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Understanding Pregnancy-Related Attitudes and Behaviors: A Mixed-Methods Study of Homeless Youth

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Abstract

CONTEXT—Pregnancy rates are substantially higher among homeless youth than in the general population of youth, yet little is known about homeless adolescents' and young adults' pregnancy-related attitudes and behaviors.

METHODS—Pregnancy-related attitudes and behaviors were examined among two samples of sexually active homeless 13–24-year-olds in Los Angeles County. Data from 37 semistructured interviews conducted in March–April 2011 were analyzed using standard qualitative methods. Data from a structured survey with 277 respondents, conducted between October 2008 and August 2009, were analyzed primarily using regression modeling.

RESULTS—More than half of interview respondents held ambivalent attitudes toward pregnancy, and ambivalent youth reported less contraceptive use than others. The interviews identified several potential influences on pregnancy attitudes: barriers associated with homelessness, readiness to settle down, desire to achieve goals, belief that a child would create something positive in life, and family and partners. In the survey, having positive attitudes toward pregnancy was positively associated with duration of homelessness (odds ratio, 1.6), contact with relatives (1.1) and relationship commitment (1.8); it was negatively associated with frequency of drinking (0.9). Relationship commitment was positively associated with nonuse of an effective contraceptive method at last sex (1.5).

CONCLUSIONS—Effective and accessible pregnancy prevention and family planning programs for homeless youth are needed. Youths' ambivalence toward pregnancy and feelings of relationship commitment warrant attention as possible areas for programs to address.

Pregnancy among U.S. adolescents has fallen steadily since the early 1990s.[1] Despite this encouraging trend, pregnancy rates among homeless youth have remained substantially higher than those of the general population of youth. One nationally representative study found that among females 14–17 years old, 48% of those living on the street and 33% of those living in shelters had ever been pregnant, compared with 7% of those who were stably housed.[2] Regional samples have yielded similar findings.[3–5]

It is not surprising that homeless youth have relatively high lifetime pregnancy rates, given that they are more likely than housed youth to be sexually active and that they tend to initiate sex at a younger age.[6] Studies of homeless youth also tend to show that they have relatively high rates of multiple partnerships, transactional sex and unprotected sex.[3,7–9] Furthermore, several socioeconomic and psychosocial characteristics that are associated with pregnancy in populations of housed adolescents—poverty,[10,11] alcohol and drug abuse,[12,13] poor mental health,[11,14] history of childhood physical or sexual abuse,[15–17] and minority race or ethnicity[10,18]—are more prevalent among homeless than among housed

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youth.[2,19–21] A study that directly examined the correlates of pregnancy among a national sample of homeless youth aged 12–18 found that being nonwhite, feeling abandoned by one's family, dropping out of school and length of time away from home were positively associated with pregnancy; pregnancy was not related to lifetime drug or alcohol use.[22]

Efforts to reduce the pregnancy rate among homeless youth require a better understanding of the characteristics that are associated with their attitudes toward pregnancy. Being favorably disposed to pregnancy may influence youths' contraceptive behavior and thus their pregnancy risk. Among housed youth, positive attitudes toward pregnancy are associated with increasing age,[23,24] Hispanic ethnicity,[25] relatively low educational aspirations or parental monitoring,[25] and good communication with parents.[25] A study of low-income housed adolescents found that depression was positively correlated with desire for pregnancy.[26] For housed teenage women, emotional reliance on male partners has been associated with pregnancy desire.[27] Research is needed to determine whether these same characteristics are relevant for homeless youth, as well as to explore whether characteristics unique to them (e.g., severity of homelessness, degree of transience) may be related to attitudes toward pregnancy.

This study used a mixed-methods approach to examine the pregnancy-related attitudes and behaviors of homeless youth. We first conducted semistructured interviews with 37 sexually active homeless youth on the perceived advantages and disadvantages of a potential pregnancy. The goal of the qualitative study was to generate hypotheses about the psychosocial correlates of pregnancy attitudes and contraceptive use in this population; we supplemented these hypotheses with ones we formed on the basis of findings in the literature. We explored these hypotheses using a structured survey with a probability sample of 277 sexually active homeless youth. The survey assessed their pregnancy-related attitudes and behaviors, the correspondence between their level of motivation to avoid pregnancy and their contraceptive use at last sex, and correlates of their pregnancy-related attitudes and contraceptive use.

METHODS

Sample Selection

Youth were eligible for either arm of the study if they were aged 13–24; were not living with a parent or guardian; were not getting most of their support for food and housing from family or a guardian; had spent the previous night in a place not intended as a domicile (e.g., a shelter, outdoor or public place, or hotel or motel room rented with friends) because they had had no place else to go; and were English-speaking. For the qualitative study, youth also had to have engaged in vaginal or anal sex with an opposite-sex partner during the past three months. Youth provided verbal consent to be screened for eligibility and written consent to complete the interview or survey. The research protocol was approved by the institutional review board of RAND, and a certificate of confidentiality was obtained from the National Institutes of Health.

Qualitative—We recruited youth from one shelter, two drop-in centers and four street sites in two areas of Los Angeles County with relatively large populations of homeless youth. The goal was to obtain about equal numbers of interviews from service sites and street sites, and from males and females. We developed strategies specific to the type of site to randomly select youth for eligibility screening (e.g., we used bed lists at shelters and a random walking technique at outdoor hangouts). In total, 66% of those recruited were eligible, and 90% of eligible youth (37) completed interviews. Youth recruited at service sites were interviewed at those locations, whereas youth recruited at street sites were

interviewed at outdoor locations or nearby venues (e.g., fast-food restaurants) that afforded sufficient privacy. The interviews were audio-recorded and transcribed.

Quantitative—We recruited youth from 22 shelters or drop-in centers and 19 street sites in Los Angeles County. A multistage design was implemented, in which we first developed a list of sites used by homeless youth and then sampled youth within the selected sites. Shelters and drop-in centers were eligible if they were located in the study area and the majority of their clients were aged 13–24 and English-speaking; sites not limited to that age-group were eligible if they had a program geared toward youth. With input from service providers, outreach agencies and homeless youth, we also identified street venues in the study area where homeless youth were known to congregate. We conducted extensive investigations to obtain estimates of the average number of youth served daily by the service sites and the average number who hang out daily at the street venues; this information was used to assign a quota for the number of interviews to be completed at each site, which was approximately proportional to the size of a site.

The second stage of the sampling design consisted of drawing a probability sample of homeless youth from the study sites, using site-specific strategies to randomly select youth to be approached for screening. In total, 78% of those screened were eligible (2% were ineligible because they were not English speakers), and 97% of those eligible (419 youth) completed surveys; our analyses are restricted to the 277 youth who had engaged in vaginal or anal sex with an opposite-sex partner in the past three months. The sampling design deviated from a proportionate-to-size stratified random sample because sampling rates changed during the fielding period, response rates differed across sites and some youth visited these sites more frequently than other youth. We developed and used sampling weights to correct for these deviations[28] and reduce the potential bias due to the differential inclusion probabilities.

Measures

Qualitative—As part of a larger semistructured interview, we administered two pregnancy attitude items that have been associated with contraceptive behavior in previous research:[29] "Thinking about your life right now, how important is it to you to avoid becoming pregnant [getting a girl pregnant]: not at all important, a little important, somewhat important or very important?" and "If you found out that you were pregnant [got a girl pregnant], would you feel very upset, a little upset, a little pleased or very pleased?" After participants rated each item, the interviewer asked them to explain their ratings. Later in the interview, youth were asked to describe their last consensual sexual event with a partner of the opposite sex, including what contraceptive methods they had used.

Quantitative—The structured, interviewer-administered survey covered participants' pregnancy-related attitudes, contraceptive use, and demographic and psychosocial characteristics.

We administered the same two items on pregnancy-related attitudes as used in the qualitative study.[29] Because the distribution of the item on the importance of avoiding pregnancy was skewed, we used a dichotomized version of the item on how they would feel if pregnancy occurred (very or a little pleased vs. very or a little upset) in our analyses.

Youth were asked whether they had used each of the following the last time they had had consensual vaginal or anal intercourse: a new condom that was kept on the entire time, a prescription birth control method (pill, patch, vaginal ring, injectable, implant, IUD or diaphragm)* and withdrawal ("pulling out"). For the regression models, youth were classified as not having used an effective contraceptive method if a condom had not been

used and the female partner had not been using prescription birth control (or its use was unknown). Although transactional sex may impact contraceptive use, we could not examine this as a moderating variable because the number of cases was too small (nine out of 277 last sexual events).

Demographic characteristics assessed were gender, race and ethnicity, and whether the youth had a high school diploma or GED.

Homelessness severity was assessed with two variables. We calculated duration of homelessness by dividing the number of years since the youth had first left home by the youth's age; this measure was standardized so that the sample mean was 0 (standard deviation, 1). We also assessed whether respondents had spent at least one night in the past month outdoors, on the street or in a park because they had nowhere else to stay.

To identify youth who had traveled extensively over significant distances in the United States, we assessed traveler status. This measure was defined as whether the youth had lived in at least two states beside California since leaving home, including at least one state that does not neighbor California.[30]

Depressive symptoms were assessed with a four-item version of the Center for Epidemiologic Studies Depression Scale,[31,32] which asked how often during the past week youth had felt depressed, sad, happy or unable to shake off the blues. Scores ranged from 0, indicating "rarely or none of the time," to 3, signifying "most or all of the time" (Cronbach's alpha, 0.82).

Alcohol use was assessed as the number of days on which the youth had had at least one drink in the past 30 days.

Relationship commitment was assessed with reference to the partner at the last sexual event. Respondents used a four-point scale to rate the extent to which they agreed (1=strongly disagree, 4=strongly agree) with three items: They were committed to the relationship, they depended on their partner for things they needed and their life would be disrupted if the relationship ended. Ratings were combined into a single scale (Cronbach's alpha, 0.60), which is a modified form of scales used in previous studies of relationships and HIV risk, including with homeless women.[33,34]

Personal network characteristics were obtained by asking participants to provide the first names of 20 individuals aged 13 or older with whom they had mutual recognition ("people that you know and who know you") and had had contact of any kind during the past three months. A general name generator allowed for identification of diverse network members, and network size was standardized to maximize comparability of network structure measures across respondents.[35] (Twenty network members is adequate to capture structural and compositional variability present in personal networks.[36]) Follow-up questions obtained information on each network member. From a larger set of network variables, we selected three that the qualitative findings suggested might be relevant to pregnancy-related attitudes and behaviors: number of relatives, number of network members who regularly attended school and had contact with the youth monthly or more often, and number of platonic network members who were perceived to engage in risky sexual behavior (defined as having multiple sex partners, having sex with someone they didn't know or not using a condom with a new partner). The first two of these measures were continuous; the third was coded as 0, 1–2, or three or more.

*Males had the option of responding "don't know."

Analyses

Qualitative—Two analysts independently read open-ended responses to identify general themes.[37] They compared their identified themes, agreed on which ones should be examined and then returned to the interview transcripts to mark instances where each theme occurred. To increase confidence that all instances of a theme had been identified, the analysts independently categorized participants' responses according to these themes and resolved any discrepancies in their classifications through discussion.[38]

Quantitative—Differences in contraceptive behavior by gender and level of motivation to avoid pregnancy were tested using separate logistic regression analyses for each type of behavior. Youth were categorized as being highly motivated to avoid pregnancy if they indicated both that it was very important to avoid pregnancy and that they would be upset to any extent by a pregnancy; they were classified as having a low motivation to avoid pregnancy if they thought it was less than very important to avoid a pregnancy or would be pleased by a pregnancy. Models included gender, level of motivation and the interaction of these two variables. To identify correlates of pregnancy-related attitudes and behavior, we first used logistic regression analysis to examine bivariate associations of each independent variable with the two outcomes (i.e., positive pregnancy attitudes, lack of effective contraceptive use at last sex) in the full sample. We then examined interactions of each independent variable with gender to determine whether associations differed for males and females. Variables that were associated with an outcome at $p<.10$ were included in a multivariate logistic regression model for that outcome.

RESULTS

Qualitative Findings

Almost half of participants in the qualitative arm of the study were male (Table 1). Forty-six percent were white, 16% were black, 27% were Hispanic and 11% were of some other race or ethnicity. Half had graduated from high school or had a GED, and 3% were employed. The mean age of respondents was 19.8; the mean number of years since they first left home was 3.7.

When asked how important it was to avoid becoming pregnant or getting a partner pregnant, 13 of the 17 male respondents and 13 of the 20 females indicated that it was very important. One-quarter of males and half of females indicated that they would be at least somewhat upset by a pregnancy, whereas two-thirds of males and half of females thought that they would be pleased to some extent. (Two males were unsure or did not provide a response.) Participants' explanations of their ratings reflected both negative and positive attitudes toward pregnancy.

Negative pregnancy attitudes—The most common theme youth expressed was concern that the day-to-day realities of homelessness would create structural barriers to raising and caring for a child. A majority of youth (12 males and 11 females) mentioned this. Respondents were concerned about their ability to provide adequate food, shelter and stability to a child while homeless. One 17-year-old female explained why she felt it was very important to avoid pregnancy:

> "I am not financially stable. And if I can't take care of myself, I understand I can't support anyone else. I do get by day by day, but it'd be harder to have a child with me, considering I don't have a stable home."

The second most common theme was not being ready to settle down. Some youth mentioned being too young, immature or unprepared for the responsibilities of parenthood; some had

plans to travel and felt that a child would restrict their freedom. Perhaps reflecting the traditionally greater responsibilities for childrearing borne by mothers, the sentiment of not being ready to settle down was expressed by eight of the 20 females and by four of the 17 males. In describing why she would be a little upset if she found out she was pregnant, one 17-year-old said:

> "I don't think I would be able to take those responsibilities right now…. It would just be another thing to deal with, and especially [since] I'm going to have it with me, for long-term, forever."

A less common theme was that pregnancy would impede or prevent participants' pursuit of a particular goal. This was mentioned by two males and one female; one male and the female specifically mentioned the goal of finishing school. As the 23-year-old female said:

> "I have a lot of goals, and you know, like if I have a baby, then I can't… accomplish those goals like I want to."

Although the influence of family on pregnancy decisions is potentially important for homeless youth, it was mentioned by only two females (one considered it a negative factor, the other a positive). An 18-year-old female described her mother, who was also homeless, as a deterring factor. She commented, with a laugh:

> "My mom will pretty much kill the person who gets me pregnant. Not saying that she will kill him, but she will cause physical pain."

Three males and one female were already parents. In providing firsthand perspectives on raising children while homeless, each of the males spontaneously spoke to the challenges of doing so (although the female did not). A 20-year-old described his experience this way:

> "Well, because of where I'm at right now, I know what it's like to bring kids into this world unprepared. And I had that experience already, and the struggle that came along with it. And I wouldn't want to subject [another child to it]. I'm not going to say it's a burden—a kid—but if you're going to have a kid, that child deserves for at least one parent to be financially stable."

Positive pregnancy attitudes—Positive attitudes toward pregnancy were less common than negative attitudes, although three females and two males spontaneously mentioned a desire to have children at some point. One theme to emerge was that having a child would be creating something positive, such as providing youth with someone to love, or creating or giving life to something. This sentiment was mentioned by five males and three females. When asked why she would be a little pleased if she found out that she was pregnant, one 17-year-old answered:

> "If I had my own kid right now, it would give me something more to look forward to in life, because that would be my kid, and I would take care of him, and I could develop a good relationship with someone, finally. And if it's my kid, I'm going to make sure I take care of my kid better than my mom took care of me."

In response to the same question, a 21-year-old male explained that a child is something that is "going to love you back, and you can love it. [It's] something that I put in this world. It's like it's a gift."

A second positive theme was that having a child would improve respondents' intimate relationships. This was mentioned by four females and one male. For example, when asked what "one of the best things about being a mom would be," one 18-year-old answered:

> "It could bring me and my boyfriend closer.… He's been wanting a kid with me. He's like saying how he has children already, but he really wants a baby, and he wants me to be the mother."

The influence of family was mentioned only by two females, but may nonetheless warrant further attention in terms of its role in pregnancy decision-making. One 17-year-old female described a desire to have children before her grandmother passed away:

> "I want to have my kids before my grandma dies. I might not be ready, but I want my grandma to see my kids, at least one of my kids, because me and her are really close."

Ambivalence—Two-thirds of male respondents and half of females were ambivalent about pregnancy. That is, either their responses to the two pregnancy attitude items were inconsistent (e.g., they considered it very important to avoid pregnancy, but would be pleased to some extent if pregnancy occurred) or their responses to the open-ended questions indicated both negative and positive attitudes. One 22-year-old male, when asked how he would feel if he found out that he had gotten someone pregnant, replied:

> "I'd probably be numb to it. I wouldn't be upset, but I wouldn't necessarily be pleased. I'd be thankful, but then I'd be like worried. I don't know. I'd go through so many different like, heights, like enjoyment, like I'd probably be really sad, and you know, until you're able to find like a middle spot."

None of the 10 females and five of the 11 males identified as ambivalent about pregnancy indicated that they had used a condom at last sex, compared with four out of 10 females and four of six males who were unambivalent. Two of the 10 ambivalent females, compared with four of the 10 unambivalent females, had used a prescription contraceptive. (A number of males were not sure whether their partner was on prescription birth control at the last event.)

Hypotheses generated from qualitative findings—The qualitative results suggested a number of hypotheses about potential correlates of pregnancy-related attitudes and behavior among homeless youth. Given youths' concern that homelessness would make it difficult to raise and care for a child, we hypothesized that severity of homelessness would be inversely associated with positive attitudes toward pregnancy and positively associated with use of effective contraceptive methods at last sex. Another common theme was the notion of not being ready for pregnancy—for example, the youth did not want to settle down yet or felt they were too immature or unprepared for parenthood. The only survey information directly relevant to this theme was whether the youth was a traveler. However, we examined heavy drinking and depressive symptoms as well. Although there is some evidence that substance use and poor mental health are associated with pregnancy among housed adolescents,[11–14] these variables may nonetheless be related to less positive pregnancy attitudes among homeless youth if they contribute to feelings of being unready for parenthood. Some youth described a desire to achieve certain goals, particularly finishing school, as a reason to avoid pregnancy, although this was not common. This led to our hypothesis that homeless youth with a relatively strong school orientation—those who had not yet earned a high school diploma and had more ties with peers who regularly attended school—would have less positive pregnancy attitudes and be more likely to use effective contraceptives than others.

Larger family size has been suggested as a potential risk factor for teenage pregnancy in housed populations,[13] although the literature is mixed with respect to the relationship between pregnancy risk and the strength of ties to family.[23,39,40] Therefore, and because several interview participants mentioned their family relationships when talking about their

feelings toward pregnancy, we hypothesized that homeless youth with more family ties would hold more positive attitudes toward pregnancy and be less inclined to use effective contraceptives. Similarly, several respondents (mostly female) described how having a baby would improve their relationship with a current partner, consistent with prior research on housed female adolescents[27]; thus, we hypothesized that relationship commitment would be associated with holding more positive attitudes toward pregnancy and a lower likelihood of using effective contraceptives. Finally, even though the qualitative themes did not directly implicate social norms, some evidence suggests that the sexual behaviors of homeless youth are related to whether the people around them engage in risky sex[41] or whether these youth feel pressured by others to engage in risky sex.[42] Therefore, we hypothesized that youth with more ties to individuals who are perceived to engage in risky sex would hold more positive attitude toward pregnancy and be less inclined to use effective contraceptives.

Quantitative Findings

Sixty percent of survey respondents were male; 40% were white, while 21% were black, 18% Hispanic and 21% of some other race or ethnicity. Fifty-two percent of participants had a high school diploma or GED; 15% were employed. On average, survey respondents were 20.3 years old and had first left home 4.7 years ago.

Twenty-eight percent of females had been pregnant or tried to get pregnant in the past three months (Table 2); 16% had used prescription birth control at last intercourse. Condom use at last intercourse was reported by 52% of males and 33% of females; withdrawal, by 39% of males and 43% of females. Most youth (75% of males and 71% of females) indicated that it was very important to avoid pregnancy. When asked how they would feel if they found out they were pregnant or had gotten someone pregnant, 75% of females and 57% of males indicated that they would be upset to some extent; 25% and 43%, respectively, indicated that they would be pleased to some extent.

Contraceptive use by gender and motivation—At last sex, 37% of youth had used a condom only, 25% no contraceptive method, 19% withdrawal only, 12% prescription birth control only, and 8% a combination of condom and prescription birth control (Table 3). Although most youth who indicated a high motivation to avoid pregnancy had used an effective method, 32% of highly motivated males and 44% of females had used either no contraceptive or withdrawal. Males were more likely than females to report a combination of condom and prescription birth control, and less likely to not use any method (not shown). Youth with high motivation to avoid pregnancy were more likely than those with low motivation to use a combination of condom and prescription birth control, and less likely to not use a method.

Positive pregnancy attitudes—In bivariate analyses, males were more likely than females to be pleased at the prospect of pregnancy (odds ratio, 2.3—Table 4). The longer youth had been homeless, the more likely they were to have positive pregnancy attitudes (1.4). In addition, relationship commitment and contact with relatives were positively associated with positive attitudes about pregnancy (1.5 and 1.1, respectively). The more network members who regularly attended school that homeless youth had, the less likely they were to have positive pregnancy attitudes (though this result was marginal; 0.9). Having positive attitudes toward pregnancy was negatively associated with frequency of drinking (0.95), and as the number of network members engaged in risky sex increased, the odds of having positive attitudes toward pregnancy decreased (0.3). No significant interactions with gender were found. In multivariate analyses, the positive association with positive pregnancy attitudes remained for males (4.8), duration of homelessness (1.6), relationship commitment (1.8) and number of relatives in the network (1.1). Also, greater

contact with network members in school and frequency of drinking remained negatively associated with positive pregnancy attitudes (0.8 and 0.9, respectively), but the association with number of network members who engage in risky sex was no longer significant.

Lack of effective method at last event—Bivariate results show that relationship commitment was associated with nonuse of an effective contraceptive (odds ratio, 1.6). Compared with youth who had not, those who had recently slept outdoors were more likely to have not used an effective method at last sex (though this association was marginal; 1.7); also, youth with positive pregnancy attitudes were marginally more likely than those with negative attitudes to have not used an effective method (1.6). Males were less likely than females, and blacks were less likely than whites, to not have used an effective method at last sex (0.5 for each); greater contact with network members who regularly attended school was associated with reduced odds of having used an effective contraceptive (0.9). There was a marginally significant interaction (p=.07) between gender and the number of network members enrolled in school, indicating that the association was significant for males (0.9; 95% confidence interval, 0.76–0.95), but not females (0.99; 95% confidence interval, 0.87–1.12); this interaction term was retained in the multivariate model, but was no longer significant. Finally, there was a significant interaction (p=.03) between gender and race or ethnicity, indicating that being Hispanic was marginally associated with a lower likelihood of males' not using effective contraceptives (0.4; 95% confidence interval, 0.13–1.14), but a higher likelihood of females' not doing so (2.4; 95% confidence interval, 0.71–7.76). Because associations with ethnicity were not significant in the full sample or for either gender, this interaction term was excluded from the multivariate model. When all variables correlated with lack of effective contraceptive use at p<.10 were included in the same model, only relationship commitment remained associated with this outcome (1.5).

DISCUSSION

Survey results indicated that about three-quarters of the youth thought it was very important to avoid pregnancy, but far fewer reported using effective contraceptives. Even among youth who were highly motivated to avoid pregnancy, 32% of males and 44% of females had used either no contraceptive method or only withdrawal during their last sexual event. Although there is clearly a need to make family planning and reproductive health services more accessible to homeless individuals,[43] these findings probably cannot be attributed simply to lack of access to condoms, given that free condoms are available through many agencies serving homeless youth in Los Angeles. This apparent disconnect between pregnancy-related attitudes and behavior, found in studies of housed youth as well,[29,44,45] may stem from youths' mixed feelings about the prospect of parenthood. Indeed, one striking finding from this study was the degree of ambivalence expressed by homeless youth, which our qualitative study suggested may be associated with a reduced likelihood of using an effective contraceptive. A review of programs to prevent youth pregnancy concluded that the most effective ones repeat clear and consistent messages about the importance of contraception.[46] Our results suggest that it might also be useful to acknowledge and counteract some of the perceived advantages of pregnancy among homeless youth to reduce their feelings of ambivalence and strengthen their commitment to using effective methods.

Consistent with themes that emerged from the qualitative interviews, our survey data indicated that various social influences are relevant to homeless youths' pregnancy-related attitudes or behaviors. Of particular note, youths' level of relationship commitment was positively associated with their positive pregnancy attitudes and nonuse of effective contraceptives. Relationship characteristics have been linked to patterns of condom use,[47,48] and sex partners may be especially influential in the lives of homeless youth as providers of emotional support, companionship, physical protection and material resources. That

relationship commitment emerged as the strongest correlate of not using effective contraceptives, among the wide range of characteristics that we examined, suggests that it may be a critical issue to address in pregnancy prevention or family planning programs for this population. Although services and interventions for homeless youth tend to be individual- or group-based,[49] couples-based programs may be a promising approach for some youth and deserve more research.

Another social influence finding of note was that greater contact with school attendees was associated with less positive attitudes about pregnancy (and a greater likelihood of effective contraceptive use, although this did not remain significant when other variables were controlled for). The potential influence of prosocial peers on homeless youth is often overlooked,[50] but maintaining regular contact with peers who are in school may help inspire homeless youth to focus on the goals that they would like to achieve, such as finishing their education.

The data also suggest that youth with a greater number of relatives in their network tended to report more positive attitudes toward pregnancy. Although the literature has not been consistent, some evidence suggests that urban females with better familial relations tend to hold more positive attitudes toward pregnancy.[25] Perhaps homeless youth believe that pregnancy will strengthen their ties with family members, or that family members will step in to provide assistance and support if they become pregnant. Regardless, our study yielded no evidence indicating that contact with relatives is related to use of effective contraceptive methods.

Other dominant themes to emerge from the qualitative interviews were the challenges that homelessness poses to caring for a child, and youths' acknowledged lack of readiness or maturity to take on the responsibilities of parenthood. Of the characteristics that we examined with our survey data, alcohol use and homelessness severity emerged as the most important. Youth who drank more frequently tended to have less positive pregnancy attitudes, as expected, but were not necessarily more likely to use effective contraceptives. This may reflect that heavier drinkers are more inclined than others to have sex while intoxicated, which is associated with a higher likelihood of unprotected sex.[47] Our findings on homelessness severity were contrary to expectations and warrant further research. The longer youth had been homeless, the more likely they were to have positive pregnancy attitudes, and in bivariate analyses, those who had recently slept outdoors because of a lack of other options were marginally more likely than others to use no effective method (although this association became nonsignificant after other variables were adjusted for). Perhaps more severely homeless youth, while acknowledging that their living situation poses challenges to caring for a child, view pregnancy as a means of accessing housing and other social services that are available only to families. Or they may view pregnancy as an opportunity to create something positive. Some housed disadvantaged adolescents may desire pregnancy because, in the absence of realistic paths to achieve traditional middle-class markers of adulthood (e.g., college graduation, full-time employment), they view parenthood as an achievable and desirable conveyor of adult status.[51] The same may be true for some homeless youth.

Limitations

This study has several limitations. We were not able to include a more comprehensive battery of pregnancy attitude measures, and we did not ask separate questions of females about whether they had been pregnant and had tried to become pregnant. Given that the semistructured interviews suggested that desire to achieve goals (such as finishing one's education) are related to pregnancy-related attitudes and behavior, it is an additional limitation that we had only indirect measures of this construct in the survey data.

Furthermore, our focus on the last sexual event could not capture typical patterns of contraceptive use. Finally, our results may not generalize to homeless youth in other geographic regions or to non-English speakers.

Conclusion

Many programs that have demonstrated effectiveness in reducing youth pregnancy tend to be school-based or have other features that reduce their direct applicability to homeless youth.[52] Our results point to several issues that may be important to consider in adapting programs or developing new ones specifically for this population: strong feelings of relationship commitment that play an important role in contraceptive decision-making; feelings of ambivalence about pregnancy that may decrease the likelihood of using effective contraceptive methods; and the potentially protective influence of prosocial peers, such as those who are regularly engaged in school. More broadly, homeless youth have urgent needs to create a stable living situation for themselves, complete their education, and prepare for and have access to employment opportunities—all actions that themselves may be effective strategies for reducing unwanted pregnancy. Comprehensive youth development approaches that incorporate academic- and employment-related activities can be effective in reducing pregnancy among disadvantaged youth[53] and may serve as models for pregnancy prevention and family planning programs for those who are homeless.

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Biography

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TABLE 1

Selected characteristics of participants in a mixed-methods study of pregnancy-related attitudes and behaviors of homeless youth, by study arm, Los Angeles, 2008–2011

Characteristic	Qualitative (N=37)	Quantitative (N=277)
Percentages		
Male	46	60
Race/ethnicity		
Black	16	21
Hispanic	27	18
White	46	40
Other	11	21
High school graduate/GED	51	52
Currently employed	3	15
Means		
Current age	19.78	20.30
No. of years since first left home	3.68	4.67

TABLE 2

Percentage of youth in quantitative sample reporting selected attitudes and behaviors, by gender

Attitude/behavior	Males (N=164)	Females (N=113)
Pregnant/tried to become pregnant in past 3 mos.	na	28
Used prescription contraceptive in past 3 mos.	na	19
Used prescription contraceptive at last sex	na	16
Used condom in past 3 mos.	66	55
Used condom at last sex	52	33
Used withdrawal at last sex	39	43
Importance of avoiding pregnancy		
Very	75	71
Somewhat	10	11
A little	3	4
Not at all	12	15
Feeling if pregnancy occurred		
Very upset	25	45
A little upset	32	30
A little pleased	20	15
Very pleased	23	10

Note: na=not applicable.

TABLE 3

Percentage of youth, by contraceptive method used at last sex, according to gender and level of motivation to avoid pregnancy

Method	Total (N=277)	Males		Females	
		High motivation (N=84)	Low motivation (N=80)	High motivation (N=69)	Low motivation (N=44)
Prescription method only	12	7	16	14	8
Condom only	37	51	33	36	17
Prescription method and condom *,†	8	10	10	6	1
Withdrawal only	19	21	9	30	13
None *,†	25	11	31	14	62

* Differences by gender are significant at p<.05.

† Differences by motivation level are significant at p<.05.

Notes: Youth were classified as having a high motivation to avoid pregnancy if they thought it was very important to avoid pregnancy and would be upset by a pregnancy; they were classified as having a low motivation to avoid pregnancy if they thought it was less than very important to avoid a pregnancy or would be pleased by a pregnancy. Comparisons by gender and level of motivation were assessed in separate logistic regression analyses for each type of method.

TABLE 4

Odds ratios (and 95% confidence intervals) from bivariate and multivariate logistic regression analyses assessing associations between selected characteristics and pregnancy-related attitudes and behavior

Characteristic	Positive pregnancy attitudes		Nonuse of effective method at last sex	
	Bivariate	Multivariate	Bivariate	Multivariate
Male‡	2.31 (1.29–4.13)*	4.81 (2.29–10.13)*	0.46 (0.26–0.82)*	0.77 (0.34–1.78)
Race/ethnicity				
White (ref)	1.00	1.00	1.00	1.00
Black	1.45 (0.75–2.81)	na	0.50 (0.26–0.99)*	0.53 (0.25–1.14)
Hispanic	1.26 (0.61–2.59)	na	0.98 (0.47–1.97)	1.16 (0.53–2.55)
High school graduate/GED‡	1.23 (0.70–2.14)	na	0.85 (0.49–1.48)	na
No. in network who attend school	0.92 (0.85–0.99)†	0.82 (0.74–0.92)*	0.92 (0.85–0.99)*	1.00 (0.88–1.14)
No. in network who attend school x gender	na	na	na	0.86 (0.72–1.02)
No. of years since first left home§	1.40 (1.06–1.83)*	1.55 (1.15–2.09)*	1.09 (0.83–1.43)	na
Slept outdoors in past month‡	1.11 (0.62–1.98)	na	1.70 (0.95–3.04)†	1.30 (0.64–2.63)
Had lived in ≥2 states since leaving home‡	0.85 (0.47–1.53)	na	0.75 (0.42–1.34)	na
Frequency of depressive symptoms	1.01 (0.72–1.42)	na	0.85 (0.60–1.19)	na
Alcohol use	0.95 (0.93–0.98)*	0.94 (0.91–0.98)*	1.01 (0.99–1.04)	na
Commitment to recent partner	1.47 (1.05–2.06)*	1.79 (1.23–2.61)*	1.62 (0.17–2.25)*	1.54 (1.08–2.20)*
No. in network who are relatives	1.10 (1.01–1.19)*	1.11 (1.00–1.24)*	0.97 (0.89–1.06)	na
No. in network who have risky sex				
0 (ref)	1.00	1.00	1.00	1.00
1–2	0.29 (0.13–0.65)*	0.42 (0.16–1.06)†	0.68 (0.31–1.51)	na
≥3	0.33 (0.17–0.72)*	0.52 (0.23–1.20)	0.73 (0.35–1.54)	na
Would be pleased by pregnancy‡	na	na	1.64 (0.93–2.88)†	1.48 (0.77–2.84)

*p<.05.

†p<.10.

‡Dichotomous measure. All other characteristics for which no reference category is shown are continuous or scaled.

§Divided by age and standardized. Notes: Gender interactions with each independent variable were tested; none of the interaction terms was associated with positive pregnancy attitudes. For nonuse of effective method, gender had a significant interaction with Hispanic ethnicity (p=.03) and a marginally significant interaction with number of network members who attend school (p=.07). The interaction between gender and Hispanic ethnicity was not included because the associations were not significant in the full sample or for either gender.

ref=reference group. na=not applicable, because item was not included in the analysis.