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Runaway and Pregnant: Risk Factors Associated with Pregnancy in a National Sample of Runaway/Homeless Female Adolescents

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Abstract

Purpose—Homeless youth are at particularly high risk for teen pregnancy; research indicates as many as 20% of homeless young women become pregnant. These pregnant and homeless teens lack financial resources and adequate health care, resulting in increased risk for low–birth-weight babies and high infant mortality. This study investigated individual and family-level predictors of teen pregnancy among a national sample of runaway/homeless youth in order to better understand the needs of this vulnerable population.

Methods—Data from the Runaway/Homeless Youth Management Information System (RHY MIS) provided a national sample of youth seeking services at crisis shelters. A sub-sample of pregnant females and a random sub-sample (matched by age) of nonpregnant females comprised the study sample (N= 951). Chi-square and *t* tests identified differences between pregnant and nonpregnant runaway females; maximum likelihood logistic regression identified individual and family-level predictors of teen pregnancy.

Results—Teen pregnancy was associated with being an ethnic minority, dropping out of school, being away from home for longer periods of time, having a sexually transmitted disease, and feeling abandoned by one's family. Family factors, such as living in a single parent household and experiencing emotional abuse by one's mother, increased the odds of a teen being pregnant.

Conclusions—The complex problems associated with pregnant runaway/homeless teens create challenges for short-term shelter services. Suggestions are made for extending shelter services to include referrals and coordination with teen parenting programs and other systems of care.

Keywords

Homeless adolescents; Runaway youth; Adolescent health; Teen pregnancy

Rates of pregnancy among adolescents in the United States decreased from 1991 to 2005 by 35%, but increased by 3% in 2006 [1]. Despite fluctuations, the U.S. has the highest rate of teenage pregnancies and birth in the western industrialized world. In 2004, 41 of 1000 female adolescents aged 15–19 years gave birth, translating to 415,262 live births [2] and indicating that teen pregnancy remains a serious public health challenge. Childbearing during adolescence has been associated with a variety of negative maternal consequences; teen mothers are more likely to drop out of school, to remain unmarried, and to live in poverty. Their children are more likely to be born prematurely at low birth weight, to live in impoverished single-parent households, and to enter the child welfare system [2,3]. Infant mortality during the first year of life is also higher among babies born to adolescents than to mothers >20 years of age [4].

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One group of youth particularly at risk for pregnancy is runaway/homeless adolescents [5,6]. These are young persons who stay away from home at least overnight without the permission of a parent or guardian and who live in unsupervised locations or circumstances, such as with strangers, in shelters, in public places such as parks or highway underpasses, or in shared rented rooms [7,8]. Youth report running away because of familial abuse and neglect or being forced to leave their homes because of conflict with parents about substance use, sexual orientation, familial relationships, and domestic violence [9–11]. Research has shown that runaway/homeless females are four times more likely to become pregnant than their non-runaway peers [12]. One multicity study found that 48% of youth who predominately lived on the streets and 33% of youth living in emergency shelters reported at least one pregnancy during their lifetime, which is markedly greater than the <10% rate found among youth in the general population [13].

The explanation for the higher rates of pregnancy among homeless/runaway youth is multifaceted. Ecological systems theory proposes a framework of multiple domains of risk, including individual, family, and community [14]. A number of factors have been suggested for teen pregnancy; these include individual risk factors such as substance use, lack of knowledge of or resistance to contraceptive use, and low motivation for academic achievement, as well as family factors such as lack of intrafamilial support, sexual and physical abuse, and single-parent families [15–17]. Combinations of these risk factors are also frequently found among youth living in unstable conditions in which economic hardship is common [5,18,19].

Compared with nonhomeless youth, homeless/runaway adolescents report elevated rates of sexual risk behaviors. They tend to initiate sexual intercourse at a much earlier age, have a greater likelihood of multiple sex partners, report inconsistent condom or other contraception use, have sex while intoxicated, and may trade sex for money, shelter, or drugs [20–22]. Homeless adolescent females may be vulnerable to predatory males who force them to trade high-risk sexual behaviors for drugs or basic subsistence [23]. In addition the expense and consistency required for effective use of contraceptives is often prohibitive for young women who are homeless. Consequently youth who live on the streets for longer periods of time have significantly higher risk of teen pregnancy than newly homeless youth [24].

Runaway/homeless young women who become pregnant do so at a time in their development when they are least prepared economically, physically, and emotionally to care for an infant. They typically lack the skills and education necessary to obtain and maintain gainful employment, and many engage in prostitution, drug dealing, and other criminal behaviors to survive [25]. These adolescents have more medical problems and poor birth outcomes because they are less likely to receive adequate general medical care, reproductive health care, and prenatal care or to meet recommended nutritional intake [6,26].

Although this is a highly vulnerable group of young females, few studies have examined the factors associated with pregnancy among homeless/runaway females on a national level. Thus this study aimed to further elucidate the intersection of adolescent homelessness and pregnancy by pursuing two research questions in a national sample of homeless female adolescents: (1) What are the differences between runaway/homeless females who are pregnant compared with those who are not, and (2) what demographic, individual factors, and family factors predict current pregnancy? Recognizing the myriad reasons for youths' histories of problem behaviors, identification of characteristics associated with pregnancy in homeless youth may be useful in designing and improving services that target the unique needs of some of this nation's most disadvantaged and underserved adolescents.

Methods

Sample and sampling procedures

Data from the 1997 Runaway/Homeless Youth Management Information System (RHY MIS) were analyzed. This Administration for Children and Families (ACF) database is used by youth crisis shelters (serving runaway youth between 12 and 18 years of age) and transitional living programs (serving youth >18 years of age). Basic crisis shelters have developed to address the needs of runaway/homeless youth and to provide various short-term crisis services, with the intention of stabilizing family relationships and attempting reunification or placement of these individuals in other appropriate settings. Each individual is assigned a unique identification number, and agencies can initiate or augment existing records. Data include demographics, youths' characteristics, and family/household problems. Basic information is collected during the youths' intake interviews, whereas more sensitive information is assembled by shelter staff throughout the shelter stay. Currently the RHY MIS data is the only data available on runaway/homeless youth who access shelter services nationwide. Conducting secondary analyses of these de-identified data was approved by the State University of New York's Institutional Review Board.

The RHY MIS data were compiled from 332 participating agencies across the United States and included 84,846 records. After removal of duplicated cases ($n = 18,861$, 22%), cases were eliminated if the case was not designated as runaway/homeless ($n = 41,233$, 48.6%) and if the youth's age was <12 years or >18 years ($n = 8315$, 9.8%). Federal guidelines mandate that youth shelters serve only this age group. Of the remaining 16,438 cases, 60% ($n = 6576$) were female; among the females, 7% ($n = 476$) reported that they were currently pregnant. A matched sample of nonpregnant female adolescents was then randomly selected based on age. Specifically the same number of pregnant females in each age category was randomly selected using the SPSS v.14 software (SPSS Inc., Chicago, IL) random sample generator ($n = 475$). This process produced a final sample of 951 cases.

Variables

This study aimed to identify individual and family risk factors associated with pregnancy in female runaway/homeless youth. Many of the variables were collected as categorical level variables, and all information was self-reported by the teen participants. The dependent variable was a dichotomous measure that asked, "Is the youth pregnant?" (1 = yes, 0 = no).

Independent variables included youth demographics, individual youth characteristics, and family factors. Variables chosen for analyses were based on the "risk framework." Previous research indicating youths' demographics, educational characteristics, criminal behavior, substance abuse, and parental conflict are related to youths' runaway behavior and teen pregnancy [7,8,12,16,27,28]. In addition parental characteristics such as substance abuse, physical abuse, and neglect of the youth have also been shown as risk factors for homeless youth problems [19,22,29] and were included as relevant family-level risk factors.

Independent variables were collected in RHY MIS as dichotomous or categorical level variables except age, number of times that the individual ran away, and number of living situations in the previous month. Youth demographics included years of age, ethnicity (1 = European American, 2 = African-American, 3 = Hispanic, 4 = Native American/American Indian, 5 = Asian), school status (1 = dropped out, 0 = completed or currently enrolled in school), and number of days away from home (1 = 1 day, 2 = ≥ 2 days). Individual risk factors included whether the adolescent had problems in specific areas (1 = yes, 0 = no), including physical and psychological problems (i.e., feeling abandoned or suicidal) and/or delinquent

behaviors (criminal or juvenile justice charges, gang involvement, high-risk sexual behaviors, and substance use problems).

Family risk factors included variables that measured family structure (1 = single-parent household, 2 = two-parent household), whether the youth lived with parents at the time she was admitted to the shelter (1 = yes, 0 = no), and types of abuse perpetrated by mothers and/or fathers (sexual, physical, emotional, neglect, with each coded 1 = yes, 0 = no).

Statistical analysis

Frequencies and means were calculated for sample demographics, followed by bivariate analyses (Chi-square and *t* tests). These were conducted to test for significant associations between the youth and family factors and the dichotomous pregnancy variable. In addition these analyses identified differences between pregnant and nonpregnant runaway females across the various independent variables.

Maximum likelihood logistic regression models were computed to examine the level of association between youth and family factors on pregnant/nonpregnant status. Independent variables significantly related to the dependent variable on a bivariate level were entered into the model. Nominal level, independent variables with more than two categories were transformed into dummy variables and assigned reference categories. These categorical variables yield odds ratios (ORs), which reflect the positive response relative to the reference category, after controlling for all other effects in the model. For this study, the ORs reflect the likelihood of the female adolescent being pregnant at the time of admission to the shelter relative to the occurrence of individual and family risk factors.

Results

Sample demographics

As shown in Table 1, the overall sample ($N = 951$) of female youth averaged nearly 17 years of age (mean = 16.6, $SD = 1.3$). Although most of these youth were European American (58.7%), substantial percentages were African-American (23.2%) or Hispanic (12.8%). Approximately one-fourth had dropped out of school (24.7%) and many had used alcohol (75.4%) or illicit drugs (61.2%). A minority of youth were living at home with parent(s) or another adult before seeking shelter services (38.3%), and youth reported running away an average of four times (mean = 3.8, $SD = 6.86$). More than one-third of these young women (34.8%) reported that they had contemplated suicide. A substantial proportion also reported parental abuse: 33.2% reported being physically abused by their fathers or mothers, and 11% reported being sexually abused by their fathers.

Differences between pregnant and nonpregnant youth

Results of Chi-square and *t*-test analyses indicated significant differences between female youth who had experienced pregnancy and those who had not (Table 1). The group of pregnant young women included more African-American (26.9%) and Hispanic (16%) youth and fewer European American youth (52.1%) than the nonpregnant group, which had a higher percentage of European American individuals (65.3%). A significantly higher proportion of pregnant adolescents had dropped out of school (32.8%) than had nonpregnant adolescents (16.6%), had stayed away from home more than 2 days during the current runaway episode (72.5% vs. 63.4%), and had lived in more places (2.1 vs. 1.8). Pregnant youth had significantly greater physical and mental health risks than their nonpregnant peers: a greater proportion reported having sexually transmitted diseases (6.3% vs. 2.8%) or feeling abandoned by their families (29.8% vs. 15.9%). Regarding delinquent behavior, significantly higher proportions of pregnant female adolescents were on probation (6.5% vs. 3.5%), reported misdemeanor

charges (15.6% vs. 10.5%), or reported charges for felony offenses (5.6% vs. 2.4%) than nonpregnant counterparts.

Family factors differed between pregnant and nonpregnant female adolescents (Table 2). Fewer pregnant teens lived in two-parent household (22%) than nonpregnant ones (32.5%), and fewer pregnant teens were living in the parental household at the time of admission to shelter services (32.1%) compared with nonpregnant teens (44.6%). Pregnant teens were less likely to leave the shelter and return to parental homes (44.5%) than were their nonpregnant counterparts (55.4%). Surprisingly, nonpregnant youth experienced a higher proportion of physical abuse from their mothers (20.3%) and their fathers (19.4%) than did pregnant youth (15.1%, 13.8%, respectively). However pregnant adolescents had significantly higher rates of emotional abuse (35.4%) or neglect by their mothers (27.2%) than did nonpregnant adolescents (28.5% and 20.7% for these risk factors, respectively).

Factors associated with pregnancy

Logistic regression analyses demonstrated that older youth ($OR = .89$) and European American youth ($OR = .61$) were significantly less likely to be pregnant at shelter admission (Table 3). Female adolescents who reported being away from home for longer periods were more likely to report being pregnant ($OR = 1.39$), and those who dropped out of school were more than twice as likely to be pregnant ($OR = 2.18$). Health and mental health issues were significant predictors of pregnancy; adolescents who reported they had experienced a sexually transmitted disease ($OR = 2.15$) or felt abandoned ($OR = 1.46$) were more likely to be pregnant. Although no delinquency factors significantly predicted pregnancy, several family factors did have significant effects. Individuals who had lived in two-parent households ($OR = .75$) were 25% less likely to have been pregnant. Emotional by from one's mother significantly increased the likelihood of pregnancy ($OR = 1.51$); however physical abuse by one's mother was associated with decreased risk of pregnancy ($OR = .53$). The overall regression model was significant ($\chi^2 = 93.81$ ($df = 16$), $p < .001$) and accounted for 10% (Cox and Snell $R^2 = .10$) of the variance in youths' current pregnancy.

Discussion

Research indicates that pregnancy presents a challenge for any teenager and that those difficulties are amplified for runaway/homeless youth. This study is among the first to investigate factors associated with pregnancy and runaway behavior among a national sample of female adolescents accessing emergency youth shelter services. Although the rates of runaway/homeless adolescents who reported being pregnant at shelter entry cannot be stated definitively, similar rates have been reported indicating that approximately 5% of homeless youth are parents [30].

Characteristics of pregnant youth

Regarding differences between pregnant and nonpregnant runaway youth, this study's findings support previous research [5,16,24] that suggests that pregnant homeless adolescents often have complex profiles consisting of a constellation of high-risk individual characteristics, health-compromising behaviors, and poor family functioning. Pregnant runaway adolescents were characterized as being less connected to their schools, to their parents, and to society as evidenced by higher reports of delinquent behavior than for their nonpregnant runaway counterparts.

Particularly noteworthy was the higher percentage of pregnant teens who reported not living with their parent(s) at the time of shelter admission, living in more than two residences during the previous month, and being away from home for longer periods in comparison to their

nonpregnant counterparts. This combination of factors suggests these young women had experienced long-term family difficulties and discord, a challenge common to many runaway/homeless adolescents [29] and the primary motivation for running away that many report [31]; yet these findings indicate disrupted family relationships that are significantly greater than the typical runaway youth.

Delinquent and criminal behaviors were also risk factors among pregnant female adolescents, as a significantly greater percentage reported being on probation or being charged with a misdemeanor or felony than did their nonpregnant counterparts. Considering that those who spend longer periods of time without adult supervision and in the company of deviant peers are significantly more likely to engage in delinquent behavior [32,33], it is likely that these behaviors co-occurred with the adolescents' pregnancies. It is unknown whether these behaviors were precursors to pregnancy or, rather, results of the pregnancy, whereby the adolescent engaged in illegal behavior(s) to provide for and protect herself and her unborn child. The causal order of these problems cannot be determined from this cross-sectional analysis; however the fact that adolescents were pregnant at the time of shelter entry suggests that the reported delinquent behavior is likely to have occurred either before or concurrent with the pregnancy.

Predictors of pregnancy

Of individual-level risk factors, being an ethnic minority significantly predicted pregnancy. The elevated rate of teen pregnancy among minority females has been documented in broader populations. For example, in 2003, rates of teen pregnancy for black and Hispanic women were at least twice the rate for white adolescents [2]. These adolescents are also more likely to come from lower socioeconomic backgrounds and from single-parent families [34], factors associated with risk for teen pregnancy. Furthermore, research in African-American female populations indicates difficulty negotiating condom use with sexual partners, which increases the risk of unwanted pregnancies [35]. To reduce health disparities among minority teens, research suggests targeting dating/sexual behaviors that increase age of first date, alcohol consumption, and sexual experience [17]. Further research is needed to elucidate the additional stressors associated with ethnicity that increase the risk of pregnancy among homeless minority youth.

Findings from this study support previous suggestions that runaway/homeless youth have a clustering of sexual risk behaviors [36]. Youth who reported having a sexually transmitted disease (STD) were more than twice as likely to report pregnancy as were youth without STD. This clustering of sexual risk behaviors suggests that youth who disclose one factor should be closely screened for other risky sexual behaviors and should be provided with preventive sexual health education to help prevent further health problems.

Another individual risk factor that predicted pregnancy was dropping out of school; in fact youth who dropped out of school were more than twice as likely to report being pregnant. It is likely that youth who have limited housing stability experience greater educational problems and thus limited exposure to positive experiences in educational settings. Housing instability is associated with an inability to attend school, as basic needs overshadow educational involvement [11]. Absence from school may also decrease development of positive peer relationships and may increase peer pressure from peers in similar situations who engage in high-risk activities, including risky sexual behaviors that lead to sexually transmitted diseases [34]. Another potential explanation found in previous research is that teen pregnancy may exacerbate school problems by creating even greater obstacles to attending traditional schools [37].

Numerous areas of family dysfunction were also identified as significant predictors of pregnancy. Youth who were from single-parent families, felt abandoned by their parents, and reported emotional abuse by their mothers were more likely to report being pregnant. These risk factors underscore the significance of negative family relationships as predictors of teen pregnancy among runaway youth. It may be that family relationship problems escalate when a teen becomes pregnant, making the family environment an unhealthy, unsafe place for the adolescent. Experiencing maternal emotional abuse appears to be especially detrimental. In cases in which family counseling is used for families of runaway/homeless females, particular attention should be paid to repairing mother–daughter relationships as means of preventing unwanted pregnancy. Considering previous research indicating that serious family dysfunction may escalate into physical abuse or other forms of maltreatment [38] and that physically and sexually abused youth exhibit more severe runaway behaviors [24], it was surprising that neither physical nor sexual abuse by one's father significantly predicted pregnancy. It was further unexpected that experiencing physical abuse by one's mother was associated with decreased risk of pregnancy. One possible explanation is that pregnant youth, more disconnected from their families in regards to time away from home and plans to return to home, were less likely to discuss familial abuse with shelter staff. This could be an artifact of data collection methods that did not include a uniform survey of every youth regarding abuse history.

Study limitations

Although these findings provide valuable knowledge about a particularly vulnerable population of young women, several study limitations must be considered. First, causal order cannot be determined because of the cross-sectional design of this study. To address this limitation, use of multivariate models were used to enhance the ability to control for alternate hypotheses while increasing the credibility of causal inferences drawn from these data.

Second, RHY MIS data include a sample of runaway/homeless youth who enter services at federally funded youth emergency shelters. The sample does not include “street youth” who do not use shelter services, a subpopulation likely to be more immersed in street culture and thus likely to have increased risks of deviant behavior and related health concerns as well as different service needs compared with youth seeking shelter services [39,40]. It is unclear what proportion of this sample were thrown out of their homes by parents vs. running away on their own; throwaway youth are known to have elevated risk profiles that include increased suicide attempts, drug use, and familial drug use [13]. Future research is needed to understand issues unique to homeless adolescents who do not utilize services, as well as other subtypes of runaway/homeless youth.

Third, although the sample size was large enough to have sufficient power for most analyses, a few variables such as sexual abuse were reported by only small numbers of youth. The limited numbers of youth reporting these experiences offer limited variability for those particular factors and may decrease the likelihood of finding effects. Finally, these data were collected by individual agencies nationwide, without standardized questions or discrete definitions. Thus the accuracy and consistency of measurement within and across agencies is unclear and raises concerns about the reliability and validity of these data. Although these limitations require viewing the results with caution, the RHY MIS dataset is the only available data collected on homeless/runaway youth on a national scale.

Practice and policy implications

Given the broad policies associated with delivering services to this population, findings may be useful in identifying the service needs of homeless/runaway youth who are pregnant. These findings suggest directions in developing prevention efforts that target homeless youth whose

risk profiles associated with pregnancy include dropping out of school, staying away from home for long periods, engaging in unsafe sex practices, and experiencing emotional abuse in the home. The multiple problems associated with pregnant runaway/homeless teens are nearly impossible for short-term shelter services to address on-site. However shelter providers can extend services beyond providing immediate medical care and basic services to providing referrals to other systems of care. For example, coordination between shelters and teen parenting programs is recommended. Discharge from shelter services must include attention to housing stability and safety planning for both the youth and their children. Service providers must respond through strategies that help the pregnant teen to recognize the complexity of her problems and to take steps to overcome them rather than simply running away. Services that focus attention on substance abuse, criminal behaviors, impaired family functioning, and educational difficulties are especially needed for these youth [29].

There is also need for post-shelter care to provide educational and emotional support. Recent prevention efforts have aimed to decrease youths' risk factors while increasing protective factors; thus interventions in families with high levels of conflict should include programming to address teen pregnancy prevention, safe-sex practices, and sexual/reproductive health education. Further research is needed to evaluate the programs available to these youth, the barriers to use, and outcomes associated with service use. Such information would assist in tailoring community services that would respond to the differential needs of these high-risk individuals.

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Table 1
Sample characteristics and group differences of individual youth factors

Individual factor	Total sample N = 951	Pregnant n = 476	Nonpregnant n = 475	Chi-square or t-test
Ethnicity				20.03***
European American	558 (58.7)	248 (52.1)	310 (65.3)	
African-American	221 (23.2)	128 (26.9)	93 (19.6)	
Hispanic	122 (12.8)	76 (16.0)	46 (9.7)	
Native American	32 (3.4)	16 (3.4)	16 (3.4)	
Asian	18 (1.9)	8 (1.7)	10 (2.1)	
Dropped out of school	228 (24.7)	152 (32.8)	76 (16.6)	32.79**
Days stayed away from home (>2 days)	647 (68.0)	345 (72.5)	302 (63.4)	9.13**
Youth's age (12–18 years)	16.60 ± 1.3	16.60 ± 1.3	16.60 ± 1.3	.00
No. of living situations in past month	1.92 ± 1.9	2.05 ± 2.1	1.78 ± 1.6	–2.27*
Physical and mental health				
Had sexually transmitted disease	42 (4.6)	29 (6.3)	13 (2.8)	6.24*
Felt abandoned by family	188 (20.4)	115 (29.8)	73 (15.9)	11.33**
Attempted suicide	213 (22.9)	111 (23.8)	102 (22.0)	14.54
Delinquent behavior				
Probation/suspended sentence	46 (5.0)	30 (6.5)	16 (3.5)	4.36*
Misdemeanor	120 (13.0)	72 (15.6)	48 (10.5)	5.28*
Charged with a felony	37 (4.0)	26 (5.6)	11 (2.4)	6.20*
Gang involvement	80 (8.7)	48 (10.4)	32 (7.0)	3.35
Survival sex	15 (1.6)	10 (2.2)	5 (1.1)	1.65
Ever drank alcoholic beverages	517 (75.4)	262 (77.3)	255 (73.5)	2.35
Ever used illicit drugs	474 (61.2)	238 (62.3)	236 (60.2)	.36

Data are number (%), by Chi-square test, or are mean ± standard deviation by t test.

Freq = frequency.

*
p < .05

**
p < .01

p < .001.

Table 2
Sample characteristics and group differences of family factors

Family factor	Total sample N = 951	Pregnant n = 476	Nonpregnant n = 475	Chi-square test
	Freq (%)	Freq (%)	Freq (%)	
Lived in two-parent household	260 (27.3)	105 (22.0)	155 (32.5)	14.59**
Lived with parent(s) at shelter admission	359 (38.3)	151 (32.1)	208 (44.6)	15.67**
Sexually abused by father	42 (4.6)	21 (4.5)	21 (4.6)	.01
Physically abused				
Mother	163 (17.7)	70 (15.1)	93 (20.3)	4.19*
Father	153 (16.6)	64 (13.8)	89 (19.4)	5.16*
Emotionally abused				
Mother	295 (32.0)	164 (35.4)	131 (28.5)	5.02*
Father	194 (21.0)	96 (20.7)	98 (21.4)	.05
Neglected				
Mother	221 (24.0)	126 (27.2)	95 (20.7)	5.37*
Father	152 (15.9)	84 (18.1)	68 (14.8)	1.85

Freq = frequency.

* $p < .05$

** $p < .01$.

Table 3

Logistic regression to predict teen being pregnant/nonpregnant

Risk factors	β (SE)	OR	CI
Individual youth factors			
Age	-.12 (.06)	.89 [*]	.8–1.0
Ethnicity (Eur. American/other)	-.50 (.15)	.61 ^{**}	.5–.8
Days away from home (1 / >2)	.32 (.16)	1.39 [*]	1.1–1.9
Dropped out of school	.78 (.18)	2.18 ^{***}	1.5–3.1
No. of living situations, past month	.02 (.04)	1.02	.9–1.1
Physical and mental health			
Sexually transmitted disease	.77 (.39)	2.15 [*]	1.0–4.6
Felt abandoned by family	.38 (.19)	1.46 [*]	1.0–2.1
Delinquent behavior			
Charged with misdemeanor	.19 (.22)	1.21	.8–1.8
On probation	.35 (.36)	1.42	.7–2.8
Charged with felony	.47 (.40)	1.61	.7–3.5
Family factors			
Lived with parent(s) before shelter admission	.09 (.21)	1.09	.7–1.6
Two-parent household	-.29 (.14)	.75 [*]	.6–.9
Physical abuse by mother	-.63 (.21)	.53 ^{**}	.3–.8
Physical abuse by father	-.30 (.20)	.74	.5–1.1
Emotional abuse by mother	.41 (.18)	1.51 [*]	1.1–2.2
Neglect by mother	-.11 (.19)	.89	.6–1.3
Model Chi-square	93.81 (df = 16), $p = .000$		

Eur. American = European American ethnicity; SE = standard error; OR = odds ratio; CI = 95% confidence interval.

^{*}
 $p < .05$ ^{**}
 $p < .01$ ^{***}
 $p < .001$.