAS, M.P.H.¹, SARA TANAKA, B.A.¹, SARA K. TEDESCHI, B.A.¹, and KATHLEEN M. MORROW, Ph.D.²

¹Department of Medicine, The Miriam Hospital/Warren Alpert Medical School of Brown University, Providence, Rhode Island ²Department of Psychiatry & Human Behavior, The Miriam Hospital/Warren Alpert Medical School of Brown University, Providence, Rhode Island

Abstract

HIV and hepatitis C virus infection are serious and prevalent health conditions among many women who inject drugs. Qualitative interviews with 20 injection drug using women at a short term drug treatment center in Rhode Island revealed six primary barriers and facilitators for testing and receiving results and treatment for hepatitis and HIV, as well as for hepatitis vaccination. The primary barriers were prioritization of drug use; low level of diseases-specific knowledge; stigmatization; accessibility of testing, results and treatment; and psychological factors. The primary facilitator was interest in promoting one's health. Our findings indicate that injection drug using women experience multiple barriers to HIV and hepatitis testing, results, treatment and vaccination. Methods for improving the motivators for health, facilitating infectious disease prevention, and decreasing unnecessary disease complications of injection drug using women need to be utilized. These methods should include strategies that minimize stigma and facilitate accessibility of health care.

INTRODUCTION

HIV, hepatitis B, and hepatitis C are separate viruses that cause different diseases. They share in common their mode of transmission. These can all be contracted via injection drug use, and injection drug users (IDUs) have high rates of infections with all three viruses. HIV and hepatitis B can also be spread sexually, and this may be true for hepatitis C as well. Female IDUs often engage in risky sexual behavior, and the high proportion of these diseases among female IDUs is attributed to a combination of risk factors. Among women in the United States, injection drug use is directly associated with 41% of AIDS cases while heterosexual transmission accounts for 55% of cases.¹ Among IDUs, HIV prevalence is cited as 25%,² while the prevalence of hepatitis C has been cited as high as 90%–98% among persons who have injected drugs for several years.^{3–5} Hepatitis B prevalence among IDUs has been cited between 35%–70%⁶; IDUs compose 15% of the total hepatitis B infection population.⁷

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Address reprint requests to: Michelle A. Lally, M.D., M.Sc., The Miriam Hospital/Brown Medical School, 164 Summit Avenue, Providence, RI 02906, mlally@lifespan.org.

IDU women are a medically underserved population and confront multiple barriers to accessing medical services. Lack of regular medical care and low levels of insurance coverage represent some of the most significant obstacles to receiving medical care for the substance using population.^{8,9} Because substance users' access to and utilization of medical care is inconsistent, their chief medical complaint may override infectious disease diagnosis and prevention during the instances when they do seek care.^{10,11}

Free, federally funded HIV testing and counseling is available through most state health departments. However, federal dollars have not been designated to support free hepatitis C testing and counseling. In 2001, only 23% of city and county health departments offered hepatitis C testing, while 77% offered HIV testing.¹² The United States does not have a program to systematically deliver hepatitis B vaccination to IDUs, which reflects an overall lack of hepatitis prevention for this at-risk population.¹³ Hepatitis vaccination rates among substance users have been inconsistent, with rates varying from 2%–29%.^{9,13,14}

Stereotypes of IDUs lead to beliefs that outreach initiatives will not reach them, that they will not get the full hepatitis vaccine series, and that they will not incorporate harm reduction strategies into their behavior. The Centers for Disease Control (CDC) has recognized these stereotypes and myths as barriers, both locally and nationally, to hepatitis prevention.¹⁰ In 2001, the CDC launched the National Hepatitis C Prevention Strategy in an attempt to address and debunk the myths surrounding hepatitis prevention for IDUs. The 2001 Strategy called for increased education of the public and health care professionals regarding HCV; integration of HCV prevention control into local health programs; identification, counseling, and testing of at-risk individuals; medical referrals for persons found to be infected with HCV; and evaluation of the effectiveness of prevention activities.¹² At that time, the CDC called for further research to determine which types of prevention messages would best reach at-risk groups such as former and current IDUs and persons with high-risk sexual behaviors.

Much of the domestic literature focuses on IDUs of both genders.¹⁵⁻¹⁹ Little domestic research has been conducted on testing, treatment, and vaccination specifically among women who inject drugs. This study examines the barriers to and facilitators of testing for hepatitis and HIV, receiving results and treatment for those infections, and getting vaccinated for hepatitis among injection drug using women.

Researchers have used qualitative research methods to examine HIV prevention strategies and gather invaluable perspectives of injection drug users.²⁰⁻²³ Participants' experiences, opinions, feelings, and knowledge can be extrapolated from detailed interviews to increase understanding of the cases and situations studied.²⁴ Qualitative interviewing was chosen for this study because it allowed in-depth exploration and elucidation of the unique issues facing injection drug using women and their attitudes toward testing, results and treatment for hepatitis and HIV, and vaccination for hepatitis.

MATERIALS AND METHODS

Study population

We conducted qualitative, individual semistructured interviews with twenty injection drug using women. Women were recruited in 2000 at the women's branch of a state-funded short-term drug treatment center in Rhode Island that offers treatment for adults seeking detoxification from alcohol, heroin, or other substances. The average length of stay at the facility is 6 days, and most patients' care is funded through Medicaid.

A research assistant visited the facility 2 to 4 days per month. Patients who were awake were each invited to learn about the study. Those adults who reported injection drug use just prior to entering the facility and who were able to provide informed consent were eligible to participate. Over 90% of the women approached elected to participate in the study. All participants completed a written informed consent using forms and a protocol approved by the Lifespan Institutional Review Board. After completion of the interview, participants received a \$20 grocery store certificate.

Qualitative data collection

Participants were interviewed by a female research assistant using a semi-structured qualitative interview agenda developed by the researchers. Demographic questions were asked of all participants via scripted questions in the face-to-face interviews. These included questions about age, race, level of education, living arrangements, and source of income. *A priori* qualitative research questions addressed the following: participant self-perception of hepatitis and HIV risk, hepatitis and HIV testing history and experiences, opinions about treatment, and attitudes toward vaccination. Prompts were utilized to encourage participants to elaborate on their responses. Refinement of the agenda occurred after conducting pilot interviews. Interviews lasted 60–90 minutes and were audiotaped and transcribed to ensure a reliable analysis of the participants' responses.

Data management and analysis

The researcher who conducted the interviews transcribed each of the audiotaped interviews verbatim. Data was organized and coded using NVivo (QSR International Pty Ltd, Melbourne, Australia). A coding scheme was developed based on the knowledge of the field to date and the interview agenda. The majority of the codes included *a priori* themes, although emergent themes were identified including the perception of belonging to a stigmatized group. At least two researcher assistants individually reviewed and independently coded all 20 transcripts and then discussed any coding ambiguities and discrepancies. Ten interviews were analyzed for concordance to ensure that the researchers were utilizing the same coding categories across passages, with resulting concordance rates ranging from 95% on major themes to 75% on minor themes, with most discrepancies related to omissions. All interviews were reviewed a final time to ensure the accuracy and reliability of the final set of codes used for the analysis. A fully integrated coding structure, consisting of all mutually agreed-upon codes, was entered into the database as the final coded transcript. Researchers reviewed the transcripts to reevaluate coding categories, as needed. This process ensured that each researcher had the same understanding of each code and allowed for revisions of the coding scheme as necessary to accommodate greater depth of understanding of the data and emergent themes. Once all the transcripts were coded, passages coded with individual themes were extracted from the dataset and summarized, with particular attention paid to a description of the range of responses within each theme. Illustrative quotes were also extracted to facilitate the presentation of the data. Summaries were then interpreted and are described below.

RESULTS

All women recruited for this research were at the treatment center for injection drug use detoxification. The mean age was 33 years and 35% of the women were non-Caucasian. Sixty-five percent ($n = 13$) had a high school diploma or GED, 45% ($n = 9$) were employed, and 45% ($n = 9$) had a permanent residence. Sixty-five percent ($n = 13$) had been tested for hepatitis; of those, 62% ($n=8$) reported being infected with hepatitis C. Twenty percent ($n = 4$) of the women had received at least one hepatitis B vaccine, and of those, only half ($n = 2$) received the full, three-dose series. Eighty-five percent ($n = 17$) of the women had ever been

tested for HIV; none reported HIV infection. Seventy-five percent ($n = 15$) of the women had ever shared needles or other injection equipment.

Six primary themes, both *a priori* and emergent, resulted from an analysis of the women's responses to questions regarding HIV and hepatitis testing, receiving test results, willingness to receive treatment, and attitudes toward hepatitis vaccination (Table 1). The most serious barrier was the prioritization of obtaining drugs over attention to one's health. Participants reported that during times when they were using drugs, they were less likely to get tested, receive their test results, and get treatment for HIV and hepatitis C. The low level of disease-specific knowledge, particularly regarding hepatitis, was the second major barrier. Many women perceived themselves to be at low risk for HIV and hepatitis despite the fact that they injected drugs and shared needles and injection equipment, thereby suggesting their misperceptions about HIV and hepatitis risk factors.

Participants identified their belonging to a stigmatized group as another barrier to their getting tested for HIV and hepatitis, and suggested that they would be more amenable to getting tested at testing sites where the staff was understanding of the disease of addiction. Issues associated with access to HIV and hepatitis C testing and treatment, including transportation to the site, also impacted the women's use of these services. Finally, psychological factors, such as depressive symptoms and fear of receiving a positive test result further deterred the women from accessing testing resources and returning for results.

A single facilitator was identified. Participants' interest in promoting their own health could motivate them to get tested and receive results and treatment for HIV and hepatitis, and seek hepatitis vaccinations.

Theme 1: Prioritization of obtaining drugs

While actively using drugs, the time consumed by obtaining and using drugs interfered with participants' ability to attend to their health needs.

When you're using [drugs] you just don't have time for really anything.... Your basic human concerns become getting money and getting off.... Not your children, not bathing ... [not] updating your wardrobe, not replacing something that's lost, not eating, not sleeping, not taking care of bills, not being responsible. It basically consists of money and using. And worrying how to contact your connections. And trying not to get arrested in the process.... Users have a 25 hour a day job. *33-year-old, white, homeless woman*

I'm an addict, see? ... I care, but the last thing on my mind is going to get tested I got to be tested and I know that. But I care about being an addict more than I care about my health. *23-year-old African American woman, has apartment*

The intention to receive treatment was also hindered by drug addiction. Several of the women recognized that addiction would likely interfere with their ability to maintain treatment regimens for hepatitis and HIV.

What the hell is the point of getting treated if I'm just shooting up every day? It's like neutralization. It's like I'm ruining myself.... Treatment only works if you're working with it.... So I probably wouldn't even bother [getting treated if I had HIV]. *25-year-old, white woman who "always crashes with friends"*

Theme 2: Low level of disease-specific knowledge

Many of the women reported that they had often received information about HIV while in drug treatment centers.

There's constant [HIV] education when you're in any kind of treatment facility or ... detox center. There's always mandatory HIV education.... The education is continual. *33-year-old, white, homeless woman*

Despite their self-reported "constant" HIV education, more than half of the women identified themselves as being at low risk for HIV and/or hepatitis even though they reported having shared needles. They primarily sought testing only if they had a known exposure. When several of the women thought their sexual partners had put them at risk of infections, their first instinct was to get tested for sexually transmitted infections (STI) but not HIV or hepatitis.

My husband was cheating on me with another girl. And she was a prostitute, so I felt that I should go [get tested for STI]. *39-year-old, white woman who "lives with friends"*

Many of the women demonstrated a limited knowledge of hepatitis C.

I [get tested for HIV] because I'm an intravenous drug user. So all that stuff is the same thing isn't it? ... Hepatitis has got something to do with HIV, doesn't it? Your body turns yellow, or some shit like that? No. No. I don't be around yellow people. *42-year-old African American woman lives with her grandmother*

When the women actually got tested and received their hepatitis results, the lack of concrete understanding often left them confused and frustrated. Medical providers were reported to have done an insufficient job of educating patients about hepatitis infection and treatment, and most of the women demonstrated little knowledge about the difficulty of taking interferon, the side effects and the specific qualifications for people who take interferon.

One thing that I know about hepatitis B and C is that there is just no information. I went to the library; I can't find good information. I can't get it from a doctor.... There is not enough education.... I don't know signs, symptoms. I don't know how to make myself well. *40-year-old white woman, has a subsidized apartment*

[My doctor was] on the phone [saying] ... "Well you had A, and we think you have B, but we're not really sure you have B." He was being very evasive and I felt like I couldn't get any ... concrete information from this man. And he didn't have the time to give me some concrete answers about my test results. So I feel like I don't really know. I know I had B because I got sick. *25-year-old white woman who "crashes with friends"*

They ran a normal blood series on me and did the hep detection series. Whatever that is. And the doctor kind of gave me an idea. He was a psychiatrist, so ... that's not his field.... So, he really didn't have much to say about it, but that I should see an infectious disease doctor, or even my MD ... At that point, I could have figured it out. I had insurance. But I went right back to using [drugs]. *33-year-old, white, homeless woman*

When I was pregnant and they said, "You know you have hepatitis C?" And I said, "Yeah, why?" ... They said, "It's no big deal, you don't get sick from that." ... So I thought, why should I even bother following up if I'm never going to get sick? ... Maybe I misinterpreted that.... But I did learn more about it, that yeah, you can get very sick and die from it.... The only thing I know of [is] changing your diet and interferon.... That's the only knowledge I have of [treatment]. *36-year-old, white, homeless woman*

The primary reason named for not receiving hepatitis B vaccination was a lack of vaccine education. In response to questions asking whether they had heard of a hepatitis vaccination, or knew what it was, many of the women reported a lack of knowledge.

Theme 3: Belonging to a stigmatized group

The women identified various stereotypes and stigmas that they confronted as IDUs and described how that stigmatization affected their perceptions of access to care. In particular, the perception that some doctors were “not familiar with the disease of addiction” discouraged some women from returning to their physicians for treatment. The perception that medical providers treat injection drug users differently than noninjection drug users discouraged some women from seeking testing for HIV and hepatitis and from seeking treatment for those who had hepatitis.

[Doctors] are very condescending and don't treat you with the dignity and respect that they would another sick patient who did not have a drug-related disease.... I know that there's got to be certain kinds of doctors who just specialize in junkies. And ... that's their job so they're more sensitive, and they'll work with you and treat you with more respect.” *25-year-old white woman who “crashes with friends”*

They say [if] you're on drugs you don't love your-self. But I love myself 100%.... [Drug use] is something I got into and something I'm sorry I got into.... When you go to the doctor and say, “I have to get tested,” they always look at you like [you're] a crook or something and ... I'm not, so it's embarrassing. *23-year-old African American woman, has apartment*

Respondents did perceive some medical providers as educated about, and understanding of, the disease of addiction. One woman stated her doctor “Doesn't see me as bad. She sees me as sick.” When the participants were in the care of such a provider, they were more comfortable opening up a dialogue with that provider about testing. The drug treatment center was identified as a place where the women felt comfortable receiving medical attention.

If [hepatitis testing] was here, yes [I'd do it]. I'm in treatment. People understand. There's a big difference [when] going to a doctor who has no clue, and [they're] seeing something like that (pointing to her track marks). A lot of doctors are not understanding. *21-year-old, white woman, lives with husband*

General stigma against persons infected with HIV was recognized as another barrier to the women getting tested for HIV.

Why would I see a doctor [for HIV]? ... They'd be trying to make me an outcast. They put a stamp on your head. You don't know that by now? Don't let them try to fool you. People who got AIDS, I don't care if they just have HIV, if you're put in the hospital, you get a stamp on your door.... You're contagious. Period. *40-year-old African American woman, lives with sister*

Theme 4: Access

Many of the women indicated that a lack of transportation hindered their ability to get tested and receive results. Some participants suggested providing HIV results over the phone as a way to facilitate receipt of testing results.

Transportation ... would help a heck of a lot because people are out here catching buses and they're [drug] sick. Who wants to go out there in the snow, rain, sleet, or whatever, even when they're not sick? Let alone when you are sick.... You won't go to an appointment for that. I don't have a car.... I haven't been making my appointments because I don't have a ride out there. And I'm not going to get on no bus and all that shit when I don't feel good. *43-year-old CapeVerdian woman, homeless, hepatitis C infected*

I hate when they want you to come in [for a test result].... You know, that's a big hassle. Why do you have to see my face? Especially if it's negative ...? Why do I have to trek wherever just so you can tell me I'm ok? Why can't you just tell me that over the phone? That would be nice. *25-year-old white woman who "crashes with friends"*

The majority of the participants had not actively sought HIV testing and were tested only when it was offered to them. Many of these women accepted HIV testing that was offered to them while they were receiving drug treatment.

[The staff] asked me if I wanted to get [tested for HIV] and I said, 'Sure. Why not? What do I have to be afraid of?' ...I know that I didn't have nothing. I wasn't doing none of that. *40-year-old African American woman, lives with sister*

Hepatitis C testing had not been offered to the women as frequently as HIV testing had been. While one woman said she sought hepatitis testing "as soon as I started getting yellow," several others stated that they were "never offered any testing" for hepatitis and "didn't know where to go for that."

Some of the women were aware that hepatitis treatment was inaccessible if they were currently injecting drugs. Others perceived treatment, particularly for hepatitis, as inaccessible to people who lacked health insurance.

I thought of it [treatment] a lot. I've got to go to the doctor.... Oh my God, I don't know how much it's going to cost. Let me see if I can get medical first, and then I'll go. *31-year-old white woman, lives with brother*

The inaccessibility of the hepatitis B vaccine was due to a lack of knowledge of the existence, purpose and benefit of the vaccine. Some of the women questioned if they could be vaccinated if they already had hepatitis, and misunderstood the differences between vaccination and treatment. Four women had received at least one vaccination for hepatitis, with only two of those women having completed the entire series.

Theme 5: Psychological factors

Fear of a positive HIV test result prevented some of the participants from getting tested and returning for their results.

I don't want to be tested right now [for HIV].... If I got sick, maybe. If they didn't know what was wrong with me, then yeah, they could test me. *40-year-old African American woman, lives with sister*

Us addicts, we don't want to know that we're sick.... We don't want to know that we have that disease ... that we have AIDS.... It scares people you know? ... Just the thought of it, oh, it would kill me. *43-year-old Hispanic woman, has apartment*

I'm afraid to hear, "You're positive".... When I'm being tested for an STD, besides HIV, I'll call [for the results]. I'll go there, you know. It's just [that] HIV ... kill me. *34-year-old woman, has apartment*

Say I walk in and you say to me, "You have AIDS." I would probably lose it. I would fucking try to run through the window. *21-year-old homeless woman*

Depressive symptoms appeared to cause a general lack of concern for their health. For some, depressive symptoms were an additional factor deterring them from getting tested for HIV.

I just don't care anymore. I just can't get off these drugs. I've been trying to get off these drugs for 2 years, and I can't do it. And it's hard. And I don't like myself on

them, so I don't care either way. I don't care if I die. I'd rather not die from AIDS, but I don't care. It's not good. *39-year-old white woman, lives with friends*

As with fears of a positive HIV test result, the fear of adverse effects from interferon treatment for hepatitis infection was also mentioned as a barrier to treatment by a few women.

I heard that interferon is pretty lousy. I don't even know if I'd want to do that ... because you're sick all the time. You can't sleep, eat.... It's a horrible time, and that's a year. And I have two 3-year olds. I don't think I could do that for a year and take care of them. *36-year-old white, homeless woman*

Theme 6: Interest in promoting their own health

Some participants were motivated to get their HIV test results because they intended to seek treatment if they were infected.

At least you're aware that you have it [HIV]. You can get help for it.... I always want to know because I got a brother who got it. And mostly all my cousins died of AIDS. I like to find out because I've seen them die like that. I got two girls.... They [providers] got all these pills that help. *43-year-old Hispanic woman*

The health benefits of interferon treatment were prominent factors in favor of receiving treatment for some of the women. Some women particularly emphasized their desire to live as long as possible and identified interferon treatment as a way to achieve that goal.

I want to do what I have to do to live as long as I can with it. And get the benefit of anything I can at this point to preserve my liver, and preserve my life. To be a parent as long as I can. I need my liver to be a mom. *33-year-old white, homeless woman*

Although many of the women did not understand how a vaccine works, there were some who understood the benefits and were interested in receiving the series.

I'd run to go get it.... I'd fly if I had wings. *23-year-old African American woman*

DISCUSSION

Female adult IDUs in a drug treatment center in Rhode Island provided insight into the barriers they face for testing, receiving treatment, and obtaining preventative vaccination for HIV and hepatitis. The themes that emerged from this study might best be considered in terms of an accepted behavioral model for disease risk. The Fisher and Fisher model demonstrates that AIDS-risk reduction is a function of information, motivation, and behavioral skills. This model could also be applied to hepatitis B and hepatitis C risk reduction, as the risk behaviors are overlapping for HIV infection, although the diseases are distinct.

One of the six emergent themes demonstrates that disease-specific information is lacking, especially for hepatitis B and hepatitis C. Although the women may have received more HIV and hepatitis education than other substance using women who had not been in treatment, this education was still inadequate. The women's collective knowledge about HIV was markedly higher than their knowledge about hepatitis, which is consistent with prior research findings.¹¹ Knowledge about hepatitis was very limited among this population, which confirms findings of other research.^{25,26}

The remaining five themes can all be considered in terms of motivation. One theme, the interest in promoting their health, was a positive motivator. These women are interested in being healthy, both for themselves, and for their children.

Four themes related directly or indirectly to injection drug use and these each can be considered as negative motivators for preventative behavior. While actively using, these women are primarily concerned with obtaining drugs. This is their primary motivator, and it is a very powerful motivator. Overall depression, and fear of learning they have a disease also serve as negative motivators. The shame and stigma associate with injection drug use is also a negative motivator. And finally, the lack of access to health care is a major barrier.

Ironically, a major barrier to injection drug using women's utilization of HIV and hepatitis services is the drug addiction that puts them at risk in the first place. Some of the women said that they wanted to get tested when they were drug-free, but that logistical barriers, such as lack of awareness of locations offering free testing and lack of transportation to the site, deterred them from getting tested. These barriers to testing, treatment and vaccination have been described elsewhere in regards to concrete needs that prevent women from seeking psychological care and support for HIV.²⁷ On the contrary, many of the women were likely to accept testing that was more readily available to them.^{28,29} Many of the women were afraid of receiving positive HIV test results, yet most of them did not express as much concern over the multiple health and social risks of their injection drug use.

Half of the women perceived themselves to be at low risk for HIV and/or hepatitis, despite self-reported needle sharing. This degree of self-identification as low-risk among this population of injection drug users is an underlying barrier for preventive health services. Because they did not identify themselves as being at risk for infection, many women did not consider getting tested. The perception that testing was unnecessary was especially true for hepatitis, possibly because the women had received little information about their actual risk for hepatitis. Previous research has shown a correlation between lack of knowledge about hepatitis infection and not knowing one's hepatitis status.¹³

To better serve the population of substance abusing women, HIV and hepatitis education should be concurrently delivered. Given that many of the women reported receiving HIV education in short-term drug treatment facilities, hepatitis education could be communicated in those facilities as well. Short-term drug treatment centers are prime sites for providing hepatitis and HIV testing, results, and referrals for treatment. Site staff is familiar with the disease of addiction, and this fulfills the women's desire to be treated and educated by persons who are sensitive to their substance use. At the same time, staff members may be medically knowledgeable and can be trained in delivering hepatitis and HIV prevention messages to their clients.

One limitation to the research was the sampling method. Although this sample size was consistent with the qualitative research goal of gathering extensive information from a small group of people,³⁰ the women interviewed may not generalize to female IDUs who had not been in treatment. This study was not designed to examine participant differences based on race/ethnicity, age, length of substance abuse, and drug preference, hence larger scale studies would need to be conducted to allow stratification by participant characteristics. Because the participants were recruited from a detoxification center, their baseline knowledge of HIV and hepatitis may have been higher than that of an injection drug using population that had not entered substance abuse treatment. Increased knowledge of hepatitis among injection drug users has been correlated with a history of substance abuse treatment.¹³ In addition, the sample of women may have been offered, and may have

accepted, HIV testing more readily than a cohort that had not been in substance abuse treatment.

It is noteworthy that research has shown that drug users are no more likely to report erroneously than non-drug users.^{31,32} However, the potential for socially desirable response bias has been documented in other studies³³⁻³⁵ and represents another potential limitation. Because information was collected through the women's self-report in a face-to-face interview format, the women may have been subject to providing socially desirable responses.

CONCLUSION

Women who inject drugs face multiple barriers in the realm of infectious disease prevention and treatment. When trying to access preventive and treatment services, this population confronts stigma due to their drug usage and logistical barriers to obtaining testing, results and treatment.^{28,29} Compounding those problems is an underlying lack of knowledge about hepatitis in particular, which substance-using women may not recognize as a potential risk. Fear of positive test results is not unique to the substance using population.^{17,21,28} For women in particular, a positive test result may undermine their roles as caretakers.^{28,36,37}

Substance abuse treatment centers present an opportune site for offering comprehensive hepatitis and HIV counseling and testing, results, and referrals for treatment for injection drug users who are hard to reach through primary care medical settings.³⁸ For women infected with hepatitis, drug treatment counselors could provide education on the importance of managing their illness. Developing a model for delivering preventive vaccines to this population, which includes decreasing barriers to vaccination such as by offering vaccinations at community-based settings like methadone clinics or needle exchange programs, is also an important step in improving preventive care for women who inject drugs.

This qualitative study provides insight into a hard-to-reach population, yet further investigation of substance abusing women's readiness for testing and receiving results and treatment for hepatitis and HIV, and getting vaccinated for hepatitis is warranted. The primary facilitator for testing, receiving results and treatment, and being vaccinated was the women's interest in promoting their own health. The importance of caring for their children and having a longer life was a priority for many of the women, yet their substance use often hindered their ability to take care of themselves and their children. Methods for improving the motivators for health, facilitating infectious disease prevention, and decreasing unnecessary disease complications of injection drug using women need to be utilized. These should include strategies that minimize stigma and facilitate accessibility of health care.

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References

1. [August 19, 2005] AIDS Cases by Exposure Category. www.cdc.gov/hiv/stats.htm
2. [November 4, 2005] HIV diagnoses among injection-drug users in states with HIV surveillance—25 States, 1994—2000; MMWR. 2003. p. 634-636. www.cdc.gov/mmwr/preview/mmwrhtml/mm5227a2.htm

3. Gish RG, Afdhal NH, Dieterich DT, Reddy KR. Management of hepatitis C virus in special populations: Patient and treatment considerations. *Clin Gastroenterol Hepatol*. 2005; 3:311–318. [PubMed: 15822034]
4. Alter MJ, Moyer LA. The importance of preventing hepatitis C virus infection among injection drug users in the United States. *J Acquir Immune Defic Syndr Hum Retrovirol*. 1998; 18(Suppl 1):S6–10. [PubMed: 9663617]
5. Lorvick J, Kral AH, Seal K, Gee L, Edlin BR. Prevalence and duration of hepatitis C among injection drug users in San Francisco, Calif. *Am J Public Health*. 2001; 91:46–47. [PubMed: 11189823]
6. Aceijas C, Stimson GV, Hickman M, Rhodes T. United Nations Reference Group on HIV/AIDS Prevention and Care among IDU in Developing and Transitional Countries. Global overview of injecting drug use and HIV infection among injecting drug users. *AIDS*. 2004; 18:2295–2303. [PubMed: 15577542]
7. Wasley A, Miller J, Finelli L. Surveillance for acute viral hepatitis—United States, 2005. *MMWR*. 2007; 56:1–24. [PubMed: 17363893]
8. Appel PW, Ellison AA, Jansky HK, Oldak R. Barriers to enrollment in drug abuse treatment and suggestions for reducing them: Opinions of drug injecting street outreach clients and other system stakeholders. *Am J Drug Alcohol Abuse*. 2004; 30:129–153. [PubMed: 15083558]
9. Knowlton AR. Access to Medical Care and service utilization among injection drug users with HIV/AIDS. *Drug Alcohol Depend*. 2001; 64:55–62. [PubMed: 11470341]
10. [August 19, 2005] www.cdc.gov/idu/hepatitis/vaccines.htm
11. Lundgren L, Chassler D, Ben-Ami L, Purington T, Schilling R. Factors associated with emergency room use among injection drug users of African-American, Hispanic and white European background. *Am J Addict*. 2005; 14:268–280. [PubMed: 16019977]
12. Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Viral Hepatitis. National Hepatitis C Prevention Strategy: A Comprehensive Strategy for the Prevention and Control of Hepatitis C Virus Infection and Its Consequences. 2001
13. Heimer H, Clair S, Grau L, Bluthenthal RN, Marshall PA, Singer M. Hepatitis-associated knowledge is low and risks are high among HIV-aware injection drug users in three US cities. *Addiction*. 2002; 97:1277–1287. [PubMed: 12359032]
14. Kuo I, Sherman SG, Thomas DL, Strathdee SA. Hepatitis B virus infection and vaccination among young injection and non-injection drug users: Missed opportunities to prevent infection. *Drug Alcohol Depend*. 2004; 73:69–78. [PubMed: 14687961]
15. Sylvestre DL. Treating hepatitis C virus infection in active substance users. *Clin Infect Dis*. 2005; 40:S321–324. [PubMed: 15768341]
16. Krain A, Wisnivesky JP, Garland E, McGinn T. Prevalence of human immunodeficiency virus testing in patients with hepatitis B and C infection. *Mayo Clin Proc*. 2004; 79:51–56. [PubMed: 14708948]
17. Sullivan PS, Lansky A, Drake A. HITS-2000 Investigators. Failure to return for HIV test results among persons at high risk for HIV infection: Results from a multistate interview project. *J Acquir Immune Defic Syndr*. 2004; 35:511–518. [PubMed: 15021316]
18. McGarry KA, Stein MD, Clarke JG, Friedmann PD. Utilization of preventive health services by HIV-seronegative injection drug users. *J Addict Dis*. 2002; 21:93–102. [PubMed: 11916375]
19. Valdiserri RO, Jones TS, West GR, Campbell CH Jr, Thompson PI. Where injecting drug users receive HIV counseling and testing. *Public Health Rep*. 1993; 108:294–298. [PubMed: 8497566]
20. Koester, S. *Qualitative Methods in Drug Abuse and HIV Research*. NIDA Res Monogr. Vol. 157. U.S. Department of Health and Human Services; 1995. Applying the methodology of participant observation to the study to injection-related HIV risks; p. 84-99.
21. Downing M, Knight K, Reiss TH, et al. Drug users talk about HIV testing: Motivating and deterring factors. *AIDS Care*. 2001; 13:561–577. [PubMed: 11571004]
22. Small W, Kain S, Laliberte N, Schechter MT, O’Shaughnessy MV, Spittal PM. Incarceration, addiction and harm reduction: Inmates experience injecting drugs in prison. *Subst Use Misuse*. 2005; 40:831–843. [PubMed: 15974143]

23. Knight KR, Purcell D, Dawson-Rose C, Halkitis PN, Gomez CA. Sexual risk taking among HIV-positive injection drug users: Contexts, characteristics, and implications for prevention. *AIDS Educ Prev.* 2005; 17:76–88. [PubMed: 15843119]
24. Patton MQ. Enhancing the quality and credibility of qualitative analysis. *Health Serv Res.* 1999; 3:1189–1208. [PubMed: 10591279]
25. Stein MD, Maksad J, Clarke J. Hepatitis C disease among injection drug users: knowledge, perceived risk and willingness to receive treatment. *Drug Alcohol Depend.* 2001; 61:211–215. [PubMed: 11164684]
26. Carey J, Perlman DC, Friedmann P, et al. Knowledge of hepatitis among active drug injectors at a syringe exchange program. *J Subst Abuse Treat.* 2005; 29:47–53. [PubMed: 15979531]
27. Morrow K, Costello T, Boland R. Understanding the psychosocial needs of HIV-positive women: A qualitative study. *Psychosomatics.* 2001; 42:497–503. [PubMed: 11815685]
28. Spielberg F, Kurth A, Gorbach PM, Goldbaum G. Moving from apprehension to action: HIV counseling and testing preferences in three at-risk populations. *AIDS Educ Prev.* 2001; 13:524–540. [PubMed: 11791784]
29. Bond L, Lauby J, Batson H. HIV testing and the roles of the individual- and structural-level barriers and facilitators. *AIDS Care.* 2005; 17:125–140. [PubMed: 15763709]
30. Patton, MQ. *Qualitative Evaluation and Research Methods.* Newbury Park, CA: Sage Publications; 1990.
31. Goldstein MF, Friedman SR, Neaigus A, et al. Self-reports of HIV risk behavior by injecting drug users: are they reliable. *Addiction.* 1995; 90:1097–1104. [PubMed: 7549778]
32. Needle R, Weatherby N, Chitwood D, et al. Reliability of self-reported HIV risk behaviors of drug users. *Psychol Addict Behav.* 1995; 9:242–250.
33. Vlahov D, Polk BF. Perspectives on infection with HIV-1 among intravenous drug users. *Psychopharmacol Bull.* 1998; 24:325–329. [PubMed: 3153487]
34. Harrison LD. The validity of self-reported data on drug use. *J Drug Issues.* 1995; 25:91–111.
35. Macalino GE, Celentano DD, Latkin C, Strathdee SA, Vlahov D. Risk behaviors by audio computer-assisted self-interviews among HIV-seropositive and HIV-seronegative injection drug users. *AIDS Educ Prev.* 2002; 14:367–378. [PubMed: 12413183]
36. Lawless S. Barriers to accessing treatments for women living with HIV/AIDS: a difference of opinion. *Intl Conf AIDS 1998.* 1998; 12:836. [Abstract 421313].
37. Murphy DA, Marelich WD, Dello Stritto ME, Swendenman D, Witkin A. Mothers living with HIV/AIDS: mental, physical, family functioning. *AIDS Care.* 2002; 14:633–644. [PubMed: 12419113]
38. Lally MA, MacNevin R, Sergie Z, et al. A model to provide comprehensive testing for HIV, viral hepatitis, and sexually transmitted infections at a short-term drug treatment center. *AIDS Patient Care STDs.* 2005; 19:298–305. [PubMed: 15916492]

Table 1**Barriers and Facilitators to Obtaining HIV and Hepatitis Testing, Treatment, and Vaccination among Female Injection Drug Using Women**

| Barriers | |
|--|--|
| Themes | Sub-Themes |
| Prioritization of obtaining drugs | Time dedicated to obtaining drugs |
| | Perception that treatment will not be beneficial because drug use will interfere |
| Low level of disease-related knowledge | Lack of opportunities for hepatitis education |
| | Lack of understanding of test results |
| | Lack of understanding what treatment entails |
| | Lack of knowledge about vaccination |
| Belonging to a stigmatized group | Differential treatment by medical providers |
| | Providers' negative perception of drug use |
| Access | Lack of transportation |
| | Need for actively-offered testing |
| | Perceived cost of treatment |
| Psychological factors | Self-perceived risk |
| | Anticipation of positive test result |
| | Depressive symptoms |
| | <i>Facilitator</i> |
| Interest in promoting one's health | Desire to prolong one's life |