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# A Longitudinal Study of Early Adolescent Precursors to Running Away

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**Abstract:** Although previous research has examined correlates of running away among samples of currently homeless and runaway adolescents, little is known about what factors will predict the likelihood that a housed adolescent with no prior history of running away will leave home. As such, the current study uses the National Longitudinal Survey of Youth to examine predictors of running away among a diverse sample of housed adolescents ages 12 through 13. Results indicate that socioeconomic status, being African American or Hispanic, and monitoring were significantly predictive of a decrease in the mean rate of running away in midadolescence. In contrast, being female, neighborhood victimization, personal victimization, school suspension, and delinquency all significantly increased the expected frequency of running away. Although findings provide some support for previous cross-sectional studies, they also point to the importance of young people's community environment as a risk factor for leaving home.

**Keywords:** running away, adolescents, risk factors

Although no one knows for sure how many adolescents run away each year, it is estimated that in the United States roughly 7% or 1.6 million youths aged 12 through 17 ran away from home and slept on the street during 2001 (Substance Abuse and Mental Health Services Administration [SAMHSA], 2004). Even though instances of running away are most often episodic in nature and short in duration,

running away from home is problematic as it exposes adolescents to numerous risks including an increased likelihood of sexual risk taking, delinquency, and victimization (Tyler, Hoyt, Whitbeck, & Cauce, 2001). Regardless of the frequency and duration of one's time away from home, we believe that learning more about the predictors of running away is important because the risks associated with running may have cumulative effects that hinder normative adolescent development (Hagan & McCarthy, 1997; Wheaton, 1999; Whitbeck & Hoyt, 1999). In addition, running away is also associated with long-term effects, including early onset of psychological, behavioral, or substance abuse problems in adulthood (cf. Simons & Whitbeck, 1991; Susser, Struening, & Conover, 1987).

Research on runaway youth is complicated by the mixed composition of most samples. A tradition has emerged in the literature that distinguishes between runaway and homeless youth. A runaway typically refers to someone under the age of 18 who stays away from home at least overnight without parental permission (National Network of Runaway and Youth Services, 1991, p. 3). A homeless youth is someone who is 18 years of age or younger who cannot or does not wish to return home and who has no permanent residence (Government Accounting Office [GAO], 1989). Although the literature generally considers running away as being episodic, whereas homelessness is more long term, the two groups often overlap (Greene, Ennett, & Ringwalt, 1997; Rotheram-Borus, 1991). As a result, much of the literature combines both runaways and homeless youth into a single sample. The combination of these two samples may be problematic for two reasons: Not all youth who run away become homeless and not all homeless youth have run away. Moreover, the risks and experiences of runaway and homeless youth may differ. Other shortcomings in the literature include the reliance on cross-sectional studies, which can be attributed to the difficulties associated with studying this hard-to-reach population (Wright, Allen, & Devine, 1995). Additionally, many of the studies are based on retrospective reports that are subject to recall bias (Brewin, Andrews, & Gotlib, 1993). Finally, small sample sizes, regional samples as opposed to national samples, and instances of sampling on the dependent variable limit the generalizability of the findings.

Although previous studies have identified risk factors for running away, such as troubled home environments, much of this research has been descriptive or without a theoretical framework. To more fully understand and explain the behavior of runaways, the current study draws on two key theoretical positions, the risk-amplification model (Whitbeck, Hoyt, & Yoder, 1999) and social capital theory (Hagan & McCarthy, 1997), to explore the predictive utility of variables found to

be associated with running away in previous studies. The proposed study is unique because it focuses on young adolescents who are currently housed with no prior history of running away and examines which factors predict running 2 or more years later.

## Literature Review

Previous studies of homeless and runaway adolescents have identified a number of correlates associated with running away, including family problems and poor parenting. Although little research on the relationship between running away and environmental risk factors exists, we believe these factors are potential predictors of running away from home, which is consistent with the work of Hagan and McCarthy (1997). Finally, although behavioral problems such as delinquency have been examined as outcomes of running away, theory guides our examination of the predictive utility of problem behavior on running away. We begin our review of the empirical research on these factors with a brief synopsis of the theoretical explanations of running away.

### *Theoretical Explanations*

Unlike early theories that viewed runaways as delinquent youth running *toward* something such as economic or individual freedom (see Wells & Sandhu, 1986, for a review of the historical perspectives of running away), contemporary literature reveals that it is more likely that runaway youth are running away from something, such as disruptive families and harsh environmental situations. This shift in focus is apparent in the literature emerging in the late 1970s and 1980s. Theoretical explanations, put forth by scholars such as Walker (1975), Brennan, Huizinga, and Elliot (1978), and Janus, McCormack, Burgess, and Hartman (1987), integrated psychological, environmental, and situational models to explain the complexities surrounding why youth would run away from home. For instance, Brennan et al. (1978) provide an explanation for running away that includes: (a) the psychological explanation, which blames the child, (b) the social/structural explanation, which blames the environment, and (c) the social-psychological explanation, which is the interaction of both the individual and the environment. That is, children with poor self-control may receive harsh discipline by their parent(s) which influences their decision to leave home. As such, it is not the child or the environment but rather a combination of both elements that leads the child to run away (Brennan et al., 1978, p. 42).

Although these theories of running away were posited several years ago, much of the empirical research has not incorporated them. In fact, very few theoretical perspectives in general have been utilized in the vast majority of research on homeless and runaway youth. In the current study, we draw on two contemporary theories of running way that emphasize individual and environment interaction. The first explanation is the risk-amplification model (Whitbeck et al., 1999), which is a combination of life course theory and social interaction theory. In this model, adolescents often run from dysfunctional and disorganized homes such as those that employ harsh punishment and have poor parenting (e.g., low monitoring, low warmth and support) as a means of escaping a negative environment. Street experiences amplify negative developmental effects originating in the family, and these developmental problems set the stage for later victimization and participation in high-risk behaviors. Thus, adolescents growing up in families that display aggressive and antisocial behavior may mimic this behavior in other social settings, leading to school problems, including suspension and fighting, and may learn to engage in delinquent activities through their associations with deviant youth (Dodge, 1983; Patterson, 1982). The findings utilizing this perspective have generally found support for this risk-amplification process (cf. McMorris, Tyler, Whitbeck, & Hoyt, 2002; Tyler et al., 2001; Whitbeck & Hoyt, 1999).

A second key explanation of running away is Hagan and McCarthy's (1997) social capital theory. Social capital refers to the notion that people accumulate an unequal share of resources such as skills, knowledge, and social networks over time, which increasingly determines their life chances. In disadvantaged communities and families, parents have less social capital and, as a result, have fewer resources to pass onto their children. This limited availability of social capital—a reflection of their background, including lower socioeconomic status (SES); lower levels of family control; inconsistent parenting; and their environment, including neighborhood and personal victimization—increases the likelihood that youth will leave home. More specifically, the stress and strains produced by living in disadvantaged economic conditions may result in erratic, inconsistent parenting. Furthermore, as a result of these family and environmental experiences, youth are more likely to have conflicts with teachers and are less likely to be committed to school. As a consequence of experiencing problematic parenting and conflicting interactions at school, these youth suffer from an attenuation of bonds that keep them at home and uninvolved in crime (Hagan & McCarthy, 1997). All of this in turn is likely to reduce one's future life chances of acquiring social capital (Hagan & McCarthy, 1997).

*Family problems/parenting.* The literature examining the relationship between family problems and running away is generally consistent. Comparison studies have revealed that homeless adolescents report higher rates of family conflict and lower rates of parental warmth, care, and support compared to their housed counterparts (Dadds, Braddock, Cuers, Elliott, & Kelly, 1993; Schweitzer, Hier, & Terry, 1994). Additionally, studies on homeless and runaway adolescents also reveal that low levels of warmth and support (Englander, 1984), high levels of parent-child conflict, and low parental monitoring are associated with running away (Whitbeck & Hoyt, 1999). These negative family experiences may have cumulative effects and, as a result, may be detrimental to normative adolescent development (Hagan & McCarthy, 1997; Wheaton, 1999). Moreover, these early negative family interaction patterns may transcend into other contexts, such as relations with peers, and have negative effects on future relationships (Patterson & Yoerger, 2002).

*Environmental risks.* Unlike the research on parenting and running away, the relationships between environmental risk factors and running are not clearly understood. Families are situated within social contexts where economic and social supports are differentially available (Fauth, 2004). Specifically, living in poor dangerous neighborhoods affects parenting behaviors by increasing the risk of harsh control, inconsistent discipline, and low maternal warmth (Hill & Herman-Stahl, 2002). Although research examining neighborhood effects on child and adolescent outcomes is limited, it is clear that neighborhood problems, such as crime, delinquency, and social and physical disorder, either directly or indirectly influence poor adolescent development (Sampson, Morenoff, & Gannon-Rowley, 2002).

Although physical abuse is a risk factor for running away from home for both males and females (Farber, Kinast, McCoard, & Falkner, 1984; Greenblatt & Robertson, 1993; McMorris et al., 2002), we know very little about how other forms of victimization, such as those that are strongly related to environmental factors, including criminogenic neighborhoods, may affect these young people's decision to leave home. Because Hagan and McCarthy (1997) argue that both disadvantaged families and disadvantaged communities increase the likelihood of youth running away, we examine neighborhood victimization and personal victimization as important risk factors for leaving home.

Few studies have examined the effects of deviant peers on running away. Brennan et al. (1978), however, find that peers play an important role in youths' decision to run away but that this is typically predicated on familial strain. That is, youth who are experienc-

ing family troubles will be more vulnerable to the influence of their peers. It is also likely that these delinquent peers have previously run away and may even recommend this behavior to other adolescents (Brennan et al., 1978).

*Problem behavior.* Adolescents who engage in problem behaviors are at greater risk for running away. For example, a study by SAMHSA (2004) found that the rate of alcohol use, marijuana use, and illicit drug use was higher among adolescents who had run away in the past 12 months compared to those who had not run. Doing poorly in school is a risk factor for running away (English & English, 1999; Nye, 1980). Recent research finds that many homeless and runaway youth report negative experiences with school including academic failure, school dropout, suspension, expulsion, and learning problems (Whitbeck & Hoyt, 1999). Similarly, Hagan and McCarthy (1997) find that school for many homeless youth is challenging because of their difficulties understanding school material and their conflicts with teachers, principals, and other students. They also add that these problems are typically associated with trouble at home. Youth who do not get along with parents, who are resistant to following rules, and who are unwilling to adhere to the demands placed on them by parents may be equally likely to rebel at school where similar controls exist. Adolescents with negative school experiences have higher rates of truancy and are at higher risk for dropping out, which are both correlated with leaving home (Edelbrock, 1980; Hagan & McCarthy, 1997).

Finally, although prior empirical work has examined delinquency as an outcome of running away (Whitbeck & Hoyt, 1999), theory suggests that involvement in general delinquency may occur prior to running. Behavioral problems are often initiated within the family context. Youth who have been inadequately socialized often have weakened social controls and/or a resistance to conventional norms (Brennan et al., 1978). Weakened social controls coupled with familial strain puts these youth at an increased risk for engaging in delinquent behavior and adopting antisocial attitudes. As such, delinquent youth may be running away from home to escape these familial problems or they may be running away to spend more time with their delinquent peers (Brennan et al., 1978). In sum, although it has been found that runaway youth engage in delinquent acts while on the street (Whitbeck & Hoyt, 1999), it remains unclear whether delinquency in itself is a precursor to running away from home.

*Background factors.* The literature on runaways suggests that these youth comprise a very heterogeneous group. Demographic characteristics of the runaway population indicate that the majority of ad-

olescents on the street were from broken homes (National Center for Juvenile Justice, 1999) and that poverty is a significant risk factor for running away (Hagan & McCarthy, 1997). In terms of gender, the GAO (1989) found that the majority of runaways were female. Additionally, according to the GAO (1989), the race/ethnicity distribution of runaways was estimated to be 70% European American, 17% African American, and 3% Hispanic/Other ethnic or racial group.

The purpose of the current study is to explore the predictive utility of variables found to be associated with running away in previous studies. The study is unique because it focuses on young adolescents who are currently housed with no prior history of running away and examines which factors predict running 2 or more years later. We draw specifically on the poor parenting aspects of the risk-amplification model (e.g., harsh punishment, low monitoring, and low warmth and support) and on the lack of social capital within families (e.g., single parent family, low SES) and within the community (e.g., environmental risk, personal victimization) to explain why youth run from home. Additionally, because lower social capital and/or disruptive families can lead to adolescent problem behaviors, we include measures of early alcohol use, delinquency, and school problems in our model.

## **Method**

### *Sample*

Our analyses are based on data from the National Longitudinal Survey of Youth 1997 (NLSY97). The NLSY97 is the newest assessment in the series of National Longitudinal Surveys and is representative of people living in the United States in 1997 who were born during the years 1980 through 1984 and who were 12 through 16 years of age during the initial round in 1997 (Center for Human Resource Research, 2002). Because of the aging of the NLSY79 cohort, the NLSY97 longitudinal study was initiated to explore further the behaviors of youth ages 12 through 16 years. In Round 1, parents were interviewed about their children's attitudes and behaviors and their own past experiences. Additionally, the youth were interviewed on an annual basis beginning in 1997 and completed a self-administered survey that collected sensitive information that reflected antisocial behavior, such as delinquency and substance use (Center for Human Resource Research, 2002). The sampling design of the NLSY97 features an oversampling of minority groups that allows researchers to analyze behaviors and experiences across racial/ethnic groups. Because of the complex survey design employed by the NLSY97, we used a custom

weight created by National Longitudinal Survey analysts to ensure that our sample is comparable to a national sample.

The present research is a longitudinal analysis using data collected annually beginning in 1997, when the respondents were 12 to 13 years of age. The independent variables were measured in 1997 (with the exception of delinquent behavior, which was measured in 1998), whereas the dependent variable (running away) was measured in 1999, 2000, and 2001. Sample retention rates for the NLSY97 maintained a reasonably high level from baseline to the 2001 interview period with the lowest rate observed in the 2001 wave (1999 = 91.4%; 2000 = 89.9%; 2001 = 87.7%).

### *Missing Data*

The present research began with a sample size of 1,690 youth. We retained only those cases with complete data and no history of running away during the initial wave for the analyses. We assessed potential bias due to missing cases with incomplete data by comparing the control and predictor variables of the cases with missing data in the analyses with those cases with complete data ( $n = 1,579$ ). We estimated a series of  $\chi^2$  and  $t$  tests for this purpose. Our results indicated only one significant difference; respondents who had an early age of onset of drinking alcohol ( $\chi^2_{1df} = 7.483, p < .006$ ) were more likely to be missing from the analyses, indicating that the results err on the conservative side. Overall, however, the present longitudinal analysis had only a small percentage of missing cases (6.6%;  $n = 111$ ).

### *Measures*

The dependent variable, running away, was a count measure that asked, "How many times have you run away from home [that is, left home and stayed away at least overnight without your parent's prior knowledge or permission] since the last interview?" Youth who reported never running away in the previous 12 months were coded as a 0. Running away was assessed for 3 continuous years from 1999 through 2001. The reported frequency of running away over these 3 years ranged from a low of never to a high of 25 times.

Independent variables for the present study include parenting, environmental risk, and behavioral problems. We also control for important demographic characteristics.

*Parenting.* Harsh punishment was measured using three items assessing parental disciplinary actions. Adolescents were asked what their parents would do if they broke rules regarding curfew, TV or

movie viewing, and hanging out with someone they were not supposed to. Items were coded 0 = *discussed it calmly with you*, 1 = *mild punishment* (e.g., ignored it, silent treatment, or used grounding), 2 = *moderate punishment* (e.g., made threats, yelled or screamed), 3 = *harsh punishment* (e.g., used physical punishment). A small group of adolescents reported no parental involvement in rule setting and therefore were not asked about parental responses to rule breaking. Adolescents who reported setting their own rules were conservatively grouped into the 0 category so that they would not be dropped from the analysis. Monitoring was measured using four items which focused on different strategies that mothers employed to monitor and supervise their children, such as knowing their child's friends and who their child is with at a given time. Items were measured using a Likert-type scale (0 = *knows nothing* to 4 = *knows everything*) and summed to form a scale of maternal monitoring. The composite measure for maternal monitoring ranged from 1 to 16, where 1 = *no monitoring* and 16 = *high monitoring*. Cronbach's alpha is .68. Warmth and support was measured using three items assessing the frequency of maternal supportive behaviors such as praises, help, and supports. Items were measured using a Likert-type scale (0 = *never* to 4 = *always*) and summed to form a scale of maternal warmth and support with values ranging from 1 to 11, where 1 = *low warmth* and 11 = *high warmth*. Cronbach's alpha is .68.

*Environmental risk.* Environmental risk is a composite index of items assessing adolescents' physical environmental risk in and around their homes developed by researchers at Child Trends (Center for Human Resource Research, 1999, p. 115). Respondents were asked about the availability of electricity and heat in their home, the appearance of neighborhood buildings, cleanliness of their home, safety of their neighborhood, and presence of gunshots in their neighborhood. Each item was coded 2 = *high risk*, 1 = *low risk or moderate risk*, and 0 = *no risk*. The five items were summed and weighted to create an environmental risk index; the range was 0 through 7. Higher environmental scores indicated greater risk. Neighborhood victimization measured the frequency of early exposure to severe victimization. Respondents were asked if they had ever had their house broken into or if they had ever seen someone get shot or shot at prior to turning 12 years of age. The number of victimization experiences were summed and ranged from 0 = *no exposure to victimization*, 1 = *exposure to one act of victimization*, and 2 = *exposure to two acts of victimization*. Personal victimization was a two-item indicator measuring whether the respondent had been threatened at school and whether the respondent was ever a victim of repeat bullying. Responses range from 0 = *never* to 2 = *exposure to two acts of personal victimization*. The deviant peers index was com-

prised of five items which measured the respondent's perceptions of peer involvement in delinquent activities including smoking, drinking, gangs, illegal drugs, and skipping classes. Respondents reported on their perception of the percentage of peers in their grade involved in each of the activities. Responses were coded 1 = *almost none* (less than 10%), 2 = *about 25%*, 3 = *about half*, 4 = *about 75%*, and 5 = *almost all* (over 90%). The five items were summed such that a higher score indicated a greater perception of peer involvement in deviant behaviors. The deviant peers index ranged from 5 to 25. Cronbach's alpha is .70.

*Problem behavior.* Early onset of alcohol use was a single item that asked respondents if they had ever had a drink of an alcoholic beverage excluding sips (0 = *no*; 1 = *yes*). Because respondents were 12 to 13 years of age when this question was asked and the literature generally uses 13 years of age as the cutoff delineating early onset (cf. Lo, 2000; Zhang, Wieczorek, & Welte, 1997), any reports of alcohol use were considered indicative of early onset. School suspension was a single item that measured problem behaviors at school. Respondents were asked if they had ever been suspended from school (0 = *no*, 1 = *yes*). School fight is a single item measuring violent behavior at school. Respondents were asked how often they had been in a fight at school (0 = *no fighting*, 1 = *fighting*). Delinquency was measured in 1998 using six items that examined involvement in delinquent activities (i.e., ever steal anything <\$50, ever steal anything >\$50, ever damage property on purpose, ever commit other property crimes, ever attack someone, and ever sold or helped sell drugs). Responses were coded 0 = *no* and 1 = *yes*. The items were summed such that the higher the score the greater the involvement in delinquent behaviors. Because of the rarity of reported involvement in more than three delinquent activities, we recoded the deviant behavior variable so that 0 = *no involvement*, 1 = *involvement in one delinquent activity*, 2 = *involvement in two delinquent activities*, and 3 = *involvement in three or more delinquent activities*.

Controls included gender, family structure, SES, and race/ethnicity. Gender was dummy coded as 0 = *male* and 1 = *female*. Family structure was coded 1 = *living with both mother and father* and 0 = *other living situation*. SES is a single-item measure of the ratio of household income to the poverty level developed by researchers at the Center for Human Resource Research (2002, p. 202). To create greater anonymity, the NLSY researchers truncated the responses: 0 = in poverty, 1 = 1% to 10% above the poverty level, 2 = 11% to 20% above the poverty level, ..., 9 = 81% above the poverty level. Previous research has typically been unable to examine predictors of running away within different racial/ethnic groups because of limitations on sample size. In the present sample, non-Hispanic White respondents comprise 58% of the sample, African Americans comprise 22%, and Hispanics comprise 20%.

*Analytic Strategy*

Because our dependent variable is a count of the number of times adolescents report running away, we employ a negative binomial regression model. The analysis of rare events such as running away typically produces a strongly skewed distribution with a large number of zeros. The problems associated with applying traditional ordinal least squares (OLS) regression models for distributions such as these are well documented and state that they produce estimates that are inefficient, inconsistent, and biased (Long, 1997; Osgood, 2000). Therefore, we use a negative binomial regression model, which is based on a Poisson distribution that employs a log transformation, to solve the problems resulting from this asymmetric distribution. Poisson models have a number of assumptions, including an equidispersed distribution where the mean equals the variance, a homogeneity in the sample where each case has an equal probability of experiencing the event, and an assumption that each event, in this case running away, occurs independently. In practice, the assumptions of the Poisson model are often violated. For instance, we know from past research that running away is a cumulative event; once an individual runs away they have a greater likelihood of running again in the future (Tyler & Whitbeck, 2004). Because running away is a cumulative event, applying the Poisson model would violate the independence assumption. Negative binomial regression models are an extension of the Poisson model that adds an additional variance parameter to the model to correct for these violations (see Long, 1997, for more information).

Unlike OLS models, count models such as the negative binomial model do not have a standard measure of fit (Long, 1997). Traditionally, likelihood ratio measures were utilized as indicators of goodness of fit. More recently, however, information based measures such as the Bayesian information criterion (BIC) are gaining in popularity. Because there is no consensus regarding the appropriate measure of fit, we report both the Wald and BIC statistics. Both measures report increasing model fit for each successive model.

**Results***Characteristics of the Sample*

In each wave, approximately 6% of the respondents reported running away in the previous 12 months. Although it is difficult at best to estimate the true percentage of runaways in the population, the 6% in

the current study is consistent with the prevalence rates for 14- to 15-year-olds (6%) and slightly lower than the 10% of 16- to 17-year-olds reported by SAMHSA (2004). In general, most of the youth report running only once in the prior 12 months for each wave analyzed here; however, nearly one-third of the runaways report running multiple times. Specifically, of the runaways in our sample, 28%, 40%, and 32% ran away more than once in the 1999, 2000, and 2001 waves, respectively.

Our predictors of running away are measured in early adolescence when the youth were 12–13 years of age. The sample is evenly split between males and females (49% female). Just over half of the respondents (58%) reported that they lived with both parents. Nearly one-quarter of the respondents (23%) are classified as being in poverty in 1996, with another 21% of the respondents classified as being 1% to 10% above the poverty level in 1996 ( $\bar{X} = 2.23$ ). Moreover, runaways are proportionately distributed within each racial/ethnic group: 12.5% were non-Hispanic White, 12.8% were African American, and 9.1% were Hispanic.

In terms of parenting, most youth report positive family experiences. Overall, there are high rates of monitoring, and warmth and support with means of 10.86 and 9.22, respectively. Most youth reported experiences with mild disciplinary strategies such as grounding; however, a notable portion of youth reported negative family experiences as well. Nearly 11% of the youth indicated experiencing moderately harsh punishment such as parental threats, and 3% reported experiencing harsh physical punishment (see Table 1).

In addition, there is considerable variation in environmental risk in the sample. The environmental risk index, which assessed physical risk such as dirty living situations, lack of household electricity, and safety, had a mean of 1.24, indicating that most youth did not live in these conditions. However, many youth reported experiencing episodes of victimization. Nearly 25% of the respondents reported having their house broken into and/or seeing someone get shot before the age of 12. Additionally, more than 40% reported being the victim of repeat bullying and/or being threatened at school. The mean for deviant peers was 8.02, indicating low levels of perceptions of peer involvement in delinquent behavior.

Finally, in terms of problem behavior, nearly one-quarter of the respondents (23%) reported ever having a drink of an alcoholic beverage. Many reported problems at school, as 19% had been suspended at some time and 20% reported ever being in a fight at school. Thirty percent of the sample self-reported involvement in one or more delinquent acts. These rates of problem behavior are noteworthy as these were self-report indicators assessed when the youth were 12 to 13 years of age.

**Table 1.** Descriptive Statistics of All Study Variables ( $N = 1,579$ )

	$\bar{X}$	SD
Female	.49	.50
Family structure	.58	.49
Socioeconomic status	2.23	2.10
African American	.22	.42
Hispanic	.20	.40
Harsh punishment	.85	.74
Monitoring	10.86	3.04
Warmth & support	9.22	1.80
Environmental risk	1.24	1.35
Neighborhood victimization	.23	.47
Personal victimization	.42	.65
Deviant peers	8.02	3.53
Early alcohol onset	.23	.42
Suspension	.19	.39
School fight	.20	.40
Delinquency	.50	.87
Runaway '99 through '01	.32	1.58

### *Multivariate Analysis*

The multivariate analysis is presented in Table 2. Although some of the variables in the analysis measure similar constructs, we do not have a problem with multicollinearity—the variance inflation factor values were all considerably below 2 (Fox, 1991). Because we wanted to see the individual effect of each group of variables, such as parenting on running away, the variables were entered sequentially in four separate blocks based on their temporal order of influence (i.e., adolescents are exposed to the influence of their parents prior to external influences such as the school and their peers). Exponentiation of the coefficient tells us the influence of the predictor on the expected mean count of running away.

In Model 1, SES was predictive of running away. Higher SES was associated with a decreased likelihood of running; each one unit increase in SES decreased the expected mean count of running away by 21%, holding all other variables constant ( $B = -.24$ ;  $\text{Exp}(B) = .79$ ). Parenting measures were included in Model 2. Only monitoring was significantly predictive of running away. A one unit increase in monitoring decreased the expected mean count of running by 13% ( $B = -.14$ ;  $\text{Exp}(B) = .87$ ). SES remained a significant predictor of running. Additionally, being African American or Hispanic decreased the expected

**Table 2.** Negative Binomial Regression Models for Predictors of Running Away ( $N = 1,579$ )

	Model 1		Model 2		Model 3		Model 4					
	Coeff.	(SE)	Exp(B)	Coef.	(SE)	Exp(B)	Coef.	(SE)				
Controls												
Female	.24	.26	1.27	.40	.23	1.49	.52*	.23	1.68	.81**	.25	2.25
Family structure	-.24	.29	.79	-.16	.25	.85	-.18	.25	.84	-.15	.26	.86
Socioeconomic status	-.24**	.07	.79	-.22**	.08	.80	-.12	.07	.89	-.15*	.07	.86
African American	-.55	.28	.58	-.66*	.29	.52	-.73**	.27	.48	-.88**	.28	.42
Hispanic	-.66	.35	.52	-.67*	.34	.51	-.59	.33	.55	-.64*	.31	.53
Parenting												
Harsh punishment				.01	.18	1.01	-.10	.18	.91	-.27	.19	.76
Monitoring				-.14**	.04	.87	-.13**	.04	.88	-.10**	.04	.91
Warmth & support				-.06	.07	.94	-.05	.06	.95	-.10	.06	.91
Environmental risk												
Environmental risk				.09	.11	1.09				-.01	.09	.99
Neighborhood victimization				.56*	.22	1.75	.49*	.22	1.63	.49*	.22	1.63
Personal victimization				.42**	.15	1.52	.31*	.15	1.36	.31*	.15	1.36
Deviant peers				.06	.04	1.06				.01	.03	1.01
Problem behavior												
Early alcohol onset												
School suspension										.23	.26	1.26
School fight										.99**	.31	2.69
Delinquency										.05	.29	1.05
Wald ( <i>df</i> )			15.98** (5)			38.21** (8)			69.23** (12)			115.58** (16)
BIC			-2.023 <sup>e+8</sup>			-1.997 <sup>e+8</sup>			-1.949 <sup>e+8</sup>			-1.894 <sup>e+8</sup>

BIC = Bayesian information criterion. Whites are the omitted category.

\*  $p \leq .05$ , \*\*  $p \leq .01$ .

frequency of running compared to non-Hispanic White youth ( $B = -.66$ ;  $\text{Exp}(B) = .52$  and  $B = -.67$ ;  $\text{Exp}(B) = .51$ , respectively).

We then assessed the impact of environmental risk on running away in Model 3. Both victimization indices were predictive of an increased expectancy of running away. Each one unit increase in neighborhood victimization increased the expected mean frequency of running away by 75% ( $B = .56$ ;  $\text{Exp}(B) = 1.75$ ). Similarly, each one unit increase in personal victimization increased the expected mean frequency of running away by 52% ( $B = .42$ ;  $\text{Exp}(B) = 1.52$ ). In the final model we add problem behaviors to the equation. Youth who reported being suspended from school had an expected mean count of running that was nearly 3 times higher ( $B = .99$ ;  $\text{Exp}(B) = 2.69$ ) than youth with no suspension history. Additionally, each one unit increase in delinquency increased the expected mean count of running away by 77% ( $B = .58$ ;  $\text{Exp}(B) = 1.77$ ). In the final model, SES, being African American or Hispanic, and monitoring were significantly predictive of a decrease in the mean rate of running away in midadolescence, whereas being female, neighborhood victimization, personal victimization, school suspension, and delinquency all significantly increased the expected frequency of running away.

A sensitivity analysis was conducted to determine if youth who ran away were significantly more likely to be missing in any of the waves where we measured runaway behavior. A dichotomous variable was created where individuals with missing data in years 1999, 2000, and 2001 were coded 1 and those with complete data in these respective waves were coded 0. Inclusion of this variable did not alter the substantive results reported here. Additionally, this variable was not significantly related to running away (results not shown).

## Discussion

Numerous adolescents run away from home every year in the United States and this negative behavior can have detrimental effects on normative adolescent development as well as possible long-term consequences. The goal of the present study was to use longitudinal data to assess the predictive nature of factors measured in early adolescence, such as parenting, environmental risk, and behavioral problems, on running away in midadolescence. Previous studies on runaways have used street samples of youth to assess reasons for running away. The current study is unique because it focuses on young adolescents who are currently housed with no prior history of running away and examines which factors predict running 2 or more years later.

Our results indicate that SES, being African American or Hispanic, and monitoring were significantly predictive of a decrease in the mean rate of running away in midadolescence. Being female, neighborhood victimization, personal victimization, school suspension, and delinquency all significantly increased the expected frequency of running away when controlling for other influences. In terms of our background variables, one consistent finding, regardless of race/ethnicity, is that females are more likely to run away from home compared to their male counterparts. Although we are limited in our ability to measure experiences with abuse and neglect, one possible explanation for this gender difference is that because females experience higher rates of sexual abuse, they may be more likely to run away to avoid future harm (GAO, 1989; Tyler et al., 2001). Additionally, we find that African American and Hispanic adolescents are less likely to run away compared to White adolescents. Much of the prior research on running away has been unable to examine race/ethnic differences; therefore, we cannot attest to whether this is a consistent finding. Because minority youth are more likely to live in disadvantaged contexts compared to White youth, this finding is surprising. We give greater attention to this anomaly below. Finally, consistent with previous literature, adolescents from lower socioeconomic backgrounds are more likely to run away.

Our findings regarding the influence of parenting on running away is in accordance with the previous literature, as higher maternal monitoring served as a buffer, reducing the odds of adolescents running away from home. Parents who know who their children's friends are and who their children are with at a given time may have better and more frequent communication with their children. This finding is consistent with the risk-amplification model which holds that adolescents from disorganized homes, including those with poor parenting, are more likely to run away as a means of escaping their negative environment (Whitbeck et al., 1999). Although some studies have found that harsh discipline and low warmth and support are risk factors for leaving home, these variables did not reach significance in our models. It is possible that harsh parenting did not reach significance because it is not a measure of what parents' have done but, rather, what respondents' think their parents might do.

The findings for the environmental risk variables reveal that neighborhood victimization and personal victimization are important risk factors for running away from home. Though past research has identified victimization in the form of physical abuse as a key risk factor for leaving home (Farber et al., 1984; Greenblatt & Robertson, 1993;

McMorris et al., 2002), very little research has focused on how other forms of victimization, such as environmental factors and criminogenic neighborhoods, may influence running away. Our measures of neighborhood and personal victimization tap into this relationship by asking respondents to report on early exposure to gun shots, bullying, and residential break-ins. Similar to other measures of victimization, we find that higher levels of neighborhood and personal victimization are predictive of a greater frequency of running. Readers should interpret these findings cautiously, as our victimization measure may be tapping a construct of disadvantaged neighborhoods. Our findings on victimization, however, are consistent with Hagan and McCarthy's (1997) social capital theory; youth from disadvantaged communities are at greater risk for having limited social capital, which increases the likelihood that youth will leave home.

Consistent with a risk-amplification model and social capital theory, adolescents who have negative experiences at school, such as school suspension, are more likely to run away from home. It is possible that school experiences are precipitated by or related to problems at home (Hagan & McCarthy, 1997), as adolescents who are unable to communicate with parents about such troubles may be at greater risk for running away. Moreover, this finding has potential long-term consequences for these adolescents. That is, running from home disrupts the educational progress of adolescents and thus increases their risk of falling behind and not returning to school, which further reduces their future life chances (Hagan & McCarthy, 1997).

Finally, delinquency predicted one's frequency of running away. Consistent with both the Hagan and McCarthy (1997) and Whitbeck et al. (1999) interpretation, it is possible that given their disadvantaged families and communities, many adolescents experience lower levels of family control and ineffective parenting, which leads to a weakening of social controls and, in turn, results in youth's participation in deviant behavior. Additionally, living in disadvantaged communities may afford youth more opportunities to engage in deviant behavior. In sum, youth engaging in delinquent behavior may be more apt to run away from home to escape family or community problems.

In general, our findings are somewhat consistent with some aspects of both the risk-amplification model and with social capital theory. First, we find support for the poor parenting aspects of the risk-amplification model (e.g., low monitoring). Adolescents who experience poor parenting are at greater risk for running away from home. Second, our findings support aspects of the social capital theory. Measures of social capital within the family (e.g., lower SES) and within the community (e.g., experiencing more neighborhood victimization

and personal victimization) significantly predicts the likelihood that youth will leave home. Finally, having fewer resources (or limited capital) and growing up in a disruptive family can lead to problem behaviors including delinquency and school suspension, which are subsequently linked to running away.

Although we find that in general youth from adverse backgrounds are more likely to leave home, our results indicate that these explanations may not be equally applicable to minority youth. That is, although African American and Hispanic youth were more likely to come from adverse backgrounds characterized by lower SES and greater environmental risk compared to White youth (results not presented here), they were less likely to run away. Because the literature on adolescent runaways is limited in its attention to racial/ethnic differences in running away, we can only speculate as to possibilities for this anomaly. First, despite their adverse environments, there may be cultural factors that protect African American and Hispanic adolescents from running away that we are unable to measure. Second, it is possible that some neighborhoods may have strong community networks that serve as a protective factor for these youth. On the other hand, some minority youth may be less likely to run because they lack other viable options; the disadvantaged community in which they live might be so deleterious that living in poor family and household environments might be the lesser of two evils. Lastly, because minority youth are more likely to face complex sets of barriers to receiving services and overall receive fewer services compared to Whites (Schepers, van Dongen, Dekker, Geertzen, & Dekker, 2006), they may view the resources available to them as limited and may be less likely to run from home. Regardless, this is an interesting finding that should be explored in further research to learn more about additional risk and/or protective factors that may be unique to certain groups.

Some limitations should be noted with this study. As with any secondary longitudinal data set, the advantages gained by the large sample size and the rich data are matched by the loss of important research specific questions. The NLSY97 is no exception. This data set did not include any indicators of sexual abuse, which is an important correlate of running away in cross-sectional studies of homeless youth. Second, the harsh parenting and deviant peers measures captured what respondents' thought their parent or friends might do rather than the actual behavior itself, which may have accounted for their non-significance in the model. Third, the data limited our ability to measure the duration of time adolescents spent away from home. Fourth, the theories do not take into account possible differences across race. The findings from the present study regarding race differences suggest that this is an important area for future theory and research. Fi-

nally, because the NLSY is a sample of housed adolescents, it is possible that it may exclude some of the most vulnerable youth, including those who had run away at baseline. However, we do capture 12- to 13-year-old adolescents who ran away at ages 15 through 17, which is an age when many youth run. Additionally, because running away is episodic in nature and we measure running at three waves, it is likely that we capture most youth at one point or another. Furthermore, our control for attrition bias was not significant, indicating that runaways were not more likely to be missing from the sample. As such, although it is possible we are missing some of the most vulnerable youth, we do retain a significant portion of the adolescents.

Notwithstanding these concerns, our data also has several strengths, which allowed us to address many of the shortcomings in the current literature. We were able to use a prospective, longitudinal data set of nearly 1,600 young adolescents ages 12 through 13 in the general population, which allowed us to examine antecedents of running. In addition to including measures of parenting, which are typically related to youth running away from home among cross-sectional studies, we also included indicators of behavioral problems as predictors of running away, rather than outcomes, and included measures of environmental risk, which have typically not been examined as precursors of running away. We also had significant numbers of minority youth, which allowed us to examine African Americans and Hispanics rather than grouping them together in a manner similar to many other studies on runaway youth. Finally, we employ two theoretical explanations that take into account family and/or environmental factors that explain why youth run away from home.

Our findings shed important light on precursors to running away among young adolescents in the general population. This information is important because it may allow practitioners and other professionals to target high risk groups and to intervene before adolescents initially run from home. Additionally, identifying problems associated with running away, including family, environment, school, and/or peers, is important because problems left unchecked may result in repeated running, which may increase the likelihood of spending time on the street and consequently increase the risk for substance misuse, victimization, delinquency, and high-risk sexual behaviors (McMorris et al., 2002; Tyler, Hoyt, & Whitbeck, 2000; Tyler & Johnson, 2004). Moreover, identifying precursors is important, as childhood difficulties with school and families as well as running from home are all associated with later adult difficulties including low earning potential and homelessness (Burt, Aron, Lee, & Valente, 2001).

Although the theories used in the literature to explain why youth run from home use different terminology, most of them are rooted

in the family environment which, in some form, is often a precursor to why adolescents run away. What many of these theories are lacking, with the notable exception of Hagan and McCarthy's (1997) social capital theory, is an account of contextual factors, which often influence parenting, which in turn affects adolescents' decision to leave home. Families are embedded in a social context, and living in impoverished settings or criminogenic environments affects parental behavior (Hill & Herman-Stahl, 2002). Not only does the environment affect parenting, but the environment also has a more direct effect on adolescents through forms of victimization, which also affects their decision to run away from home. Therefore, it is important that theories pay more attention to these structural factors. Future research should increase its consideration of factors occurring during early adolescence, as this may be an opportune time to intervene and protect these youth from the detrimental effects of running away.

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