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Protective Factors Associated with Fewer Multiple Problem Behaviors Among Homeless/Runaway Youth

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Abstract

Although homeless youth exhibit numerous problem behaviors, protective factors that can be targeted and modified by prevention programs to decrease the likelihood of involvement in risky behaviors are less apparent. The current study tested a model of protective factors for multiple problem behavior in a sample of 474 homeless youth (42% girls; 83% minority) ages 12 to 24 years. Higher levels of problem solving and planning skills were strongly related to lower levels of multiple problem behaviors in homeless youth, suggesting both the positive impact of preexisting personal assets of these youth and important programmatic targets for further building their resilience and decreasing problem behaviors. Indirect relationships between the background factors of self-esteem and social support and multiple problem behaviors were significantly mediated through protective skills. The model suggests that helping youth enhance their skills in goal setting, decision making, and self-reliant coping could lessen a variety of problem behaviors commonly found among homeless youth.

In the United States, an estimated 6 to 8% of youth are reported to have run away from home in the last year (Sanchez, Waller, & Greene, 2006), resulting in approximately 1.7 million homeless youth per year (Hammer, Finkelhor, & Sedlak, 2002). Homeless youth are at high risk for involvement in a range of problem behaviors, including high rates of substance use (Baer, Ginzler, & Peterson, 2003; Bousman et al., 2005; Clatts, Goldsamt, & Gwadz, 2005; Thompson, 2005; Van Leeuwen et al., 2004), sexual risk behaviors (Clatts et al., 2005; Greene, Ennett, & Ringwalt, 1999; Halcón & Lifson, 2004; Haley, Roy, Leclerc, Boudreau, & Boivin, 2004; Solorio, Milburn, Rotheram-Borus, Higgins, & Gelberg, 2006; Tyler, Whitbeck, Chen, & Johnson, 2007; Tyler, Whitbeck, Hoyt, & Cauce, 2004; Weber, Boivin, Blais, Haley, & Roy, 2002), and conduct problems and delinquent behavior (Chen, Thrane, Whitbeck, Johnson, & Hoyt, 2007).

Homeless youth engage in multiple risk behaviors, and findings indicate that for this population involvement in one risk behavior is strongly related to involvement in other risk behaviors (Bailey, Camlin, & Ennett, 1998; Kipke, O'Connor, Palmer, & MacKenzie, 1995). Consistently strong bivariate relationships between reports of substance use, sexual behavior, and delinquency have been found in a range of adolescent samples leading to the hypothesis that a common factor may underlie these relationships (Donovan & Jessor, 1985; Willoughby, Chalmers, & Busseri, 2004; Zhang, Welte, & Wieczorek, 2002). Willoughby et al. (2004) found in their examination of 10 adolescent risk behaviors that substance use, sexual activity, and delinquency formed a single latent problem syndrome. Given substance use, sexual risk behaviors, and delinquency are frequently reported among homeless youth, the current study examined potential protective factors for the multiple problem behaviors of sexual risk, substance use, and delinquency in this population. If malleable protective factors can be identified, they could be important intervention targets that may be modified by prevention programs to decrease the likelihood of involvement in risky behaviors.

Establishing a single multiple problem behavior construct provides the opportunity to examine common protective factors for multiple risks. However, research identifying predictors of multiple problem behaviors has focused on identifying risk factors, such as poor impulse control, sensation seeking, negative affect, avoidant coping, poor parental monitoring, and involvement with deviant peers (Cooper, Wood, Orcutt, & Albino, 2003; VanZile-Tamsen, Testa, Harlow, & Livingston, 2006). Little attention has been given to whether there may be common factors that protect adolescents, particularly homeless youth, against involvement in multiple risk behaviors or that buffer to reduce negative outcomes. Thus, the present study examined the mediating impact of protective factors on the multiple problem behaviors of substance use, sexual risk behavior, and delinquency.

Determining protective factors for youth living in the context of concentrated, urban poverty has proven challenging (Cauce, Stewart, Rodriguez, Cochran, & Ginzler, 2003). One particular difficulty in ascertaining protective factors for risk behavior among homeless youth is that the factors often identified as protective for youth generally, such as involvement in school, community, or healthy family relationships (e.g., Donovan & Jessor, 1985), represent resources that are largely unavailable to many youth once they are living on the streets. Homeless youth are often estranged from family after experiencing dysfunction or abuse and attend school intermittently, compromising their ability to forge relationships with pro-social peers and adults (McMorris, Tyler, Whitbeck, & Hoyt, 2002; Tyler, Whitbeck, Hoyt, & Yoder, 2000). Therefore, other factors that may mitigate the risk behaviors often reported by homeless youth must be considered.

Cognitive behavioral theories are one of the most commonly employed frameworks in the health research and intervention fields. This theory is the basis for many behavioral interventions and has guided programs that aim to change the trajectory of risk in this population. The theory suggests targeting knowledge, attitudes, goal planning and setting, and behavior to build planning and problem-solving skills that address barriers for behavioral changes (Haignere et al., 2000; Hyun, Chung, & Lee, 2005; Rew, Fouladi, Land, & Wong, 2007; Rotheram-Borus, Koopman, & Haignere, 1991; Rotheram-Borus et al., 2003; Slesnick & Kang, 2008). These skills support an overall self-reliant coping style

allowing a youth to maintain positive cognitions or attitudes and directly address rather than avoid or escape problems. These skills may be protective for multiple problem behaviors by leading youth to make healthy choices when faced with challenging situations specific to sex, substance use, or delinquent behavior. Training in problem solving and goal setting or planning skills has been a central feature in many youth interventions for prevention of sex risk behavior (Givaudan, Leenen, Van de Vijver, Poortinga, & Pick, 2008; Herbst et al., 2007; Lederman & Mian, 2003; Pedlow & Carey, 2004; Rotheram-Borus et al., 2003), substance abuse (Epstein, Griffin, & Botvin, 2002; Hansen, 1992; Sun, Skara, Sun, Dent, & Sussman, 2006; Tebes et al., 2007), and delinquent behavior or conduct problems (Mager, Milich, Harris, & Howard, 2005; Martsch, 2005; Rohde, Jorgensen, Seeley, & Mace, 2004). Despite the centrality of problem solving and goal setting for a range of youth risk behaviors, there is fairly limited research examining the association between these factors and adolescent risk behavior. Nonetheless, higher levels of decision-making skills and goal-setting behavior have been found to predict lower levels of adolescent and young adult sex risk behavior (Langer & Tubman, 1997; Moore & Davidson, 2006; Tevendale, Lightfoot, & Slocum, 2009). Similarly, research with adolescent samples has found an association between lower levels of substance use and both stronger decision-making skills and problem-solving skills (Epstein, Zhou, Bang, & Botvin, 2007; Kuperminc & Allen, 2001). Lower levels of delinquent behavior also have been linked to better decision-making skills (Haines, 2007; Hasking, 2007).

Cognitive behavioral theories have expanded to recognize the impact of personal assets and social influences in explaining how people acquire and maintain behavioral patterns and for intervening on problem behaviors (Bandura, 1997). A youth's personal assets can have an impact on a youth's problem-solving skills, goal-setting skills, and coping style. Global self-esteem (self-worth) and social support have been considered as possible protective factors for a range of adolescent problem behaviors. Research findings, however, have not been entirely consistent as to whether these factors directly reduce risk behavior (Baumeister, Campbell, Krueger, & Vohs, 2003; DuBois & Tevendale, 1999). Alternatively, self-esteem and social support have been conceptualized as resources that increase the likelihood of utilizing healthy coping processes (Taylor & Stanton, 2007). Thus, self-esteem and social support are assets that youth possess that may influence the acquisition of protective health skills and processes. In other words, these can be conceptualized as background factors that positively influence the development and utilization of problem solving and goal setting, which in turn may reduce risk for involvement in problem behavior. As such, we examined the relation of self-esteem and social support to the identified protective skills.

In the current study, we examined a model of protective factors for multiple problem behavior in a sample of homeless youth. The first step of the study was to determine if a common factor could adequately account for the covariance in measures of drug use, sexual behavior, and delinquency history. The second step was to examine whether a hypothesized second-order problem-solving and planning skills factor was negatively related to involvement in multiple problem behavior. The final step of the study was to consider whether the relationship between self-esteem and multiple problem behavior, and social

support and multiple problem behavior, was fully mediated by problem solving and planning skills.

METHODS

Participants

Participants were recruited from nine agencies that serve runaway and homeless youth in Los Angeles County, California. Agencies included drop-in centers (i.e., agencies where youth living on the street could receive a meal and other services) and shelters (i.e., youth could be housed for a night). To be eligible to participate in the research, youth needed to be receiving services at a participating agency and speak English. The youth were recruited over a $1\frac{1}{2}$ -year period (2004–2005).

Youth ranged in age from 12 to 24 years with a mean age of 19.4 years ($SD = 2.6$). Thirty-five percent of the sample were 12 to 18 years of age ($n = 170$) and 65% were older than 18 ($n = 304$). Most youth were boys (58%). Ethnic composition of the sample included 17% White, 32.5% African American, 21.5% Hispanic/Latino, 1.5% Native American, 2% Asian, and about 25% mixed or other.

Procedures

All procedures were approved by the Institutional Review Board of the University of California, Los Angeles. Youth were recruited by interviewers who approached participants directly at each agency. Interested youth completed an informed consent process. Consent procedures required participants to correctly answer three open-ended questions demonstrating understanding of the study. For participants younger than 18 years old, a waiver of parental consent was granted by the university's Institutional Review Board given the study involved minimal risk and youth living apart from their parents. Of those youth approached, 93% agreed to participate and completed an interview ($n = 474$). The 7% of youth who declined participation expressed a lack of interest. No youth were excluded because they spoke Spanish. Interviews were conducted face-to-face using an audio computer-assisted self-interviewing (A-CASI) system. Each interview lasted approximately $1\frac{1}{2}$ hr, and participants received \$20 remuneration.

Measures

Background Factors

Demographic variables: Demographic variables collected for analyses included age, gender, and ethnicity. Ethnic group membership was initially included in the model but was not significantly associated with any of the substantive variables and thus was deleted. A self-report of the number of times the youth indicated being homeless at any time in their life for any duration was also included. Because of the wide range of responses to this question ($M = 8.2$, $SD = 27.5$), the item was log-transformed in the analysis due to its skewness and kurtosis.

Self-esteem: The self-esteem latent variable consisted of five items from the Global Self-Worth subscale of the Self-Perception Profile for Adolescents (Harter, 1988). Participants

were first presented with two statements and asked which described them (i.e., “Some people are often disappointed with themselves” was contrasted with “Other people are pretty pleased with themselves”). Participants then were asked if the statement was “really true” or “sort of true” for them. A single score ranging from 1 to 4 was given for each item based on responses to both parts of the question (e.g., a score of 4 was associated with a response of “Some people are often disappointed with themselves,” followed by an indication that the participant feels this statement is “really true for them”). Higher scores indicate greater self-esteem. Internal validity of the scale has ranged from 0.62 to 0.84 in prior studies (Eapen, Naqvi, & Al-Dhaheri, 2000; Harter, 1985; Hess & Petersen, 1996).

Social support: Participants completed the Adolescent Perceived Microsystem Scale (Seidman et al., 1995), which assesses perceived social support in the family, peer, and school microsystems. The adolescents reported the support (0 = no, 1 = yes) and the degree of helpfulness (1 = not at all; 2 = somewhat; 3 = a great deal) of various sources (e.g., parents or guardians, close friends, siblings) in three areas: personal problems, money, and having fun. The means for support in these three areas were used as indicators of the latent construct of social support. This scale has show strong internal consistency among low-income adolescents, with alpha coefficient ranging from .74 to .81 (Seidman et al., 1995).

Intermediate Protective Skills

Goal setting: The goal-setting latent variable was represented by six items from the Goal Setting Skills Scale (Hansen, 1992; Hansen & McNeal, 2001). The items assessing (a) how often they work on goals that they have set for themselves, (b) whether they think about what they would like to be when they are older, and (c) whether they think about what they need to do to achieve a set goal were rated on a 4 point scale, ranging 1 (*never*), 2 (*sometimes, but not often*), 3 (*often*), and 4 (*all the time*). The items assessing (d) whether they give up until they achieve a goal they have set and (e) whether they always give it their best when doing something were rated on a 4-point Likert-type scale, ranging 1 (*strongly agree*), 2 (*agree*), 3 (*disagree*), and 4 (*strongly disagree*). The item assessing (f) how often they set goals to achieve was rated on a 4 point scale ranging 1 (*I usually don't set goals*), 2 (*I sometimes set goals*), 3 (*I usually set goals*), and 4 (*I always set goals*). Although responses were based on two types of categories (frequency and level of agreement), an exploratory factor analysis indicated that there was only one large eigenvalue among the six items and that coefficient alpha for the six items was .82. These findings increased confidence that there was one common factor among the six items.

Decision making: The decision-making items were from the Decision Making Skills Scale (Hansen, 1992; Hansen & McNeal, 2001) and assessed on a 4-point scale ranging 1 (*never*), 2 (*sometimes, but not often*), 3 (*often*), and 4 (*all the time*). The four items assessed (a) how often they stop to think about options before making a decision, (b) how often they stop to think about how their decisions may affect others' feelings, (c) how often they stop to think about all of the things that may happen as a result of their decisions, and (d) whether they believe they make good decisions. These four items were used to indicate the latent construct of decision making. Coefficient alpha for the four items was .70, and there was only one large eigenvalue among the four items.

Self-reliant coping: All of the self-reliant coping skill items were assessed by the Relevant subscale of the Adolescent Coping Orientation for Problem Experiences (Patterson & McCubbin, 1987). Items were evaluated on a 5-point scale ranging 1 (*never*), 2 (*hardly ever*), 3 (*sometimes*), 4 (*often*), and 5 (*most of the time*). The six items assessed how often they (a) try to think of good things in life, (b) organize their lives and what they have to do, (c) try to figure out how to deal with their problems of tension on their own, (d) get a job or work harder at one, (e) try to see the good things in a difficult situation, and (f) try to make their own decisions when faced with difficulties or feel tense. These six items were used to indicate the latent construct of self-reliant coping. Coefficient alpha among the six items was .70; there was only one eigenvalue greater than 1 among the items.

Multiple Problem Behavior Outcomes

History of drug problems: The latent construct for a youth's history of drug problems was indicated by eight items. To keep the number of indicators down to a reasonable number, the eight items were combined at random to form four indicators. These items included a history of problems with alcohol, marijuana, nonprescribed drugs such as sedatives, tranquilizers, antidepressants, pain killers or opiates, hallucinogenic drugs, designer or club drugs, stimulants or uppers, cocaine or crack, and heroin. Responses ranged from 1 (*never*) to 5 (*very often*). Means of each pair of responses were used. Parceling is common in structural equation modeling (Little, Cunningham, Shahar, & Widaman, 2002). Coefficient alpha was high among the eight items (.77), which increased our confidence in combining them into four parcels (Yuan, Bentler, & Kano, 1997). Coefficient alpha was .78 among the four two-item parcels.

Delinquent behavior: The latent construct for delinquent behavior reflected various deviant behaviors over the past 12 months. Nine delinquent behaviors including using a weapon, face-to-face robbery, stealing when someone was not looking (e.g., shoplifting), breaking into a house, property destruction, physical cruelty, starting a physical fight, bullying or threatening others, and setting a fire on purpose were combined randomly to create three parcels. Behaviors were assessed by no/yes responses (0, 1). Coefficient alpha was high among the items (.80 before and after parceling).

Risky sexual behavior: The risky sexual behavior latent construct was assessed for up to five different partners and was indicated by three items: (a) the number of unprotected sex acts in the previous 3 months, (b) the amount of anal sex in the previous 3 months, and (c) how often they had traded sex for money or drugs with various sex partners. Due to skewness and kurtosis, the square roots of Items 1 and 2 were used in the analyses. Coefficient alpha among the three items was .74.

Data Analyses

The analytic method chosen for this study is structural equation modeling using latent variables (Bentler, 2006). Latent variables are error-free constructs that comprise the shared variance among a number of indicator variables; they represent a higher order of construct abstraction. Latent variable models provide estimates of relations among a number of constructs. They also account for random measurement error among the measured variables.

Before proceeding with any analyses, the assumptions of univariate and multivariate normality, linearity, multicollinearity and singularity, outliers among cases, and sample size were assessed. The assumptions of multivariate normality and linearity were evaluated with EQS and SPSS. The data met these factor analysis assumptions with the exception of multivariate normality (Mardia's standardized kurtosis coefficient = 49.88; Bentler & Dudgeon, 1996). Because the assumption of multivariate normality was not met, robust statistics for the fit indices were used (Bentler, 2006). There were no missing data.

The latent variable analyses were performed using the EQS structural equations modeling program (Bentler, 2006). These analyses compare a proposed hypothetical model with a set of actual data. The closeness of the hypothetical model to the empirical data is evaluated statistically through goodness-of-fit indexes and the root mean square error of approximation (RMSEA). We used the Satorra-Bentler robust fit statistics (the Satorra-Bentler chi-square [S-B (χ^2)] and the Robust Comparative Fit Index (RCFI) because the data showed multivariate kurtosis as previously reported. The RCFI ranges between 0 and 1 and compares the improvement of fit of a hypothesized model to a model of complete independence among the measured variables while adjusting for sample size. Values approaching .95 are desirable for the RCFI (Hu & Bentler, 1999). We also report the RMSEA for the models (Browne & Cudeck, 1993). The RMSEA indicates lack of fit per degrees of freedom, controlling for sample size, and values less than .06 indicate a close-fitting model.

Confirmatory factor analysis: After preliminary exploratory analyses examining the scales used in this study, an initial confirmatory factor analysis was performed with each hypothesized latent construct predicting its proposed manifest indicators. All latent constructs and demographic variables were correlated. This analysis assessed the adequacy of the proposed factor structure (measurement model) and the relationships among the latent and manifest variables. The need to perform some minor model modification because of possible associations among some of the similar measured variables was anticipated. Therefore, reasonable correlated error residuals were added based on suggestions from the Lagrange-Multiplier (LM) test (Chou & Bentler, 1990).

We also hypothesized that there would be two second-order factors in the data set reflecting the strong relationships among the primary latent factors. The first hypothesized second-order factor considered was a protective skills factor and was tested using the three protective skills primary factors of goal setting, decision making, and coping skills. The second hypothesized second-order factor was labeled multiple problem behaviors and consisted of history of drug problems, delinquent behavior, and sexual risk behavior. The confirmatory models with and without the second-order factors were contrasted through chi-square difference tests. We hypothesized that there would be no decrement in fit when a second-order factor structure was imposed. An equally good fit would mean that looking at overarching constructs would be a useful conceptualization in terms of designing effective broad spectrum intervention programs for a variety of problem behaviors.

In addition, we performed two separate supplementary multiple group comparison analyses to ascertain that the factor structure and correlations among the latent variables were similar

by gender and by age. First, we split the sample by gender for the boys ($N = 277$) and girls ($N = 197$) and performed a first set of multisample analysis. In the second multisample analysis, we split the sample by age into two groups; one group was 12 to 18 years ($N = 170$), and the other group was older than 18 ($N = 304$). First, after assessing a baseline unrestrained model, multiple-group latent variable models tested the equivalence (invariance) of the measurement model among the groups (Byrne, Shavelson, & Muthén, 1989; Stein, Lee, & Jones, 2006). The factor loading of each measured variable on its latent factor was constrained to equality across the groups. We then added further stringency by contrasting the covariances between the latent variables in the model to determine whether these relationships were similar for the groups. The plausibility of the equality constraints was determined with chi-square difference tests.

Path model: Once the factor structure was con-firmed, we tested a predictive model in which the demographics, self-esteem, and social support predicted the intermediate protective skills second-order factor. In turn, the protective skills factor predicted the second-order multiple problem behavior outcome. It was hypothesized that protective skills could serve as a mediator between the background variables and the dependent variable of multiple problem behaviors. Mediation could be shown if (a) the background variables affected the mediator (protective skills), (b) the background variables affected the dependent variable (in this case, multiple problem behaviors), (c) the mediator affected the dependent variable, and (d) there was a reduction in the effect of the background variables on the dependent variable after controlling for the mediator (Baron & Kenny, 1986; MacKinnon & Fairchild, 2009; MacKinnon, Fairchild, & Fritz, 2007). Additional significant paths from the background variables were added if they were suggested by the LM test. Nonsignificant paths and covariances were gradually dropped until only significant paths and covariances among the predictors remained. Indirect effects mediated through the protective skills factor and through the multiple problem behaviors factor were also assessed. In addition to reporting significance levels of the indirect effects, we also report the standardized regression coefficients for the indirect effects, as they are more interpretable than unstandardized effects (Bentler, 2006).

RESULTS

Confirmatory Factor Analysis

Table 1 reports the means, standard deviations, ranges, and standardized factor loadings for the measured variables. All proposed manifest variables loaded significantly ($p < .001$) on their hypothesized latent factors. The fit indexes were acceptable once a small amount of model modification was performed based on the suggestions from the LM test: S-B χ^2 (575, $N = 474$) = 766.66; RCFI = .94, RMSEA = .027. Two correlated error residuals were added between two of the goal-setting items and two of the coping items. Table 2 reports the correlations among all of the primary latent variables, and the demographics before the second-order factor model was tested. There were exceptionally high correlations among the protective skills primary factors, which increased the plausibility of a second-order factor that could account for the relationships among them. Correlations among the problem

behaviors were also substantial although not as high as those among the protective skill factors.

The second-order factor model was tested in which the three primary protective skills latent variables (goal setting, decision making, and self-reliant coping) were indicated by one factor labeled protective skills, and the three problem behaviors were indicated by one factor labeled multiple problem behaviors. This model was contrasted with the final confirmatory factor analysis model reported above using a chi-square difference test. There was no significant decrement in fit between the second-order factor model and the primary factor model (adjusted $\chi^2_{\text{diff}}=36.50$, $df=27$, $p>.10$). This indicated that the second-order factor model was as good a representation of the relations among the variables as a model in which no second-order factor structure was imposed. We report an adjusted chi-square difference. The Satorra-Bentler scaled chi-square cannot be used directly for chi-square difference testing of nested models because a difference between two scaled chi-squares is not distributed as chi-square (Satorra & Bentler, 2001). An adjustment has been developed to counter this problem and was applied (Satorra & Bentler, 2001).

Baseline models provided the benchmark for further comparisons. The baseline model for the contrast among the boys and girls had an acceptable fit (S-B $\chi^2=1248.78$; RCFI = .95, RMSEA = .026). Adding the stringent invariance constraints on the full measurement model as well as among the covariances among the latent variables produced a nonsignificant decrement in fit (adjusted χ^2 difference = 38.49/40 df) and the fit indexes were still excellent. For the contrast among age groups (older and younger than 18), again there was an acceptable baseline model fit (S-B $\chi^2=1249.54$; RCFI = .95, RMSEA = .026). As was observed in the gender comparison, there was a nonsignificant decrement in fit after the invariance constraints were imposed (adjusted χ^2 difference = 50.23/40 df) and all of the fit indexes were still excellent. Thus, we had confidence that the models were applicable to both genders and to a wide range of youth in different developmental stages.

Path Models

The final path model had excellent fit statistics, S-B $\chi^2(610, N=474)=784.55$; RCFI = .95, RMSEA = .025. Results of the analysis with only significant paths included are depicted in Figure 1. Latent variables are represented by circles; measured variables are depicted in rectangles. Significant correlations among the predictors are also included. The second-order factor of protective skills was predicted by all of the background variables except for the number of times homeless. In addition to the hypothesized significant effect of protective skills on less multiple problem behaviors, there were two direct effects from the background predictors. Greater age and more times homeless independently predicted more multiple problem behaviors. However, age also had a significantly negative relationship with the primary latent variable of delinquency history alone (not depicted in the diagram), indicating that the younger study participants reported more delinquent behavior in the past 6 months than the older participants. This supplemental relationship was strongly suggested by the LM test and was added for fit improvement. The positive relationship between age and multiple problem behaviors was more a function of the joint positive relationships between age and history of drug problems and risky sexual behaviors (see Table 2 for the bivariate

associations). The model depicted in Figure 1 explained 31% of the variance in multiple problem behaviors. In a fully mediated model in which only protective skills predicted multiple problem behaviors, 15% of the variance in multiple problem behaviors was explained. A smaller model without the protective skills mediator explained 21% of the variance in multiple problem behaviors.

There also were several types of indirect effects. First, there were significant indirect effects on the multiple problem behaviors second order factor mediated through protective skills. These significant indirect effects included negative effects of both self-esteem (standardized regression coefficient = $-.12$; $p = .01$) and social support ($r = -.10$, $p = .01$), and a younger age ($r = -.06$, $p = .05$) on multiple problem behaviors. The primary latent factors were also impacted by indirect effects mediated through their second-order factors. Goal setting, decision making, and self-reliant coping were indirectly impacted by greater age ($r = .13$, $.11$, $.13$, respectively, $p = .01$), more self-esteem ($r = .27$, $.22$, $.26$; $p = .001$), and more social support ($r = .21$, $.18$, $.21$, $p = .001$). History of drug problems, risky sexual behavior and delinquency history were indirectly impacted by more times homeless ($r = .22$, $.16$, $.16$, respectively, $p = .001$), less protective skills ($r = -.27$, $-.20$, $-.20$, $p = .001$), less self-esteem ($r = -.08$, $-.06$, $-.06$, $p = .001$) and less social support ($r = -.07$, $-.05$, $-.05$, $p = .001$), and greater age ($r = .15$, $.11$, $.11$, $p = .01$) as mediated by multiple problem behaviors.

DISCUSSION

Higher levels of problem solving and planning skills were related to lower levels of multiple problem behaviors in homeless youth, suggesting both the positive impact of preexisting personal assets of these youth and important programmatic targets for further building their resilience and decreasing problem behaviors. It is encouraging that even within this sample of homeless youth, those who possessed stronger goal-setting, decision-making, and self-reliant coping skills were also less likely to engage in multiple problem behaviors. It is important to note that the protective effect of goal setting, decision making, and self-reliant coping were not necessarily problem behavior specific. They did not impact one specific behavior, such as delinquency, but impacted the entire multiple problem behavior second-order factor. Therefore, they appear to be critical life skills in a variety of contexts. The significance of these global life skills has implications for efficaciously intervening with these youth to target varied dimensions of problem behavior.

Further, protective skills were not significantly related to the number of times a youth had been homeless. Previous research indicates that more time living on the streets often translates into more trouble (Whitbeck, Hoyt, Yoder, Cauce, & Paradise, 2001), and our results support this finding. However, the types of life skills measured in this study were neither worse nor better for those who have had multiple episodes of homelessness. Whereas we found an independent relationship between time on the streets and multiple problem behaviors, it appears that the problem solving, goal setting, and coping skills the youth brings with them to the streets continues to be protective, regardless of how many times a youth reports homelessness. These findings suggest that youth who possess the protective skills may be better able to resist the multiple problem behaviors that harm many homeless

youth. Regardless of how long a youth has been on the streets, increasing their malleable protective skills may result in reducing multiple problem behaviors.

Similarly, age also was significantly related to both protective skills and multiple problem behaviors. Older youth were more likely to possess protective skills, but they were also more likely to report multiple problem behaviors. These results are not surprising given that as a youth ages, the more opportunity exists for both increasing skills and engaging in risk behaviors. Developmentally, experimentation and problem behaviors manifest during middle and late adolescence, suggesting an increase in these behaviors with age. However, it also appears that youth are able to increase protective skills over time. These findings support the well-established need for prevention programs to be initiated early, so as to prevent engagement in problem behaviors and support the development of important protective skills.

Although social support and self-esteem were not directly related to problem behaviors once the intervening impact of skills was included, the significant indirect relationships mediated through protective skills suggest the importance of these constructs as personal assets. The magnitude of the standardized regression coefficients reported confirms the substantial relationships as well. Although some homeless youth are likely to struggle with self-derogation, these data suggest that focusing on self-esteem or social support alone may not be entirely effective in reducing problem behaviors in these youth. However, enhancing self-esteem and bolstering social support may, in turn, strengthen problem-solving and planning skills, which may lessen maladaptive behaviors.

The findings of the study must be examined in the context of its limitations. This study used cross-sectional data; therefore, alternative directions of influence are possible. However, this model supports theorized relationships found in the literature. In addition, the current study included only those youth who were receiving services at a drop-in center or shelter for homeless youth, limiting which homeless youth are included in this study. However, research indicates that 80% of homeless youth in Los Angeles attend drop-in centers (De Rosa et al., 1999), suggesting that our study sample includes a broad sample of homeless youth. Additional research is needed to provide replication for the structural models presented and to compare different models.

Implications for Research, Policy, and Practice

This study has important implications for improving the well-being of homeless youth. The examined model suggests that helping youth enhance their skills in goal setting, decision making, and self-reliant coping could lessen a variety of problem behaviors commonly found among homeless youth. These skills are highly interrelated, as evidenced by our analysis and conjointly exert an influence on maladaptive behaviors. In this case, the whole may be greater than the sum of the parts. Therefore, as service providers conceptualize and build intervention programs to curb a wide range of maladaptive and risky behaviors among homeless youth, they should consider targeting the highly interrelated life skills of goal setting, decision making, and self-reliant coping. Building an effective life skills set among these youth may be more productive than merely focusing on curbing negative behaviors.

These data also suggest the importance of developing self-esteem and sources of social support as adjuncts and precursors to life-skills-building programs. Although the lack of a direct relationship between self-esteem and social support suggests that focusing on these factors alone may be insufficient to impact multiple problem behaviors, they serve an important role in building the personal context that enables the acquisition of the protective skills necessary to combat problem behaviors. A foundation of confidence in oneself and underpinning of self-reliance may enable homeless youth to acquire the necessary skills to engage in strategies to reduce risk.

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FIGURE 1.

Significant regression paths in model testing impact of protective skills on multiple problem behaviors among homeless youth ($N = 474$). *Note:* Large circles represent latent variables; rectangles represent single-item indicators. Protective skills and multiple problem behaviors are second-order latent variables indicated by their primary latent variables. Single-headed arrows represent regression coefficients. Correlations among predictors depicted with double-headed arrows. Regression coefficients are standardized. $a_p .05$. $b_p .01$. $c_p .001$.

TABLE 1

Means, Standard Deviations, Ranges, and Factor Loadings of Measured Variables in the Confirmatory Factor Analysis

Variables	M (SD)	Factor Loading ^a
Demographics		
Age in Years (Range = 12–24)	19.4 (2.57)	NA
Gender Female (1–2)	1.41 (0.49)	NA
Times Homeless (1 – >100) ^b	8.2 (27.50)	NA
Latent Variables		
Self-Esteem (1–4)		
Disappointed With Self	2.78 (1.07)	.51
Like Way Leading Their Life	2.45 (1.22)	.35
Happy With Self Most of the Time	3.00 (1.10)	.46
Like the Kind of Person They Are	2.84 (1.28)	.52
Happy Being the Way They Are	2.71 (1.24)	.69
Social Support (1–3)		
Helpfulness—Personal Problem	2.31 (0.43)	.64
Helpfulness—When Need Money and Other Things	1.99 (0.50)	.59
How Much Fun	2.38 (0.44)	.60
Goal Setting (1–4)		
How Often Work on Goals Set for Self	2.73 (0.91)	.76
Once I Set a Goal, I Don't Give Up	3.22 (0.71)	.53
When Do Something, Give It My Best	3.37 (0.61)	.51
Think About Future	3.11 (0.95)	.58
How Often Set Goals to Achieve	2.71 (0.96)	.76
I Think About What Need to Achieve	3.02 (0.85)	.81
Decision Making (1–4)		
Stop and Think About Options	2.72 (0.85)	.71
Think How Decisions Affect Others	2.61 (0.95)	.60
Think What Happens After Decision	2.70 (0.94)	.64
I Make Good Decisions	2.66 (0.82)	.52
Self-Reliant Coping (1–5)		
Think of Good Things in Life	3.55 (1.22)	.60
Organize Life and What Have to Do	3.34 (1.22)	.62
Figure Out How to Deal With Problem	3.85 (1.17)	.40
Get Job or Work Harder at One	2.66 (1.37)	.49
See Good Things in Difficult Situation	3.60 (1.20)	.70
Try to Make Own Decisions	4.11 (0.98)	.37
History of Drug Problems (1–5)		
Drug Problem Composite 1	1.12 (0.43)	.53
Drug Problem Composite 2	1.43 (0.81)	.78
Drug Problem Composite 3	1.23 (0.60)	.79

Variables	M (SD)	Factor Loading ^a
Drug Problem Composite 4	1.47 (0.71)	.69
Risky Sexual Behavior		
Unprotected Sex ^c (0–226)	12.29 (76.62)	.71
Anal Sex ^c (0–90)	2.61 (15.36)	.75
Sex Trading for Drugs or Money (0–60)	0.90 (5.30)	.65
Delinquency History (0–1)		
Delinquency Composite 1	.05 (0.16)	.77
Delinquency Composite 2	.07 (0.19)	.76
Delinquency Composite 3	.14 (0.25)	.72

Note: All factor loadings significant ($p < .001$). NA = not applicable.

^aFactor loadings are standardized.

^bLog-transformation used in the analysis.

^cSquare-root transformation used in the analysis.

TABLE 2

Correlations Among Model Constructs

Subscale	1	2	3	4	5	6	7	8	9	10
1. Age	—									
2. Female	-.10*	—								
3. Times Homeless	.09	.07	—							
4. Self-Esteem	.05	-.16**	-.08	—						
5. Social Support	-.06	.05	-.06	.17**	—					
6. Goal Setting	.06	.01	-.02	.30***	.29***	—				
7. Decision Making	.16**	.05	-.08	.20**	.11	.64***	—			
8. Self-Reliant Coping	.18***	.03	-.10	.30***	.30***	.73***	.61***	—		
9. History of Drug Problems	.15**	.02	.27***	-.20***	-.11*	-.23***	-.20***	-.15**	—	
10. Risky Sexual Behavior	.15**	-.04	.21***	-.09	-.11*	-.18***	-.18**	-.16***	.30***	—
11. Delinquency History	-.14**	-.10*	.10*	-.08	-.02	-.20***	-.26***	-.13*	.33***	.20***

*
p .05.**
p .01.***
p .001.