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Pregnancy and Sexual Health Among Homeless Young Injection Drug Users

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Abstract

Research on pregnancy and sexual health among homeless youth is limited. In this study, qualitative interviews were conducted with 41 homeless young injection drug users (IDUs) in Los Angeles with a history of pregnancy. The relationship between recent pregnancy outcomes, contraception practices, housing status, substance use, utilization of prenatal care, and histories of sexual victimization are described. A total of 81 lifetime pregnancies and 26 children were reported. Infrequent and ineffective use of contraception was common. While pregnancy motivated some homeless youth to establish housing, miscarriages and terminations were more frequent among youth who reported being housed. Widespread access to prenatal and medical services was reported during pregnancy, but utilization varied. Many women continued to use substances throughout pregnancy. Several youth reported childhood sexual abuse and sexual victimization while homeless. Pregnancy presents a unique opportunity to encourage positive health behaviors in a high-risk population seldom seen in a clinical setting.

Keywords

Injection drug use; High-risk youth; Pregnancy; Qualitative research; Homelessness

Introduction

An estimated 500,000 to 2 million young people are homeless in the United States (Ringwalt, Greene, Robertson, & McPheeters, 1998). Homeless youth experience substance use, risky sexual practices, victimization, and pregnancy more often than other young people (Clatts & Davis, 1999; Ensign, 1998; Greene & Ringwalt, 1998; Kipke, O'Connor, Palmer, & MacKenzie, 1995; Wagner, Carlin, Cause, & Tenner, 2001). Pregnant homeless women who use substances are at increased risk for certain negative health outcomes, such as premature birth and delivery of a child with low birth weight (Little et al., 2005). The greater frequency

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of pregnancy among homeless youth coupled with the likelihood of adverse outcomes makes pregnancy a serious health concern. Little descriptive data about pregnancy and sexual health among homeless youth, however, have been reported.

Research indicates that homeless youth infrequently and inconsistently use contraception (Anderson, Freese, & Pennbridge, 1994; Anderson et al., 1996; Gelberg et al., 2002; Haley, Roy, Leclerc, Boudreau, & Boivin, 2004; Kipke et al., 1995; Wagner et al., 2001). A study of street youth in Los Angeles, for instance, found that only 40 percent of men and 30 percent of women reported using condoms at last sexual intercourse, and rates of condom use were inconsistent between casual and regular partners (Anderson et al., 1994). The combination of frequently changing sex partners and a lack of contraceptive use with regular sex partners may increase risk of exposure to HIV and sexually transmitted infections (STIs) (Anderson et al., 1994; Haley et al; Rew, 2001; Wagner et al.).

Homeless youth are especially vulnerable to sexually transmitted infections, including hepatitis B and HIV. Estimates of the rate of STIs among homeless youth range from 23 to 46 % (Rew, 2001). In addition to inconsistent condom use, sexual risk factors among drug users include engaging in survival sex, having multiple sex partners, and involvement in high-risk sexual networks involving other IDUs (Booth et al., 1998). Little is known about what motivates homeless youth to engage in protective health behaviors, and limited research exists concerning effective sexual health intervention strategies for youth living on the street.

Substance use during pregnancy is a major public health concern since drugs can negatively impact both a pregnant woman and a developing child. Women who use cocaine during pregnancy, for instance, are more likely to experience spontaneous abortion or miscarriage, premature labor (Chasnoff, Schnoll, Burns, & Burns, 1984; Chasnoff, Burns, Schnoll, & Burns, 1985; Chasnoff, Lewis, Griffith, & Willey, 1989), and infections, including hepatitis B, herpes simplex, and gonorrhea (Richardson & Day, 1991). For a developing child, potential adverse effects of prenatal drug exposure include low birth weight, preterm delivery, reduced head circumference and developmental deficits, including impairments in verbal and abstract/visual reasoning (Chasnoff et al., 1984; 1989; Chasnoff, Landress, & Barrett, 1990; Griffith, Azuma, & Chasnoff, 1994; Ostrea, Ostrea, & Simpson, 1997). Pregnant homeless women are particularly vulnerable since they are likely to encounter situations that encourage continued drug use, such as coping with the difficulties of street life or involvement with a sex partner who uses drugs (Sales & Murphy, 2000).

Prenatal care may ameliorate the adverse effects of prenatal drug exposure. While some research shows that prenatal care was associated with improvements in the birth weight of drug exposed infants (Berenson, Wilkinson, & Lopez, 1996; Chazotte, Youchah, & Freda, 1995; Racine, Joyce, & Anderson, 1993), it is unclear whether prenatal care can compensate for other factors related to poor pregnancy outcomes, including diminished maternal health prior to conception (Kogan et al., 1998; Misra & Guyer, 1998). Research suggests homeless youth who seek prenatal care are more likely to report histories of abuse and exhibit greater frequency of depression and substance use compared to housed youth (Pennbridge, Mackenzie, & Swofford, 1991; Yordan & Yordan, 1995). However, research on pregnant homeless youth who do not seek prenatal care is limited.

Reports of physical and sexual victimization are generally high among street youth (Bourgois, Prince & Moss, 2004; Wagner et al., 2001). Additionally, early sexual abuse has been associated with adolescent pregnancy (Fiscella, Kitzman, Cole, Sidora, & Olds, 1998; Pierre, Shrier, Emans, & DuRant, 1998), and pregnancy and drug use further increases a homeless young woman's likelihood of being victimized. In a study of pregnant drug users, Sales and Murphy (2000) found 79 percent had experienced violence during pregnancy. Furthermore,

research suggests women who experience physical abuse are more likely to use alcohol and drugs (Berenson, San Miguel & Wilkinson, 1992), and this association becomes stronger during pregnancy (Martin, Beaumont & Kupper, 2003). Moreover, Amaro, Fried, Cabral, and Zuckerman (1990) found a woman's alcohol use during pregnancy and her partner's drug use were both associated with increased risk of physical abuse.

This manuscript explores pregnancy and experiences surrounding pregnancy among a sample of young homeless injection drug users (IDUs) in Los Angeles. Utilizing qualitative data collected from both young men and women, we describe homeless youth's accounts of contraception practices, outcome during most recent pregnancy, impact of housing on pregnancy, utilization of prenatal care, patterns of substance use, and histories of victimization. In particular, we examine the dynamic relationships between pregnancy, housing status, access to care, and drug use among these youth.

Methods

The data presented in this report are based on a two-phased study of young IDUs recruited in New York, New Orleans, and Los Angeles as part of a larger project examining health risks associated with ketamine injection. Ketamine is a dissociative anesthetic that has become increasingly popular among groups of young people participating in the club/rave cultures (Jansen, 2001) and young IDUs (Lankenau & Clatts, 2002; Lankenau et al., 2007). Phase One comprised a cross-sectional, ethnographic survey of 213 IDUs recruited in New York, New Orleans, and Los Angeles (Lankenau et al., 2007). Phase Two consisted of a two-year longitudinal study of 101 young IDUs recruited in Los Angeles during Phase One (Lankenau et al., in press). Following the baseline interview, each subject was eligible to participate in a series of five follow-up interviews, which were conducted between May 2005 and March 2007. The second follow-up interview contained detailed questions about pregnancy history. Additionally, subjects retained in the study were asked about subsequent pregnancies during the next three follow-up interviews.

Sampling and Enrollment

Researchers recruited youth in public, non-clinical locations in Los Angeles, such as parks and street settings, using a combination of chain referral sampling (Biernacki & Waldorf, 1981) and targeted sampling (Watters & Biernacki, 1989). Researchers developed rapport with participants by spending several days each week in neighborhoods that attracted groups of young people, which included Venice, Santa Monica, and Hollywood. Eligibility was restricted to persons aged 16–29 years old who had injected ketamine at least once within the past 2 years. A series of screening questions focusing on health behaviors and drug use were used to hide the actual enrollment criteria. Subjects received a $20 cash payment for Phase One interviews and referral information for local needle exchanges, health clinics, homeless shelters, and other service organizations for high-risk youth populations. Following the Phase One interview, locator information, such as telephone numbers and email addresses, were collected from each participant. Additionally, ethnographers provided each participant with a toll-free telephone number that connected directly to the ethnographer's cell phone. Follow-up interviews were conducted either in Los Angeles or over the telephone. Cash incentives increased for each interview by $5, so that participants earned $25 for the first follow-up, $30 for the second follow-up, and so on. Subjects who participated in telephone interviews received respondent payments via Western Union, and one individual received a Postal Money Order. Since follow-up interviews included specific questions on sexual health and victimization, psychological counseling referrals were offered after the interview and during a brief follow-up phone call 24 hours later. Study procedures were approved by the Institutional Review Board at Childrens Hospital Los Angeles.

Measures and Analysis

In addition to ketamine, many other aspects of drug use were probed during Phase One and Phase Two interviews, including histories of lifetime substance use, homelessness, reproductive health, victimization, and other negative health outcomes associated with street life. During follow-up interviews two through five, outcome of the most recent pregnancy was assessed using structured questions that presented subjects with a list of pregnancy outcomes, including birth of a child, miscarriage, termination, and current pregnancy. A series of qualitative questions probed subjects to describe their experiences related to their most recent pregnancy, such as how they confirmed their pregnancy, history of prenatal care, effect on relationship with their sex partner, and what impact the pregnancy had on their lives and subsequent drug use. Lifetime experience of physical and sexual victimization and perpetration was recorded separately from the pregnancy questions during the fourth follow-up interview. In a series of qualitative and structured questions, subjects were asked to describe the context in which violence occurred, if they needed medical care, whether they reported the event, and if drugs or alcohol were used in response to the experience. Most of the data on sexual violence and victimization during pregnancy were captured during these questions rather than during the pregnancy questions.

Only confirmed pregnancy events were included in the analysis. For instance, we did not include women's reports of suspected pregnancies that were never medically confirmed or men's reports of pregnancies in which they disputed paternity. Many of the subjects enrolled in the study were sex partners, which we learned through information volunteered during interviews. Occasionally, sex partners differed in their descriptions of a pregnancy event. In such cases, the pregnancy outcome was recorded according to the woman's response.

All interviews were digitally recorded and transcribed. The six primary themes or sets of findings relating to pregnancy described in the manuscript were guided by exploratory quantitative analysis using SPSS and coding interview transcripts using Atlas.ti. Once a particular theme had been identified, such as pregnancy and housing status, relevant portions of the transcript were coded with Atlas. Quotes included in the manuscript were selected from hundreds of possible coded sections and deemed to be either representative of the larger sample and/or illustrative of a particular experience. The first author, who also did a majority of the interviews included in this analysis, conducted all transcript coding, while the second author periodically reviewed coded transcripts for accuracy and reliability.

After reviewing all interview data, eleven subjects were excluded from the analysis due to unreliable reporting of age and/or history of ketamine use, which resulted in a baseline sample of 101 young IDUs. Among this sample, a total of 70 subjects participated in the second follow-up interview containing questions about pregnancy history. Among these subjects, 41 (58.6%) described involvement in at least one pregnancy event. Only data from these 41 youth will be reported. Victimization and perpetration data are missing for two women and three men who did not complete the fourth follow-up interview.

Results

Demographic Characteristics and Drug Using Histories

Among the 41 subjects reporting a pregnancy, both men and women were largely white (See Table 1). Participants ranged in age from 16 to 28 with an average age of 21.7. Men were nearly two years older than women on average. While no youth reported being gay or lesbian, young women were much more likely to report being bisexual than young men (45.0% v. 4.8%). All were homeless at the baseline interview, and a majority self-identified as 'homeless travelers,' who moved frequently between cities depending on the time of year, police scrutiny, and/or

drug availability (Lankenau et al., in press; Sanders et al., in press). The high-rate of homelessness among the sample may be partially attributed to the targeted sampling methodology, which relied exclusively on street recruitment. While more men than women reported full or part time employment (23.8% v. 10.0%), most described informal work within the "street economy," (Lankenau et al., 2005) such as panhandling, sex work, and drug selling. Nearly all had a history of criminal justice involvement, including arrest or jail. Additionally, more men than women reported history of drug treatment (71.4% v. 50%) and mental health care (85.7% v. 65%). While none reported being HIV positive, women were more likely to be tested for HCV than men (95% v. 81%), and women more commonly reported a positive result (30% v. 14.3%).

The sample reported using a wide variety of drugs within the previous 30 days (see Table 2). A higher proportion of men than women reported using alcohol (95.2% v. 65%), marijuana (95.2% v. 80%), cocaine (52.4% v. 30%), methamphetamine (76.2% v. 60%), and crack (61.8% v. 45%). Men and women reported very similar lifetime injection histories. While all had injected ketamine, over half the sample had injected heroin, cocaine, and methamphetamine. Women were more likely than men (80% v. 61.9%) to have injected 'other drugs', including mescaline and various tryptamines and phenthylamines.

History of Pregnancy and Recent Pregnancy Events

Pregnancy was relatively common during the longitudinal study; a total of 18 unique pregnancy events were reported. Twelve women became pregnant at least once for a total of 14 pregnancy events, which resulted in eight births, four miscarriages, one termination, and one current pregnancy. Of the eight women who gave birth during the study, five were currently caring for this child at the most recent interview. The other three women no longer held custody, and the children were in the care of state agencies or family members. During the same period, four men each reported additional, different pregnancy events, resulting in two terminations and two miscarriages.

When examining the outcome of the most recent pregnancy event for each young person, which may have occurred either prior to or during the longitudinal study, the sample is characterized by both a diversity of pregnancy outcomes, such as births, miscarriages, and terminations, and variations between men and women. Among women, a birth was the most commonly reported outcome (10/20), whereas termination was the most common outcome reported among men (11/21). A higher proportion of women than men reported the most recent pregnancy ended in miscarriage (5/20 v. 3/21). Additionally, one women and one man reported a current pregnancy and expected to deliver a child. Among women, pregnancy outcomes varied by age: women who gave birth to a child were older on average (21.8 year old) than women who terminated (18.8 years old) or experienced a miscarriage (18 years old).

Overall, a total of 81 unique lifetime pregnancy events were reported including pregnancies occurring during the longitudinal study (see Table 3). Among the men, about half (10/21) had gotten a woman pregnant more than once resulting in a total of 46 lifetime pregnancy events. From these reported 46 events, ten children were born to eight men. Among the women, over half (11/20) reported more than one pregnancy resulting in a total of 44 lifetime pregnancy events. From these 44 events, 19 children were born to 12 women. For both men and women the majority of reported lifetime pregnancies did not result in the birth of a child.

Use of Contraception

Infrequent and ineffective use of contraception was widely reported by both men and women. Nearly all youth reported no intention to conceive and commonly reported not using any form of contraception. Furthermore, substance use during sex was frequently associated with the

lack of or ineffective use of contraception. In fact, most men (17/21) and many women (9/20) reported using drugs or alcohol during the sexual encounter when conception of their most recent pregnancy occurred. This man described how substance use was a common occurrence with his sex partner, and preceded a particular pregnancy event:

> Well, of course I was drinking, and of course she was using drugs, but we didn't plan on [getting pregnant].

Condoms were the primary form of contraception. Many reported, however, irregular condom use with their regular sex partner. The cost of condoms was a deterrent for some homeless youth, including this young man:

> We were having unprotected sex three times a day for a month solid and yeah, it was bound to catch up. We were living out in Arkansas, and there was no place to get free condoms, and we were saving money for our trip. And, the frequency – condoms are kinda expensive, you want quality ones, and we were going through them way too fast to afford them.

In addition to condoms, hormonal contraception was infrequently reported. Maintaining the regular dosing schedule required for hormonal contraception was challenging while living on the street and often impractical.

Pregnancy and Housing Status

All of the men and women were homeless at the time of study enrollment. Housing status, however, varied for some during recent pregnancies: both men and women reported moving out of homelessness and securing housing during a pregnancy. Likewise, housing status appeared to impact the outcome of many pregnancies: births were more common among those who were homeless, whereas terminations and miscarriages were more common among those who were housed.

Eight women reported being homeless at some point during pregnancy. Among these women, six delivered a child, one reported a miscarriage, and one was pregnant and planned to deliver. Four of these women reported establishing housing through family assistance after learning they were pregnant. Here, one woman describes how becoming pregnant motivated her to change her behavior, including finding shelter:

> We got really sick of doing what we were doing, and since I was pregnant we knew we had to make some drastic changes.

However, four of the eight homeless women managed to cope with the difficulties of being pregnant, living on the street, and dealing with drug addiction. Here, one young woman describes her third experience being pregnant and dealing with the discomforts of heroin addiction while living on the street:

> At first there was the morning sickness, and that was really bad. But, I mean, I was throwing up a lot from the heroin, anyway. So, it wasn't really anything I wasn't used to. I couldn't keep anything down, though. I couldn't even drink water, which did make it very difficult. But, after that passed, it's been pretty much the same thing… except for the fact that I'm always hungry.

Twelve women were housed throughout their most recent pregnancy, which included living with family, friends, and sex partners, as well as time spent in jail. For some, remaining housed may have involved pleasing a sex partner or maintaining family expectations. In fact, two women recounted seeking a termination in secret while living in the home of relatives, fearing a pregnancy might jeopardize their living situation. Among these twelve women, four gave birth to a child, four reported miscarriages, and four terminated.

Age varied somewhat among women who were housed (N=12) compared to those who were homeless (N=8) during the most recent pregnancy. Housed women were slightly older on average (20.8 years old) compared to homeless women (19.5 years old). However, a greater range of ages, i.e., mid-teens to late 20s, were found among housed women during the most recent pregnancy whereas homeless women were more likely to be in their late teens/early 20s.

Among the men, about half (11/21) were homeless at the time of their partner's most recent pregnancy. Like the women, homeless men were more likely to report current pregnancies or a birth compared with housed males (6/11 v. 1/9). Furthermore, housed men were more likely to report pregnancy terminations than homeless men (6/9 v. 5/11). Two housed men reported miscarriages, whereas homeless men reported none. This man describes the complex family living situation his partner encountered before finally seeking a termination:

> She was trying to keep it from her family. The family she was staying with were Christians. Had she told them she was pregnant, they would have either had her keep it, or kicked her out, and she didn't really have anywhere to go, so she was just kinda hiding it from them.

Access and Utilization of Prenatal Care

Women reported access to a range of prenatal and medical services during pregnancies, such as prenatal vitamins, physical examinations, lab work, and treatment for substance abuse. Lifestyle factors, such as homelessness, a highly mobile existence, or heavy drug use, however, limited some women's use of services.

Most women (16/20) confirmed their pregnancy in a healthcare setting, including a clinic, hospital, physician's office, or during an intake physical while incarcerated. Following confirmation of a pregnancy, women's utilization of available services varied. Four women sought termination services and received no further prenatal care. Eleven women received some form of prenatal care during pregnancy, and all these women either delivered a child or were currently pregnant at last interview. One woman describes the care she received during a high-risk pregnancy with her second child:

> I got care the whole time. I got on methadone and everything. [The healthcare providers] were awesome. They couldn't have treated me better if I'd been the Queen of England.

Two women who did not utilize early prenatal services miscarried within the first few months of pregnancy. Another two women delayed prenatal care between five and seven months due to drug use and travel, and both eventually sought medical attention prior to delivery of a child. In some cases, young women encountered difficulties locating affordable care during their travels to new cities as described by this young woman who was pregnant at the time of interview:

> I tried using Planned Parenthood, but the ones up here don't offer any prenatal care or ultrasounds or anything like that.

Two more women confirmed their pregnancy while serving time in jail or prison and accessed basic prenatal care while incarcerated. This woman learned of her pregnancy in jail, began taking prenatal vitamins, and later delivered her third child:

> I didn't find out [I was pregnant] until I went to jail. They told me I was pregnant. I said, 'I think you better do that test over' because I didn't think I was pregnant. They did it again, and I was pregnant.

Only three women reported no contact with a health professional during their most recent pregnancy. One confirmed her pregnancy with a home test, sought no prenatal care, and

reported miscarrying within the first month, while the other two only discovered their pregnancy after seeking medical treatment following a miscarriage.

Although men's reports of pregnancy testing and history of prenatal care are less detailed than women's accounts, men also reported utilization of pregnancy testing, termination services, and prenatal care. A majority of men (15/21) reported their partner confirmed the most recent pregnancy early through testing administered at home, in a medical clinic, physician's office, or jail. One young man describes how his mother assisted in the discovery of his partner's pregnancy:

> She just thought she was getting fat. She thought she was sick…I don't know when you get morning sickness and what happens. My mom was like, 'Here, take her to the doctor. She's probably pregnant.' …Her stomach was getting big, you know? She's like this skinny girl and her stomach was growing. That's how we found out.

Similar to the women, in cases where men reported prenatal services were utilized, pregnancies usually resulted in a birth. Five of the seven men who reported their partner delivered a child or were involved in a current pregnancy also reported knowledge of some prenatal care obtained during pregnancy. Men's descriptions of prenatal care services included vitamins, physical examinations, and ultrasounds. Of the thirteen men who reported their partner sought no prenatal care during pregnancy, termination services were obtained in ten of these cases and three ended in miscarriage.

Pregnancy and Drug Use

Pregnancy and child birth influenced women's substance using patterns in important ways, which may have also impacted the pregnancy outcome. A majority of women (14/20) reported decreasing or ceasing their use of alcohol or drugs during the most recent pregnancy, which resulted in a diversity of outcomes. Of the nine women who reported a decrease in their drug use, eight delivered children and one had a miscarriage. Among the five women who reported ceasing all drug use during pregnancy, only one gave birth, three miscarried, and one terminated. Women currently caring for a child maintained much lower levels of drug use than prior to pregnancy as this young woman illustrates:

> Yeah, you got to [stop using drugs] because you don't want your child taken. It makes you think, you know, you don't want the drugs- the baby all [messed] up just because of what you're doing.

In contrast, women who lost custody of a child or experienced a miscarriage or termination often resumed substance use, sometimes increasing use for a period following the conclusion of pregnancy. This young woman describes an increase in drug use following the termination of a pregnancy:

It made me really depressed for a little while, and I started doing a lot of drugs. Two women reported an increase in substance use after learning they were pregnant, and both decided to terminate the pregnancy. In some cases, women associated their decision to increase or continue substance use with the choice to terminate the pregnancy, as this woman described:

> If I would have had the baby, [my drug use] would have [changed]. But, I wasn't planning on it, and we were planning an abortion. So, no, I was still using.

Four women reported their drug use continued unchanged and experienced varied outcomes. Two of these women had no prior knowledge of their pregnancy until a miscarriage occurred, another chose to terminate, and one woman was currently pregnant and intended to enter drug treatment.

Men were less likely to report decreasing substance use in association with a pregnancy and reported varied involvement in their partner's pregnancy. Only a few had no knowledge of the event until after a birth, miscarriage, or termination had occurred. More than half the men (15/21) increased or continued unchanged in their drug use during their partner's pregnancy. These two young man describe increased drug use during their partner's pregnancy:

> I found myself using more to forget [the pregnancy] – pretty much booze and the occasional coke and pot.

> I was probably a little more stressed out – probably drinking more – pretty much crystal [methamphetamine] and coke.

Some reported their continued drug use was associated with their sex partner's decision to seek a termination. However, four men reported decreasing their substance use in solidarity with their pregnant partner to encourage minimal drug use during pregnancy. This young man reports decreasing use of methamphetamine during his partner's pregnancy with his second child:

> Man, I came to a dead halt. I must have slept 6 days straight when I first came off [speed]. I mean, I dabbled with it here and there, but I am really slowing off of it because I want to. I can't sit there and do drugs and expect her to keep clean.

Men were similar to women in that unless they were currently caring for a child, substance use patterns resumed after pregnancy concluded as described by this man who recently lost custody of his child to Child Protective Services:

> It hasn't really [affected my drug use]. Well, after the baby was born we started doing drugs again, and we're still doing it to this day.

Sexual Assault and Victimization

A majority of the women (11/20) who experienced pregnancy also reported sexual victimization during their lifetime. Four women reported sexual abuse during childhood and their experiences included genital exposure, molestation, and rape. One reported being sexually abused by an adult family member in the home while three others were abused by youths in the homes of friends or neighbors. None of the four women reported their abuse to family, friends, or police. Two of these women and nine others also reported sexual victimization as young women. For some, victimization occurred upon becoming homeless by men who offered favors, employment, or shelter. Several experienced repeated sexual victimization from strangers, sex work customers, or acquaintances while homeless. This young woman recounts multiple assaults that occurred while sleeping in communal squats:

> Well, I was crying and saying, 'Don't, don't,' and I guess you consider that. Since then it's not been actual sex, but waking up and some guy's trying to grab at me or put his hands down my pants.

The only woman who reported her attacker to the police believed a second more violent assault she experienced a few days later was intended to punish her for putting the first attacker in jail:

> He did it because a few nights before I had been molested by one of his friends, and I put him in jail, and he did that to get back at me.

Both men were ultimately sent to prison. While a few women told friends about their sexual assaults with the hope of retribution, the majority told no one nor did they seek medical attention unless their injuries were severe.

One of the pregnancies reported was the result of a rape by multiple men that occurred in the house of a friend while the woman was housed. She delayed medical attention for three months, and then went to the hospital following a miscarriage without knowing she was pregnant.

Two other women experienced violence while homeless and pregnant and both later gave birth to a child. One woman reported being assaulted at the start of her pregnancy by her boyfriend who was using alcohol and methamphetamine:

> My ex-boyfriend kneed me in the stomach nine times when I first got pregnant, and I had to go to the hospital for it.

Another was victimized at her squat during her sixth month of pregnancy and fell down a hill trying to escape her attacker:

> I woke up with a knife in my face and [male genitals] in my face. I fell down a hill six months pregnant, but the baby was Ok. It's all fucked up, but it all worked out. I'm Ok.

Several men (6/21) also reported sexual abuse and/or victimization. Four men reported sexual abuse as children. Two were abused repeatedly at home by relatives, while two were abused by older youth in the homes of friends or neighbors. Another three experienced sexual victimization as young men while living on the street and two were able to escape unharmed. One man reported multiple coercive sexual situations that occurred in group homes and foster care settings. Furthermore, one man reported being charged with sexual perpetration and served four years in jail for sexually assaulting his foster sister.

Discussion

Pregnancy was a regular and significant concern as indicated by the 18 unique pregnancy events that occurred during this longitudinal study of high-risk youth. The dynamic relationship among pregnancy and housing status, access to prenatal care, substance use, and violence among this sample of homeless youth points to several important findings.

First, the infrequent and ineffective use of contraception reported by this sample reinforces the high probability of pregnancy among populations of high-risk youth. Similar to other studies of homeless youth, many reported no use of contraception with regular sex partners (Anderson et al., 1994; Haley et al., 2004; Kipke et al., 1995; Wagner et al., 2001). Our findings suggest that hormonal contraception was not conducive to homeless lifestyles characterized by transience and unpredictability. Rather, condoms should be more widely distributed among homeless youth, particularly among young homeless IDUs.

Second, pregnancy motivated some homeless young people to establish housing, while also presenting problems for others who were housed. The frequency of miscarriage and terminations among housed youth highlights the impact of marginal housing situations on pregnancy outcomes, which included dependency on sex partners, friends, or other family members, who may not approve of a pregnancy. Our findings support other research indicating a likelihood of housing instability among pregnant high-risk youth (Kowaleski-Jones and Mott, 1998). While high-risk youth who are housed during pregnancy may avoid the discomforts and risks of living on the street, other social pressures within the family, household or relationship may force a mother to choose between housing and personal control over her pregnancy.

Third, while the sample reported access to prenatal and medical services, several women did not receive additional prenatal care after confirming their pregnancy in a medical setting. Significantly, these women were more likely to report a miscarriage, whereas women receiving prenatal care more commonly reported a birth. These findings support other research indicating

that prenatal care improved health outcomes for both the mother and newborn (Berenson, Wilkinson, & Lopez, 1996; Chazotte, Youchah, & Freda, 1995; Racine, Joyce, & Anderson, 1993). Further research is needed to explore patterns of prenatal and medical service utilization among homeless youth.

Fourth, drug use was pervasive among this sample, and many continued to use multiple substances throughout pregnancy. While women commonly reported a decrease in drug use during pregnancy or following childbirth (Kidd and Davidson 2007), few stopped completely. The general decline in drug use reported among young women in this sample was often followed by increased substance use once pregnancy concluded. These patterns highlight the importance of drug treatment and counseling services for pregnant homeless youth, which may also reduce destructive patterns of substance use in response to the emotional challenges associated with pregnancy.

Fifth, sexual victimization was commonly reported during childhood, adolescence, and young adulthood, which is significant since sexual abuse has been linked to early onset of sexual risk-taking behaviors (Fiscella et al., 1998; Haley et al., 2004; Pierre et al., 1998). Ongoing sexual victimization and assault were frequent threats to many homeless women. Given the dangers of living on the street, some women choose to associate with a regular male sex partner to provide protection – even if that relationship was sometimes abusive (Bourgois et al., 2004). While the presence of a male partner may reduce the risk of sexual victimization from other men, the resulting relationship may increase the likelihood of an unintended pregnancy when coupled with a lack of contraception.

Finally, men and women reported pregnancies occurring at a wide range of ages – between 14 and 29 years old. In fact, outcomes during most recent pregnancy varied moderately by age: women who gave birth to a child were older on average than women who terminated or experienced a miscarriage. In addition, the average age of women who were housed was slightly older than that of women who were homeless at time of most recent pregnancy. Thus, among a sample of high-risk youth, pregnant women in their early to mid 20s may be afforded greater access to housing and more resources to deliver a child compared to women in their early to late teens. Pregnant women in their late teens may be particularly vulnerable to homelessness.

This report has several limitations. The sample – primarily young polydrug users with a recent history of ketamine injection - may not reflect the experiences of homeless youth more generally, such as those living in shelters or those with more limited substance using histories. Given the longitudinal study design, overall findings may have been impacted by sample attrition. For instance, youth lost during follow-up may possess different attributes or experiences compared to those retained, such as having greater access to prenatal care or consuming fewer drugs during pregnancy. Individuals were not asked explicitly about violence during pregnancy since history of victimization was explored in a separate interview section. Consequently, more incidents and greater details may have been reported if individuals were asked specifically about victimization during pregnancy. Lastly, findings may be subject to reporting bias since all substance use and health data were obtained through self-report. However, there was high agreement between male and female sex partner accounts of singular pregnancy events, which is indicative of internal validity. Also, since interviews were not administered as part of a medical record and since protection of confidentiality was offered during the consent process, reports about drug use during pregnancy may have been more candidly described than in other interview contexts.

Conclusion

Pregnancy presents a unique opportunity to encourage positive health behaviors among high-risk youth who are seldom seen in clinical settings, yet who are need of a variety of health services. Drug treatment, prenatal services, and counseling for victimization and abuse should be incorporated into clinical settings that offer pregnancy tests for high-risk youth. Furthermore, health care providers should be sensitive to the complex and possibly volatile housing situations among high-risk youth since housing status may impact pregnancy outcomes. Pregnancy was an emotional experience for youth in this study – some expressed excitement regarding future parenthood while others offered painful recollections of pregnancy experiences for which they were not prepared physically, emotionally, or economically. Through discussion, education, and connection with local services, health care providers can assist homeless youth who are pregnant or those with histories of pregnancy assert greater personal control over their sexual and reproductive health.

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Table 1

Demographic Characteristics: Youth with a History of Pregnancy (N=41)

	Total Sample n=41	Women n=20	Men n=21
Mean Age	21.66	20.75	22.52
Race and Ethnicity			
White/Caucasian	73.2%	75.0%	71.4%
Black/African American	2.4%	5.0%	-
Hispanic/Latino	7.3%	5.0%	9.5%
Asian or Pacific Islander	2.4%	5.0%	-
Native American	2.4%	-	4.8%
Multiracial Identity[a]	12.2%	10.0%	14.3%
Sexual Identity			
Heterosexual	73.2%	50.0%	95.2%
Gay/Lesbian	-	-	-
Bisexual	24.4%	45.0%	4.8%
Other/Undecided	4.9%	5.0%	-
High School Graduate or GED	51.2%	55.0%	47.6%
Homeless	100.0%	100.0%	100.0%
Homeless Traveler	73.2%	65.0%	81.0%
Ever Homeless	100%	100%	100%
Employed Full or Part Time	17.1%	10.0%	23.8%
History of Drug Treatment	61.0%	50.0%	71.4%
History of Mental Health Care	75.6%	65.0%	85.7%
Ever Arrested	97.6%	95.0%	100.0%
Ever in Jail	90.2%	85.0%	95.2%
Ever in Prison	12.2%	10.0%	14.3%
Tested for HIV	95.1%	100.0%	90.5%
HIV Positive[b]	-	-	-
Tested for HCV	87.8%	95.0%	81.0%
HCV Positive [b]	22.0%	30.0%	14.3%

[a] Of respondents reporting multiracial ancestry (n=5):

White/Caucasian 10.0%

Hispanic/Latino 40.0%

Native American 40.0%

Middle Eastern 10.0%

[b] Self reported.

Table 2

Substance use: Recent Use/lifetime Injection among Youth with a History of Pregnancy (N=41)

	Total Sample n=41	Women n=20	Men n=21
Past 30 Day Use			
Alcohol	80.4%	65.0%	95.2%
Marijuana	87.8%	80.0%	95.2%
Inhalants	14.7%	10.0%	19.1%
LSD	-	-	-
Cocaine	41.5%	30.0%	52.4%
Mushrooms	7.3%	10.0%	4.8%
Heroin	53.6%	55.0%	52.4%
Methamphetamine	68.4%	60.0%	76.2%
Ecstasy	4.9%	5.0%	4.8%
PCP	-	-	-
Ketamine	39.0%	40.0%	38.1%
Crack	53.6%	45.0%	61.8%
Speedball	17.0%	15.0%	19.1%
GHB	4.9%	-	9.5%
Other Drugs[a]	2.4%	5.0%	-
Lifetime Injection			
Ketamine	100%	100%	100%
Cocaine	75.6%	75.0%	76.2%
Crack	43.9%	45.0%	42.9%
Heroin	85.4%	85.0%	85.7%
Methamphetamine	82.9%	80.0%	85.7%
Other Drugsa	70.7%	80.0%	61.9%

[a]Other drugs include: peyote, mescaline, tryptamines, and phenethylamines.

Table 3

History of Pregnancy Events and Children (N=41)

	Total Sample n=41	Men N=21	Women N=20
Total # of lifetime pregnancy events	81[a]	46	44
Total # of subjects with children	20	8	12
Total # of children	26[b]	10	19

[a] Nine sex partner pairs gave duplicate descriptions of an individual pregnancy event. The total lifetime pregnancy count was corrected to reflect the number of unique pregnancy events reported by the sample.

[b] Three sex partner pairs gave duplicate descriptions of a birth. The total number of children has been corrected to reflect the accurate number of individual children born among the sample.