Effects of Abstinence Self-Efficacy and Coping on Substance Use Among Homeless Youth

Dissertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

YUN HWAN KIM, M.A.

Graduate Program in Human Ecology

The Ohio State University

2012

Dissertation Committee:
Natasha Slesnick, Advisor
Xin Feng, Co-Advisor
Michael Glassman
Cynthia Buettner
Copyrighted by

YUN HWAN KIM

2012
Abstract

Homeless youth are a vulnerable and understudied group who has consistently reported elevated levels of substance use. Understanding the factors associated with substance use within this population may help guide future intervention efforts. Although few studies have examined the role of abstinence self-efficacy and coping in substance use among homeless youth, some research indicates that higher abstinence self-efficacy and greater use of task-oriented coping are related to lower substance use, while greater use of emotion-oriented and avoidance-oriented coping are related to higher substance use. Accordingly, the current study examined the relationship between abstinence self-efficacy, coping, and substance use among homeless youth, while controlling for the effects of age, gender, and ethnicity.

A sample of 40 homeless youth (ages 17 to 24) was recruited from the only drop-in center in a Midwestern city. Data were obtained at one point in time, and included information regarding abstinence self-efficacy, coping, and frequency of alcohol and drug use. A series of hierarchical regression analyses were conducted. In order to control for the effects of age, gender, and ethnicity, these variables were entered in the first step, and abstinence self-efficacy and coping were included in the second step of analysis.

A significant relationship was found between abstinence self-efficacy and alcohol and drug use. Specifically, higher abstinence self-efficacy was related to lower alcohol and drug use. Additionally, an interaction between abstinence self-
efficacy and substance use was found in which African American, compared to non-
African-American youth, reported reduced alcohol use as their level of abstinence 
self-efficacy in social pressure to use increased. However, coping was not associated 
with substance use. The current study provides empirical support for the relationship 
between abstinence self-efficacy and substance use among homeless youth. The 
findings have practical implications. Although a longitudinal design and an 
intervention trial is needed to confirm, increasing abstinence self-efficacy through 
intervention efforts may be an effective strategy for reducing substance use among 
these youth.
Acknowledgments

I would like to acknowledge my advisor, Dr. Natasha Slesnick, who has endlessly encouraged me to move forward. Natasha, thanks for continuing to give me next chances and never letting me give up, so I could finally finish this long journey. I also appreciate all of your support that made this challenging journey much smoother. I can’t imagine how I could have finished it without you. You will surely be missed.

I would like to acknowledge my co-advisor, Dr. Xin Feng. Xin, your advice was always succinct but exhaustive, which I think is the best encouragement that enables me to take the next step. I truly appreciate your calm, but continuous and caring support.

I would like to acknowledge Dr. Michael Glassman who has been my mentor throughout all my years here. Michael, you always showed me how to open a new gate. I sincerely appreciate the seeds of creativity and insight that you planted in me.

I would like to acknowledge Dr. Cynthia Buettner. Cynthia, I truly appreciate that your answer was always “Yes” to all my requests for help of any and all kind. I will not be able to forget your kindhearted support.

I would like to acknowledge all youth who graciously agreed to be a part of this project. I will remember your goodwill, and continue to make efforts to turn your goodwill to be an actual power to make this world better.

I would like to acknowledge all those who stood next to me and were always there for me to cheer me up. Now, I am feeling so lucky that I have so many of you
that I can’t list all of your names here. But, I will inscribe all your names deep in my
mind, so I can also be always there for you.

Lastly, this project was supported by the Alumni Grants for Graduate
Research and Scholarship from the graduate school of the Ohio State University. I
sincerely appreciate the high aims of all alumni who keep providing better
opportunities for their juniors.
Vita

1980............................... Born – Cheonan, South Korea

1999............................... High School Diploma, Cheonan, South Korea

2006............................... B.S. Child and Family Studies, Yonsei University, Seoul, South Korea

2008............................... M.A. Child and Family Studies, Yonsei University, Seoul, South Korea

2006-2008.......................... Graduate Teaching Associate, Department of Child and Family Studies, Yonsei University, Seoul, South Korea

2006-2008.......................... Program Coordinator, Children’s Science Camp, Child Development Research Institute, Yonsei University, Seoul, South Korea

2008-2010.......................... Research Assistant, Department of Human Development and Family Science, The Ohio State University

2010-present........................ Graduate Teaching Associate, Department of Human Development and Family Science, The Ohio State University
Publications


Fields of Study

Major Field: Human Ecology

Specialization: Human Development and Family Science
Table of Contents

Abstract ................................................................................................................. viii
Acknowledgments ................................................................................................. viii
Vita .......................................................................................................................... vi
Table of Contents ................................................................................................. viii
List of Tables .......................................................................................................... xii
List of Figure ......................................................................................................... xiii

Chapter 1: Introduction ......................................................................................... 1

Chapter 2: Review of Literature .......................................................................... 4
  Homeless Youth .................................................................................................... 4
    Definition .............................................................................................................. 4
    Estimated size of the population ...................................................................... 5
  Substance Use ....................................................................................................... 5
    Heightened level of substance use .................................................................... 5
    Negative consequences .................................................................................... 6
    Relevance to this study ..................................................................................... 7
  Factors Associated With Substance Use ............................................................. 7
    Research to date ................................................................................................. 7
    Alcohol versus drug use ................................................................................... 8
  Abstinence Self-Efficacy ...................................................................................... 10
    Theory of self-efficacy ...................................................................................... 10
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediational processes</td>
<td>10</td>
</tr>
<tr>
<td>Domain-specificity</td>
<td>11</td>
</tr>
<tr>
<td>Demographic characteristics</td>
<td>12</td>
</tr>
<tr>
<td>Age</td>
<td>12</td>
</tr>
<tr>
<td>Gender</td>
<td>12</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>13</td>
</tr>
<tr>
<td>Abstinence self-efficacy and substance use</td>
<td>13</td>
</tr>
<tr>
<td>Abstinence self-efficacy and homeless youth</td>
<td>14</td>
</tr>
<tr>
<td>Coping</td>
<td>18</td>
</tr>
<tr>
<td>Theory of coping</td>
<td>18</td>
</tr>
<tr>
<td>Dimensions of coping</td>
<td>18</td>
</tr>
<tr>
<td>Demographic characteristics</td>
<td>20</td>
</tr>
<tr>
<td>Age</td>
<td>20</td>
</tr>
<tr>
<td>Gender</td>
<td>21</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>21</td>
</tr>
<tr>
<td>Coping and substance use</td>
<td>21</td>
</tr>
<tr>
<td>Coping and homeless youth</td>
<td>23</td>
</tr>
<tr>
<td>The Current Study</td>
<td>27</td>
</tr>
<tr>
<td>Hypothesis 1</td>
<td>27</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>27</td>
</tr>
<tr>
<td>Chapter 3: Method</td>
<td>28</td>
</tr>
<tr>
<td>Participants</td>
<td>28</td>
</tr>
<tr>
<td>Procedures</td>
<td>29</td>
</tr>
<tr>
<td>Measures</td>
<td>30</td>
</tr>
</tbody>
</table>
Demographic questionnaire .................................................................................. 30
Abstinence self-efficacy ...................................................................................... 30
Coping ............................................................................................................... 31
Substance use .................................................................................................. 32
Statistical Analyses .......................................................................................... 32
Preliminary analyses ......................................................................................... 32
Hierarchical regression analyses ..................................................................... 33

Chapter 4: Results ............................................................................................. 34
Participant Characteristics ................................................................................ 34
Abstinence Self-Efficacy .................................................................................... 35
Correlations Among Variables .......................................................................... 35
Hierarchical Regression Analyses ..................................................................... 36
Alochol use ....................................................................................................... 37
Drug use ........................................................................................................... 39

Chapter 5: Discussion ........................................................................................ 40
Hypothesis 1 ...................................................................................................... 40
An interaction between abstinence self-efficacy and ethnicity ......................... 42
Hypothesis 2 ...................................................................................................... 44
Limitations ........................................................................................................ 45
Strengths ........................................................................................................... 47
Implications ....................................................................................................... 47
Conclusion and Future Directions .................................................................... 49

References ....................................................................................................... 51
Appendix A: Questionnaires ............................................................................. 65
Appendix B: Tables ........................................................................................................... 72
Appendix C: Figure .......................................................................................................... 79
Table of Contents

Table 1. Participant Characteristics ................................................................. 73
Table 2. Homeless Experiences ................................................................. 74
Table 3. Descriptive Statistics of Sample ...................................................... 75
Table 4. Correlations Among Variables .......................................................... 76
Table 5. Regression Models Explaining Alcohol Use ........................................ 77
Table 6. Regression Models Explaining Drug Use ............................................. 78
Table of Figure

Figure 1. Interaction Between Ethnicity and Abstinence Self-Efficacy in Social Pressure to Use on Alcohol Use ................................................................. 80
CHAPTER 1
Introduction

Youth homelessness is a significant public health concern in the United States. A substantial number of youth spend any given night on the street, and the number has increased dramatically over the past two decades (Bucher, 2008; National Coalition for the Homeless, 2008). Homeless youth are vulnerable to a wide range of risk factors including alcohol and drug abuse, delinquent behaviors, poor physical/psychological well-being, and educational/occupational disadvantages (Paradise et al., 2001; Whitbeck, & Hoyt, 1999). In combination, these factors can increase the risk for chronic homelessness (Robertson & Toro, 1999; Toro, Dworsky, & Fowler, 2007).

Some improvements in policy and research have been noted. As a part of a report for the National Symposium on Homelessness Research, Robertson and Toro (1999) and Toro et al. (2007) concluded that accessible shelters and other emergency services have vastly improved since 1987 when the Stuart B. McKinney Homeless Assistance Act (Public Law 100-77) was signed into law. With longitudinal studies and evaluations of interventions starting to appear in the literature, research on homeless youth has also made progress in the past decade (Slesnick, Dashora, Letcher, Erdem, & Serovich, 2009; Toro et al. 2007). However, homeless youth remain one of the most understudied populations, even compared to other homeless populations such as adults and families (Moore, 2005). While the majority of currently available
research identifies and describes problems associated with homelessness among youth (Robertson & Toro, 1999; Toro et al., 2007), little information on the relationship between these factors and self-efficacy and coping is available.

Homeless youth report a disproportionately high frequency and prevalence of substance use (Toro et al., 2007). In general, substance use has a negative impact on the youth’s physical and psychological well-being (Hawkins, Catalano, & Miller, 1992; Newcomb & Bentler, 1998; Swadi, 1999). Further, substance use can exacerbate other problems such as risky sexual behaviors and suicide attempts (Anderson, Freese, & Pennbridge, 1994; Molnar, Shade, Kral, Booth, & Watters, 1998; Rotheram-Borus et al., 1992). In addition, substance use has been identified as an obstacle to homeless youth’s re-integration into mainstream society (Caton et al., 2005; Toro et al., 2007). Given homeless youth’s high level of substance use and its negative impact on these vulnerable youth, efforts to identify mechanisms associated with substance use, such as self-efficacy and coping, among these youth are needed, as this information can inform intervention efforts. Bousman et al. (2005) noted that these variables remain understudied among homeless youth.

Within the general population, abstinence self-efficacy and coping have received substantial research attention as promising predictors of substance use (Witkiewitz & Marlatt, 2004). The term “self-efficacy” refers to the “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3), and “abstinence self-efficacy” refers to the belief that one can abstain from substance use in various high-risk situations for substance use (Bandura, 1977; DiClemente, 1981; DiClemente, Carbonari, Montgomery, &
Hughes, 1994). The relationship between abstinence self-efficacy and substance use among homeless youth has not yet been examined.

Coping, also has received little research attention among homeless youth. The term “coping” refers to “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984, p. 141). Research among youth in the general population has examined the relationships between coping styles and adjustment problems including substance use (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Findings from that research indicate that problem-focused coping and engagement coping are usually related to lower levels of substance use, while emotion-focused coping and disengagement coping are generally associated with increased levels of substance use (Wills, Sandy, Yaeger, Cleary, & Shinar, 2001). A few researchers have also examined the relationship between coping and adjustment problems, including substance use, among homeless youth (i.e., Dashora, Erdem & Slesnick, 2011; Garren, 2008; Unger et al., 1998; Votta & Manion, 2003). However, conclusions cannot be drawn due to the limited number of studies and contradictory findings among them.

In sum, homeless youth report high levels of substance use and its associated negative consequences. Given the lack of research on the role of abstinence self-efficacy on substance use, and only a handful of studies on the relationship between coping and substance use among homeless youth, the current study investigated the relationship between homeless youth’s substance use and abstinence self-efficacy and coping.
CHAPTER 2
Review of the Literature

Homeless Youth

**Definition.** The term “homeless youth” is difficult to define, as it is often used as an umbrella term with wide variation (Moore, 2005). The literature suggests that the characteristics of homeless youth, such as the degree of exposure to the challenges of street life and the severity of their psychosocial problems, differ by age and residential status (Boesky, Toro, & Bukowski, 1997; Toro et al., 2007). Accordingly, operationalizing these variables when understanding the sample of homeless youth is important.

The McKinney-Vento Act (2002) provides a widely used definition for homeless youth as “individuals who lack a fixed, regular, and adequate nighttime residence; and an individual who has a primary nighttime residence that is: a) a supervised publicly or privately operated shelter designed to provide temporary living accommodations (including welfare hotels, congregate shelter and transitional housing for the mentally ill; b) an institution that provides a temporary residence for individuals intended to be institutionalized; or c) a public or private place not designed for, or ordinarily used as regular sleeping accommodations for human beings.” Studies frequently report that homeless youth take refuge on the streets, abandoned cars/buildings/houses, public parks, and acquaintances’ couches (e.g.,
Ringwalt et al., 1998; Unger et al., 1998). Furthermore, studies usually include youth up to the age of 24 years (Robertson & Toro, 1999).

**Estimated size of the population.** Despite the fact that homeless youth comprise a surprisingly large population, it is one of the most understudied. Due to inherent challenges in identifying and tracking homeless youth, estimates of this population in the United States vary widely. Factors such as multiple definitions of homeless youth, estimation techniques, and sampling strategies may explain the lack of consensus (Ringwalt et al., 1998; Robertson & Toro, 1998; Toro et al., 2007). However, it is widely accepted that this number is “substantial and widespread,” as a recent report estimated that from 500,000 to 2.8 million youth are homeless any given night (Cooper, 2006; Ringwalt et al., 1998; Robertson & Toro, 1998). Furthermore, the number of homeless youth continues to increase, with 5-7% of American youth becoming homeless every year (National Coalition for the Homeless, 2009; National Alliance to End Homelessness, 2007).

**Substance Use**

**Heightened level of substance use.** Despite challenges to comparing homeless youth to non-homeless youth, Green, Ennett and Ringwalt (1997) provided one of the most reliable comparisons. Specifically, Green et al. (1997) compared the estimates of substance use among a group of street-recruited homeless youth, a group of shelter-recruited homeless youth, and a nationally representative sample of ‘normal’ youth, while controlling for the effects of age, gender, and ethnicity. These researchers found that 80.9% of street youth used alcohol, 75.3% used marijuana, and 54.7% used other drugs. They also found that 67.0% of shelter youth used alcohol,
52.0% used marijuana, and 33.7% used other drugs. In contrast, 56.7% of the youth in the normative group used alcohol, 23.4% used marijuana, and 15.7% used other drugs. More recent studies have also confirmed Green et al.’s (1997) findings, consistently reporting increased levels of substance use among homeless youth (e.g., Bousman et al., 2005; Rosenthal, Mallett, Milburn, & Rotheram-Borus, 2008; Slesnick et al., 2009).

Further, many researchers report that the level of substance use increases with time lived on the streets (Mallet, Rosenthal & Keys, 2005; Toro et al., 2007). For example, Kipke and colleagues (1993; 1997) found that the length of time of homelessness was associated with the prevalence and severity of substance use, and with risk for a substance abuse disorder. Rosenthal et al. (2008) examined differences in the levels of substance use between newly homeless youth whose length of homelessness was less than six months, and youth whose length of homelessness was more than six months. They found that youth with longer homelessness reported significantly more drug use and drug dependency.

**Negative consequences.** Increased substance use among homeless youth has negative consequences both at individual and societal levels. At the individual level, substance use can negatively affect the physical/psychological health of homeless youth and can lead to long-term negative consequences (Klee & Reid, 1998a). Also, substance use predicts risky sexual behaviors (e.g., unprotected sex and multiple sexual partners) which are risk factors for HIV infection and/or teen pregnancy (Clements, Gleghorn, Garcia, Katz, & Marx, 1997; Koopman, Rosario, & Rotheram-Borus, 1994; Solorio et al., 2008). A higher suicide rate is reported among homeless youth, usually by drug overdose (Klee & Reid, 1998b). Indeed, suicide and drug
overdose have been identified as the leading causes of mortality among young homeless people (Roy, Haley, Leclerc, Boudreau, & Boivin, 2007).

At the societal level, Whitbeck and Hoyt (1999) suggested that homeless youth become involved in selling drugs, partly in order to support their own substance use. Van Leeuwen et al. (2004) found that 11% of their homeless sample reported trading sex for instrumental purposes, including acquiring drugs. Various offenses such as burglary, robbery, and theft are committed among homeless youth in pursuit of and/or after using substances (Sanders, Lankenau, Bloom, & Hathaz, 2009). Not surprisingly, substance abuse disorder is associated with a high rate of arrest among homeless and runaway adolescents (Chen, Thrane, Whitbeck, & Johnson, 2007).

Relevance to this study. As reviewed above, homeless youth report heightened levels of substance use that increases over time, possibly as a consequence of living on the streets. Elevated substance use is associated with various negative consequences, bringing about considerable individual and societal costs. Therefore, research on factors associated with substance use can inform future steps towards identifying effective methods to decrease substance use among these youth.

Factors Associated With Substance Use

Research to date. Among non-homeless youth, factors associated with substance use have been widely examined (e.g., Hawkins et al., 1992; Newcomb & Bentler, 1989; Swadi, 1999). Numerous factors were found to increase risk for substance use, which are largely classified into three levels: individual (e.g., attitude), interpersonal (e.g., parents/peers), and contextual (e.g., laws). Despite the wide variation in findings, there is consensus that interpersonal-level factors, namely
parents and peers, have most consistently predicted youth’s substance use, yielding a large number of studies (Chassin, Hussong & Beltran, 2009; Newcomb & Bentler, 1989).

Among homeless youth many studies have focused on the effects of parents and peers on substance use. For example, the direct and indirect effects of parents on substance use among homeless youth, measured by parental monitoring, parental substance use, and parent-child violence, have been reported in the literature (Bousman et al., 2005; Haber & Toro, 2009; McMorris, Tyler, Whitbeck, & Hoyt, 2002). Peer pressure, having substance-using peers, and the modeling of other peers’ delinquent behaviors appear to be related to increased substance use among homeless youth (Bousman et al., 2005; Diaz, Dusenbury, Botvin, & Farmer-Huselid, 1997; Ennett, Bailey, & Federman, 1999; McMorris et al., 2002; Thompson, Jun, Bender, Ferguson, & Pollio, 2010; Wenzel, Tucker, Golinelli, Green, & Zhou, 2010).

Hudson and colleagues (2009), however, suggested that further exploration of individual-level factors would have unique implications for homeless youth’s substance use. The authors conducted focus-group interviews with 24 homeless youth in order to examine their perspectives on substance use. They reported that initiating and stopping substance use were frequently mentioned as a ‘personal decision’ during the interviews. Based on this, Hudson et al. (2009) suggested that further investigation of individual-level factors which influence substance use might be a promising way to better understand substance use behaviors among homeless youth.

Abstinence self-efficacy and coping are known to be powerful individual-level factors that affect substance use among non-homeless populations and have drawn considerable research attention (Witkiewitz & Marlatt, 2004). However, in the
homeless youth literature, these factors are among the least examined. Therefore, exploring the specific role of abstinence self-efficacy and coping on substance use among homeless youth would likely provide useful data for prevention and intervention programs.

Alcohol versus drug use. Research on substance use may benefit from examining alcohol and drug use separately. In reviewing various risk factors for substance use among adolescents and youth, Newcomb and Bentler (1989) pointed out the importance of exploring risk factors for different substances, considering differences in physiological and psychological effects, one’s responses, and negative consequences across substances.

Rhule-Louis, Bowen, Baer, and Peterson (2008) provided similar suggestions with regard to research on substance use among homeless youth. Specifically, they noted that even though polydrug use is common, studies examining substance use among homeless youth focus only on one drug of choice, such as alcohol. With this in mind, researchers suggest separating different types of substances in their analyses considering differences between motives to use alcohol vs. drugs, functions of alcohol vs. drugs in the participants’ lives, and the contexts in which alcohol and drugs are used (Rhule-Louis et al., 2008; Thompson et al., 2010). Indeed, recent studies that tested predictors of substance use reported that predictors of alcohol use were different from those of drug use. Therefore, considering potential differences between alcohol and drug use, the current study examined abstinence self-efficacy and coping associated with alcohol use and drug use, separately.
Abstinence Self-Efficacy

**Theory of self-efficacy.** Self-efficacy theory explains the effect of self-efficacy on human behavior. Since 1977 when Bandura published his seminal article, “Self-efficacy: Toward a unifying theory of behavioral change,” this theory has gained increasing popularity across various fields of human behavior, as reflected in more than 20,000 citations to date. In fields such as athletics, education, and mental and physical health, self-efficacy theory has been used as a particularly useful guiding theory that aims to enhance functional and desirable behavior. The area of substance use is no exception. For example, addictive and risky behaviors are addressed by Bandura (1997) and Pajares and Urdan (2006) in their comprehensive reviews of the research on self-efficacy.

The literature notes many important theoretical issues associated with self-efficacy. The most frequently mentioned aspects of self-efficacy include 1) mediational processes and 2) domain-specificity. These aspects guide 1) the specific hypotheses on the relationship between self-efficacy and behavior, and 2) the selection of measures to be used, respectively, as discussed below.

**Mediational processes.** High self-efficacy is related to desirable behaviors or better functioning than low self-efficacy. Bandura (1977, 1997) suggested four mediational processes – *cognitive, motivational, affective,* and *selective* – that explain the pattern of this relationship. The *cognitive* process focuses on one’s thought pattern. People with high self-efficacy hold a positive outlook on given tasks and accompanying difficulties. Accordingly, while performing a given task, they conceptualize difficulties as challenges to eventually overcome, rather than obstacles to give in to. The *motivational* process focuses on the amount of effort that people
exert on a given task and the sustainability of the effort in the face of difficulties. People with higher self-efficacy usually invest more effort in a given task, and tend to maintain the effort longer despite difficulties, compared to people with lower self-efficacy. The \textit{affective} process focuses on one’s emotional state while one is performing a given task. People with low self-efficacy often experience emotions that intervene with successful and efficient performance such as helplessness or depressive mood. The \textit{selective} process focuses on the type of activities and environments that people choose. People with high self-efficacy often choose appropriately challenging levels of activities which increase the possibility of learning, growth, and success. In contrast, people with low self-efficacy often pursue easily achievable activities that may be at a lower level than their actual ability, limiting their potential. Again, these processes imply that high self-efficacy is associated with more favorable outcomes than low self-efficacy.

Bandura (1999) provided specific examples of these processes in the context of substance use. He suggested that, when encountering difficulties such as high-risk situations for substance use, people with high self-efficacy, compared to those with low self-efficacy, are more capable of envisioning the negative consequences of substance use and positive rewards of sobriety (\textit{cognitive}). Also, people with high self-efficacy are more likely to motivate themselves to make various efforts not to use substances (\textit{motivational}), and to pursue activities that will replace substance use (\textit{selective}). These examples also suggest that people with high self-efficacy would report decreased levels of substance use than those with low self-efficacy.

\textbf{Domain-specificity.} Bandura (1997) maintains that self-efficacy should be understood as a “differentiated set of self-beliefs linked to distinct realms of
functioning” (p. 307). Given this domain-specific nature of self-efficacy, researchers have focused on various types of self-efficacy according to their topic of interest, such as academic self-efficacy, teacher self-efficacy, and coping self-efficacy. Superior predictive validity of the self-efficacy measure was reported when a domain-specific self-efficacy measure, rather than a general self-efficacy measure, was used (Murphy et al., 2001). Accordingly, Bandura (2006) suggests that researchers use a domain-specific self-efficacy measure. With regard to substance use, abstinence self-efficacy is the most widely used domain-specific self-efficacy, which refers to one’s belief that he/she can abstain from substance use (Bandura, 1977, 1997; DiClement, Fairhurst & Pitrowski, 1995; Sklar, Annis, & Turner, 1997).

**Demographic characteristics.** Studies suggest that demographic characteristics such as age, gender, and ethnicity should be carefully taken into account in self-efficacy research, as reviewed below.

*Age.* Change in one’s level of self-efficacy occurs especially when people encounter new challenges as they advance through developmental stages such as adolescence and young adulthood (Bandra, 1997). Studies conducted using domain-specific self-efficacy measures generally show that the level of self-efficacy decreases from early adolescence up to young adulthood (Schunk & Meece, 2006), which has also been found with abstinence self-efficacy (Carvajal, Hanson, Downing, Coyle, & Pederson, 2004).

*Gender.* Research findings on gender differences in one’s level of self-efficacy are not uniform; some studies found higher self-efficacy among female adolescents (e.g., Britner & Pajares, 2001) while some studies found higher self-efficacy among male adolescents (e.g., Meece & Jones, 1996). In addition, some
studies reported no gender differences (e.g., Smith, Sinclair, & Chapman, 2002). Differences in self-efficacy by gender have been noted in related fields such as education. For example, higher self-efficacy in language arts has been observed among female adolescents while higher self-efficacy in mathematics has been observed among male adolescents (e.g., Jabobs et al., 2002). In sum, because self-efficacy may differ by gender, several researchers have recommended that gender be controlled in studies of self-efficacy among youth (Schunk & Meece, 2006).

*Ethnicity.* The process of self-efficacy formation and the effect of self-efficacy on behavior may differ across ethnic groups (Schunk & Meece, 2006). Ethnic differences were reported among youth in the general population. Specifically, Carvajal et al. (2004) found that Asian American and European American youth reported higher levels of abstinence self-efficacy than Latino youth.

*Abstinence self-efficacy and substance use.* The relationship between abstinence self-efficacy and substance use has been well established in the literature among non-homeless youth. Generally, as suggested by self-efficacy theory, high levels of abstinence self-efficacy are related to various favorable outcomes of substance use. For example, Barkin, Smith and Durant (2002) examined the relationship between abstinence self-efficacy, current substance use and anticipated substance use during the subsequent year among 2,646 seventh-grade students. The authors reported that the level of self-efficacy, or ability to say “no” when offered substances, was negatively associated with the current level of substance use, as well as the reported intention to use alcohol and drugs during the next year.

Similarly, using a sample of 2,004 middle school students, Carvajal and colleagues (2004) examined determinants of smoking. Self-efficacy to resist smoking
was assessed by a 3-item, self-report questionnaire measuring how sure one is that smoking can be avoided when peers smoke. The authors reported that self-efficacy to resist smoking significantly predicted current smoking, with the relationship being negative.

Burleson and Kaminer (2005) explored the predictive role of abstinence self-efficacy on treatment outcome in 88 adolescents with a substance use disorder. The authors measured abstinence self-efficacy using the revised 39-item situational confidence questionnaire (SCQ; Annis, 1987), which assesses the perceived confidence to resist alcohol or substance use in three potentially high-risk situations for substance use: where people experience negative affect, where they experience positive affect, and where they experience social pressure to use substances. The authors reported that high abstinence self-efficacy under negative affect situations was negatively related to substance use, concluding that the level of abstinence self-efficacy predicted subsequent drug use. In sum, the above findings suggest that high abstinence self-efficacy appears to play a protective role in substance use among youth.

**Abstinence self-efficacy and homeless youth.** The predictive role of abstinence self-efficacy in substance use behaviors was reported among homeless adult samples (e.g., Arnsten, Reid, Bierer, & Rigotti, 2004; Nyamathi, Stein, & Bayley, 2000). For example, Arnsten, and colleagues (2004) examined the relationship between abstinence self-efficacy and smoking cessation-related outcomes among a homeless adult sample. The participants of the study were 98 homeless smokers with a mean age of 44 years, recruited from outpatient and inpatient homeless services. The authors reported that participants with higher levels of
abstinence self-efficacy tended to have a greater willingness to quit smoking and displayed a greater interest in smoking cessation counseling programs than those with lower levels of abstinence self-efficacy.

Another study directly examined the relationship between abstinence self-efficacy and substance use among homeless women. Nyamathi et al. (2000) examined predictors of mental distress and poor physical health among 871 homeless women recruited in Los Angeles. The authors tested the sequential model of health outcomes. In this model, various situational, personal, and social resources are assumed to affect cognitive appraisal, which is expected to influence adverse health behaviors and coping response. Finally, health behaviors and coping response were expected to affect mental distress and physical health. In this study, abstinence self-efficacy was one component of cognitive appraisal, and current drug use was one component of adverse health behaviors. The results demonstrated that abstinence self-efficacy predicted current drug use as well as health outcomes (mental distress and poor physical health). Specifically, lower abstinence self-efficacy predicted higher drug use and poorer health outcomes. The findings of Nyamathi et al.’s (2000) study confirm the relationship found in non-homeless samples. Considering the similarities in the characteristics and circumstances of homeless adults and youth, the findings of the two studies above indicate that abstinence self-efficacy may also be associated with substance use behavior among homeless youth.

Unfortunately, the relationship between abstinence self-efficacy and substance use among homeless youth has not been tested. However, two recent studies in the literature have examined general self-efficacy with regard to substance use. Gallupe and Baron (2009) explored the relationship between self-efficacy and
substance use, using a sample of 300 homeless youth in Toronto, Canada. They measured self-efficacy dichotomously using a single-item question: “When you do make plans ahead, do you usually get to carry things out the way you expected or do things usually come up to make you change your plans? (0 = Have to change plans, or 1 = Carry out plans as expected).” They used a 7-point ordinal scale ranging from “never” to “daily” to measure a dependent variable, frequency of substance use during the past year. They then created two dependent variables: one for marijuana (called “soft drug” in the study), and another for other drugs (or “hard drug”).

Gallupe and Baron (2009) reported a significant relationship between self-efficacy and hard drug use. Specifically, those that had higher self-efficacy were less likely to use hard drugs during the past year. This finding is consistent with the findings among non-homeless youth, in that the direction of the relationship between self-efficacy and substance use was negative. However, the methodological limitations of the study should also be noted. It is questionable whether the single item used in the study properly assessed level of self-efficacy among homeless youth. The item assessed behavior, rather than the person’s belief about the behavior. Although actual behavior is the strongest source of self-efficacy, the theory of self-efficacy specifically suggests that when measuring self-efficacy, researchers should not confuse one’s belief with one’s actual behavior.

More recently, Maccio and Schuler (2012) used a sample of 53 homeless youth in urban New Orleans to explore the relationship between self-efficacy and substance use. They measured self-efficacy using a seven-item, 5-point Likert scale (e.g., “You can do just about anything you really set your mind to do”). Dependent variables, alcohol use and drug use during the past year, were coded dichotomously:
users versus non-users. The authors examined the differences between users and non-users on the levels of self-efficacy, and they reported no significant differences between the two groups.

Maccio and Schuler’s (2012) non-significant findings may be due to methodological limitations in the study. First, the researchers did not use a domain-specific self-efficacy measure, limiting the predictive power of self-efficacy. Second, while the reference period for substance use in the study was one year, substance use was measured dichotomously. Therefore, lack of significant findings may be due to the inability of the measure of substance use to capture homogeneity among the participants.

Although the two studies reviewed above provide initial evidence on the relationship between self-efficacy and substance use among homeless youth, methodologies adopted in the studies limit the significance of their findings. As suggested in Bandura’s (1977;1997) self-efficacy theory, the utility of self-efficacy in explaining behavior can be significantly limited when the self-efficacy measure does not properly reflect specific challenges related to the behavior of interest. In other words, considering the strong predictive validity of a domain-specific self-efficacy measure, research studies on substance use may benefit from using the abstinence self-efficacy measure. In addition, given the heightened level of substance use among homeless youth, a substance use measure that captures enough variation, such as frequency of use, may increase the ability to detect a significant association between abstinence self-efficacy and substance use.
Coping

Theory of coping. Considering the unique context of homeless youth characterized by elevated levels of stress, coping may be a particularly important factor for understanding the substance use behaviors of homeless youth (Unger et al., 1998). In their theory of coping, Lazarus and Folkman (1984) provide a framework for understanding the effects of stress on behavioral outcomes. In particular, they emphasize the mediating function of coping in the relationship between stress and various behavioral outcomes, such as depression, internalizing/externalizing problem behaviors, and substance use. Lazarus and Folkman (1984) emphasize that the effects of stress on behavioral outcomes are largely influenced by how one copes with stress. In other words, even under the same levels and/or types of stress, one’s behavioral outcomes such as substance use can differ as a function of the coping strategies that one utilizes. Accordingly, substance use researchers have paid considerable attention to coping strategies (Compas et al., 2003).

Dimensions of coping. In their definition of coping, Lazarus and Folkman (1984) assert that coping should be understood as a dynamic process, not as a person’s static trait. However, in practice, due to the difficult nature of measuring this process, the majority of existing research assesses one’s coping as a static trait (Gould, Hussong, & Keeley, 2008; Skinner, Edge, Altman, & Sherwood, 2003). The most widely accepted and studied classifications of coping are 1) problem-focused coping versus emotion-focused coping and 2) engagement coping versus disengagement coping (Compas et al., 2001).

Problem-focused coping includes efforts to directly act on the stressor, while emotion-focused coping includes efforts to relieve the negative emotions aroused by
the stressor (Lazarus & Folkman, 1984). For example, problem-focused coping includes generating possible solutions to a problem, asking others for help to solve the problem, and taking action to change the circumstances that are creating stress. On the other hand, emotion-focused coping includes expressing one’s emotions, seeking solace and emotional support from others, wishing that the problem would go away, and trying to avoid the source of stress.

Engagement coping refers to responses oriented toward stressors, whereas disengagement coping refers to responses oriented away from stressors (Compas et al., 2001; Ebata & Moos, 1994). For example, engagement coping includes problem solving and seeking social support, while disengagement coping includes withdrawal, denial, avoidance, and wishful thinking.

The classifications of problem- versus emotion-focused coping and engagement versus disengagement coping are different, in that problem- versus emotion-focused coping is classified according to the focus of effort in the process of coping, while engagement versus disengagement coping is classified by the orientation of people when they cope with stress (Compas et al., 2001). Nonetheless, there is considerable overlap in the specific strategies included in the dimensions between problem-focused coping and engagement coping, and between emotion-focused coping and disengagement coping (Skinner et al., 2003). Accordingly, in practice, problem-focused coping and engagement coping are often interchangeably used, as are emotion-focused coping and disengagement coping.

Researchers have since suggested that the two dimensions are insufficient to thoroughly reflect the wide range of specific coping strategies (Compas et al., 2001; Skinner et al., 2003). Thus, scholars have examined and proposed additional
dimensions. A particular criticism has revolved around avoidant type of coping behaviors (Compas et al., 2001; Skinner et al., 2003). Although avoidant type of coping behaviors have their own unique characteristics, these behaviors are included in the existing dimensions without a separate distinction. By pointing out this limitation, Endler and Parker (1990a, 1990b) developed a new measure in which avoidance-oriented coping is added to the existing dimensions of coping: task-oriented coping and emotion-oriented coping. Following the suggestion that two dimensions of coping classification may overly simplify various dimensions of coping efforts, the current study will use the coping measure which includes three subscales developed by Endler and Parker (1990a).

Demographic characteristics. As in self-efficacy, in coping, too, the effects of demographic characteristics should be controlled when examining the relationship between coping and behavioral outcomes (Compas et al., 2001). Researchers suggest that coping behaviors differ according to age, gender, and ethnicity, and these differences have also been found among homeless youth (Garren, 2008; Unger et al., 1998).

Age. As youth age, their cognitive abilities, major stressors, and social relationships change. Therefore, compared to younger youth, older youth tend to utilize coping strategies more effectively and efficiently; they show more cognitive types of coping and utilize multiple coping strategies against a single stressor (Band & Weisz, 1988; Compas et al., 1993; Williams & McGillicuddy-De Lisi, 1999). Homeless youth also report differences in coping according to their age. For example, Unger et al. (1998) found that older youth utilized more problem-focused coping, while younger youth utilized more emotion-focused coping. Similarly, Garren (2008)
reported that older youth used more task-oriented coping than did younger youth. Garren (2008) further reported that the relationships between coping styles and drug use/school attendance differed by the age of the participants.

**Gender.** With regard to gender differences, females are more likely to adopt coping strategies related to emotion and social relationships than are males (Frydenberg & Lewis, 1991; Renk & Creasey, 2003; Tamres, Janicki, & Helgeson, 2002). Consistent with this trend found among non-homeless youth, Garren (2008) reported that in a homeless youth sample, females used more emotion-oriented coping than did males. Further, in the same study, the gender of the participants affected the relationships between coping styles and employment (Garren, 2008).

**Ethnicity.** With regard to ethnicity, some researchers found differences in coping styles across ethnic groups (Copeland & Hess, 1995; Vaughn & Roesch, 2003). No consensus exists on the specific pattern of these differences. However, various socialization processes such as the degree of comfort with emotional expression across distinctive cultures appear to contribute to these differences. Unger et al. (1998) reported that the use of emotion-focused coping was more prevalent among Latino youth, compared to other ethnic groups.

**Coping and substance use.** Researchers have examined the specific relationship between coping dimensions and behavioral outcomes. Despite variance in the findings, accumulated data among non-homeless youth show a large overlap between specific dimensions of coping and behavioral outcomes. In particular, problem-focused or engagement coping is associated with better behavioral outcomes, while emotion-focused or disengagement coping is associated with poorer behavioral outcomes (Compas et al., 2001).
The relationships between specific coping styles and behavioral outcomes described above can be understood by considering the effect of coping on stressors (Lazarus & Folkman, 1984). Specifically, problem-focused or engagement coping tends to be more effective than emotion-focused or disengagement coping because it usually has a direct impact on stressors that include a decrease in, or removal of, stressors. Therefore, if one utilizes problem-focused or engagement coping when confronted by a stressor, the probability of his/her encountering the same stressor is likely to decrease. This may explain why the use of problem-focused or engagement coping is generally related to more favorable outcomes, compared to emotion-focused or disengagement coping (Lazarus & Folkman, 1984).

Another explanation of the general pattern of relationships between coping styles and behavioral outcomes discussed above may be found in the difference in the time interval between experiencing stress and coping with that stress (Wills et al., 2001). Specifically, emotion-focused or disengagement coping is characterized by immediate responses to stressors such as emotional eruption, which may not only limit the selection of constructive alternatives, but also initiate other problems such as interpersonal conflict. In contrast, problem-focused or engagement coping usually includes such strategies as planning, which requires a certain time interval from when they experience stress to when they actually cope with that stress. This allows people to release their negative emotions aroused by stress, as well as to select the optimal coping strategy in a given stressful context.

Research on substance use among youth has shown similar trends to those described above. For example, using a representative sample of 1,668 adolescents in the general population, Wills et al. (2001) examined the relationship between various
coping dimensions and substance use. In their longitudinal research, they examined the concurrent relationship between coping and substance use, as well as the longitudinal relationship between coping and an increase in substance use. Findings revealed that engagement coping was inversely related to the initial level of adolescent substance use, while disengagement coping was positively related to both the initial level of adolescent substance use and an increase in substance use. The findings of Wills et al.’s (2001) study imply that problem-focused coping and engagement coping may play a protective role in youth substance use, while emotion-focused coping and disengagement coping may increase the risk for substance use among youth.

**Coping and homeless youth.** The construct of coping may be critical in understanding substance use among youth with high levels of stress. Realizing this, a handful of research studies have examined the relationship between coping and behavioral outcomes, such as substance use among homeless youth. For example, Unger and colleagues (1998) first explored the relationship between coping and behavioral outcomes among homeless youth aged 13 to 23 in Los Angeles. Based on the model of coping and stress suggested by Lazarus and Folkman (1984), they examined the association of problem- and emotion-focused coping with depressive symptoms, poor physical health and symptoms of a substance use disorder in homeless youth. They found that the use of problem-focused coping strategies decreased the risk of an alcohol use disorder and poor health while the use of emotion-focused coping strategies increased the risk of symptoms of depression, poor health and alcohol and drug use disorders.
More recently, Votta and Manion (2003) reported similar findings. The authors examined the role of coping styles in the psychological adjustment of 100 homeless adolescent males recruited from an emergency shelter. Coping dimensions were categorized into either engagement or disengagement coping, and psychological adjustment was measured as depressive symptoms and both internalizing and externalizing behavior problems. The authors found that engagement coping was negatively related to externalizing behavior problems whereas disengagement coping was positively related to depressive symptoms, and internalizing and externalizing behavior problems.

The most recent studies which examined the effects of coping on various youth functioning were conducted using three types of coping; task-, emotion-, and avoidance-oriented coping (Dashora et al., 2011; Garren, 2008). These studies reported that the relationship between coping and behavioral outcomes found among non-homeless youth were also found among homeless youth. Specifically, Garren (2008) examined the role of coping as a predictor of substance use, alcohol or substance use disorder, housing, education and employment among homeless youth. In this study, task-oriented coping at baseline generally predicted better post-treatment outcomes. Also, in Dashora et al.’s (2011) study, task-oriented coping was negatively related to delinquency while emotion-oriented coping was positively associated with delinquency, and anxiety/depressive symptoms. These results are consistent with those reported among non-homeless youth.

In the same studies, however, mixed results were also found in terms of the direction between specific types of coping and behavioral outcomes. For example, Garren (2008) reported that emotion-oriented coping and avoidance-oriented coping
at baseline also predicted better post-treatment outcomes, which is inconsistent with existing knowledge that emotion-oriented coping and avoidance-oriented coping are generally related to poorer outcomes. Similarly in Dashora’s (2011) study, the use of avoidance-oriented coping was negatively related to HIV risk behavior, and anxiety/depressive symptoms. Particularly regarding substance use, greater use of task-oriented coping significantly predicted the frequency of drug use in Garren (2008), which is inconsistent with the finding from adolescents in the general population. Also, avoidance-oriented coping was negatively related to alcohol use, with all other relationships between coping and alcohol and drug use being non-significant in Dashora et al. (2011).

The contradictory results among homeless youth to those found in the general population may be explained when considering that the effectiveness of coping can vary according to contextual factors such as the nature of the stressor and available coping resources (Lazarus & Folkman, 1984). In light of this, the nature of the stressor such as controllability needs to be considered. Even in the general population, it was reported that coping style and controllability of stressors jointly affect behavioral outcomes. For example, Compas, Malcarne, and Fondacaro (1988) examined the interaction between perceived control of stressors and coping with stress on behavioral problems among 130 older children and young adolescents. The authors found that behavioral problems following greater use of problem-focused coping were severe when children/adolescents perceive less controllability of stressors. In the same vein, the limited use of problem-focused coping against the stressors which participants perceived to be controllable was also related to poorer behavioral outcomes. This implies that the direction of the relationship between
coping and behavioral outcomes among homeless youth may not be consistent with those among non-homeless youth due to their unique situation and substantial amount of stress.

Overall, recent studies (i.e., Dashora et al., 2011; Garren, 2008) have major methodological strengths compared to older studies (i.e., Unger et al., 1998; Votta & Manion, 2003). Garren (2008) and Dashora et al. (2011) used a coping measure based on three dimensions compared to the older studies that used measures based on two dimensions. In addition, they directly measured substance use behaviors of homeless youth, while the older studies measured symptoms of substance use disorder (Unger et al., 1998) or did not measure substance use behaviors at all (Votta & Manion, 2003).

However, the studies conducted by Garren (2008) and Dashora et al. (2011) also had some limitations. For example, in Garren’s (2008) study, coping was measured at baseline and was then regressed to post-intervention outcomes. However, change in coping behaviors as a result of intervention may confound the relationships between baseline coping and post-intervention substance use. In addition, Garren (2008) did not separate alcohol and drug use. While the limitations in Garren’s (2008) study were addressed in Dashora et al.’s (2011) study, the effects of demographic characteristics were not controlled. Therefore, in order to better explore the relationship between coping and substance use among homeless youth, future studies need to measure alcohol and drug use separately, while excluding possible confounding factors such as age, gender, ethnicity, and change in coping.
The Current Study

Researchers have consistently reported a significant relationship between abstinence self-efficacy, coping, and substance use among non-homeless youth. However, surprisingly little is known about the relationship of abstinence self-efficacy, coping and substance use among homeless youth. To address this research gap the following hypotheses were tested:

Hypothesis 1. A significant and negative relationship was expected between abstinence self-efficacy and alcohol and drug use among homeless youth, controlling for the age, gender, and ethnicity. Specifically, as abstinence self-efficacy increased, substance use was expected to decrease.

Hypothesis 2. Significant relationships between the three types of coping (task-oriented, emotion-oriented, and avoidance-oriented) and alcohol and drug use among homeless youth, controlling for the age, gender, and ethnicity of the participants were expected. Specifically, the use of task-oriented coping was expected to be negatively associated with substance use, while the use of emotion-oriented coping and avoidance-oriented coping was expected to be positively associated with substance use.
CHAPTER 3
Method

Participants
The current study recruited a total of 40 substance-using homeless youth recruited from a local drop-in center in a large Midwestern city. Inclusion criteria were:

1) Youth lacked a fixed, regular, and adequate nighttime residence and were between the ages of 17 to 24 years. The Institutional Review Board (IRB) approved a waiver of parental consent for homeless youth under age 18 years because these youth often do not have contact with their families, and many of them have left their home to avoid harmful situations such as abuse or rejection by parents (Unger et al., 1998).

2) Youth used substances 5 or more times during the past 30 days.

3) Youth had no substance abuse/mental health treatment during the past three months. Given that the recent experience of substance abuse/mental health treatment can affect part, or all, of the variables of interest in the current study, youth who had treatment experiences within the past 3 months were excluded in order to avoid these potentially confounding effects.

4) Youth agreed to participate in the study.
Procedures

All procedures were approved by the IRB at The Ohio State University. The principal investigator (PI) (or research assistants approved by the IRB, upon the absence of the PI) engaged and screened all potential participants from September 2011 to January 2012. The screening took place at a drop-in center for homeless youth and required 5-10 minutes. The drop-in center provides homeless youth with supports to meet their basic needs and prepare themselves to rejoin the mainstream society. Services provided by the drop-in center include foods, clothes, shower, and laundry. In addition, the staff in the drop-in center help youth better achieve housing, education, and employment by connecting them with available public resources. Non-eligible participants were advised that they may continue to use the services provided by the drop-in center. After the screening and surveying of the youth’s interest in the research project, eligible participants continued with the assessment interview at the drop-in center. The procedure began with a formal review of the elements of informed consent/assent including the nature and conditions of the study, confidentiality, and participants’ rights, and signing of the consent statement.

After the eligibility screening and signing of the consent/assent form, the youth completed a self-report assessment battery and a face-to-face interview. Questionnaires were administered to the youth in a secure location at the drop-in center. After the youth completed all self-report questionnaires, a structured interview was conducted by the PI to assess substance use. The assessment took approximately an hour to complete. A gift card to a local department store ($20) was provided as compensation for the participants’ time in completing the interview.
Measures

Demographic questionnaire. Basic demographic information such as age, gender and ethnicity were assessed. Also, information on homeless experiences such as the reason for homelessness, the duration of homelessness, and the history of homelessness was also gathered.

Abstinence self-efficacy. The Drug-Taking Confidence Questionnaire (DTCQ; Annis & Martin, 1985) was used to assess the level of abstinence self-efficacy. This self-report questionnaire consists of 50 items with eight subscales which represent high risk situations for substance use: Unpleasant Emotions (UE), Physical Discomfort (PD), Pleasant Emotions (PE), Testing Personal Control (TPC), Urges/Temptations to Use (UTU), Conflict with Others (CO), Social Pressure to Use (SPU), and Pleasant Times with Others (PTO). Participants were asked to indicate how confident they are that they could resist using alcohol or drugs in the described situations on a 6-point Likert scale, ranging from ‘not at all confident (1)’ to ‘very confident (6).’ Subscale scores are calculated by summing all items within the subscale (i.e., original scores). The possible ranges of the subscales are between 10 and 60 for UE and CO, and between 5 and 30 for the remaining subscales, where higher scores indicate that the respondent is more confident in resisting the urge to use substances in a given situation. The scores of each subscale were adjusted (i.e., adjusted scores), due to the subscales having a different number of items (Schmitz, Oswald, Damin & Mattis, 1995). The DTCQ assesses abstinence self-efficacy for alcohol use (or alcohol abstinence self-efficacy) and abstinence self-efficacy for drug use (or drug abstinence self-efficacy) separately.
Sklar et al. (1997) extensively examined the various psychometric properties of the DTCQ among an adult sample seeking addiction treatment. First, factor analysis revealed that the eight factor model and the three factor second order model (see above) provided the best fit. Second, all eight subscales showed good reliabilities ranging from .79 to .95. Third, this measure showed suitable discriminant validity with the measure for outcome expectancy which assesses the consequences anticipated by individuals once they have their drinking under control, and convergent validity in relation to various existing measures related to substance use such as motivation to change substance use behavior, depression, and other coping self-efficacy measures for alcohol use (Sklar et al., 1997). Reliabilities for the subscales in the current study ranged from .75 to .94 for alcohol abstinence self-efficacy, and from .60 to .92 for drug abstinence self-efficacy. The subscale for physical discomfort had the lowest reliability for both alcohol and drug abstinence self-efficacy. All other subscales reported reliabilities higher than .80.

Coping. Adolescent coping was measured using the Coping Inventory for Stressful Situations-Adolescent (CISS-A; Endler & Parker, 1990a). This self-report measure consists of 48 items with three subscales; task-oriented coping, emotion-oriented coping, and avoidance-oriented coping. Participants were asked to indicate how much they used the suggested type of strategies when they encountered a difficult, stressful, or upsetting situation, on a 5-point Likert scale ranging from ‘not at all (1)’ to ‘very much (5).’ The possible range of each subscale is between 16 and 80 where higher scores indicate greater use of that type of coping in stressful situations. Previous research reported reliability for the three subscales as .90, .87, and .85 for males, respectively, and .90, .88 and .83 for females, respectively (Parker & Endler,
The scale has been shown to be a valid multidimensional coping measure, and to have adequate construct validity with adolescent and clinical populations (Endler & Parker, 1990a). This measure was chosen because 1) it was developed specifically for adolescent samples, and 2) the simplicity of the traditional two-category models (problem vs. emotion-focused coping; engagement vs. disengagement coping) was overcome by adding avoidant-oriented coping (Compas et al., 2001). In the current study, the subscales showed high reliability with Cronbach alphas .91, .86 and .83, respectively for task-, emotion-, and avoidance-oriented coping.

**Substance use.** The Teen Addiction Severity Index (T-ASI; Kaminer, Bukstein, & Tarter, 1991) was used to measure the level of substance use; the frequency of alcohol and drug use during the past 30 days. The instrument was designed for administration to adolescents ages 12 or older with IQs in the normal range. This structured interview includes various indices of substance use as well as family relationships and psychiatric status. A preliminary study indicated satisfactory inter-rater reliability of the rating scale (Kaminer et al., 1991). Specifically, inter-rater reliability between independent raters was .78 on average across all subscales, and .85 for substance use. In the current study, only the subscales directly related to substance use was used. Information on the types of substance used, the route of administration, number of substance using days during the past month and the age of first use of substances were collected.

**Statistical Analyses**

**Preliminary analysis.** Descriptive statistics were computed to insure that relevant assumptions were met and to examine the distributions of variables. Prior to
the main analyses, the relationships between abstinence self-efficacy (for alcohol use and for drug use), coping (task-, emotion-, and avoidance-oriented coping), and substance use (frequency of alcohol use and drug use during the past 30 days) were explored using Pearson's correlation analyses.

**Hierarchical regression analyses.** To test whether abstinence self-efficacy and coping explained substance use after controlling for the effects of age, gender and ethnicity, a series of hierarchical regression analyses were performed. All hierarchical regression analyses were conducted using two models, one with alcohol use and the other with drug use as the dependent variable. In the first step of the analysis, participants’ age, ethnicity, and gender were entered in order to control for the effects of demographic characteristics on substance use. In the next step, study variables (abstinence self-efficacy and coping) were entered in order to examine if the study variables significantly explained substance use beyond the effects of demographic characteristics on substance use.
CHAPTER 4

Results

Participant Characteristics

Characteristics of the sample, including demographic information, are outlined in Table 1. The average age of the sample was 20.8 years with a standard deviation of 2.2. Of the 40 participants, 77.5% (n = 31) were male. Seventeen participants (42.5%) identified themselves as African American, and 12 participants (30.0%) identified as Caucasian. The majority of the sample (n = 28, 70.0%) had no job at the time of recruitment and only 40% of the sample (n = 16) had a degree corresponding to a high-school diploma.

Table 2 represents the homeless experiences of the sample. On average, the average age that participants had no place to live for the first time was 16.1 years (SD = 4.1). The average number of times without shelter was 26.4 with a standard deviation of 42.2.

On average, the longest number of days without shelter was 115.0 (SD = 306.5), and the number of days currently without shelter was 92.5 (SD = 328.6). With regards to their residential status during the past 12 months, on average, the participants slept 249.3 days (68.9%) outside of their own or family member’s home such as friends’ home, abandoned buildings or streets. Regarding difficulties that homeless populations are likely to experience, many of the participants reported that they had experienced the lack of food (n = 19, 47.5%), clothes (n = 24, 60.0%),
medical care (n = 16, 40.0%), and support for solving their problems (n = 20, 50%) in the last 12 months. Descriptive statistics for the main variables are shown in Table 3. As shown in the table, all study variables entered in the following analyses met the assumption of normal distribution.

**Abstinence Self-Efficacy**

Regarding alcohol abstinence self-efficacy, the adjusted scores ranged from 3.5 to 5.0, with standard deviations ranging from 1.2 to 1.7. Overall, the sample reported the highest confidence in resisting alcohol use in situations where they suffer from physical discomfort or experience pleasant emotions, whereas they reported the lowest confidence in situations when they spend a pleasant time with others or experience social pressure to use alcohol.

Regarding drug abstinence self-efficacy, the adjusted scores ranged from 2.3 to 3.4, with standard deviations ranging from 1.3 to 1.7. Compared to the scores of alcohol abstinence self-efficacy, the sample reported lower scores for drug abstinence self-efficacy. That is, participants reported less confidence in resisting drug use compared to alcohol use. Overall, the sample reported the highest confidence in resisting drugs in situations where they suffer from physical discomfort or experience pleasant emotions, whereas they reported the lowest confidence in situations when they spend a pleasant time with others or experience unpleasant emotions.

**Correlations Among Variables**

Preliminary analyses were conducted in order to examine the relationships between abstinence self-efficacy, coping, and substance use. Therefore, bivariate
correlations of all study variables were calculated. Table 4 displays the zero-order correlations among variables. Given that the analyses were conducted separately for alcohol use and drug use, the relationships with alcohol use are presented in the upper diagonal, and the relationships with drug use are presented in the lower diagonal.

The frequency of alcohol use was negatively related to all of the alcohol abstinence self-efficacy subscales with the exception of pleasant emotion. This indicates that higher alcohol abstinence self-efficacy was related to less alcohol use during the past 30 days in most of the situations that are postulated to urge the use of alcohol. The magnitude of the significance of the relationships ranged from .38 to .44 indicating a moderate relationship. However, the frequency of alcohol use was not related to any of the coping styles measured by the CISS.

The frequency of drug use was negatively related to the following drug abstinence self-efficacy subscales: unpleasant emotion, testing personal control, social pressure to use, and pleasant time with others. This indicates that the higher the levels of drug abstinence self-efficacy in the above mentioned situations, the fewer the days reported to use drugs in the prior 30 days. The magnitude of the significance of the relationships ranged from .32 to .41 indicating a moderate relationship. Again, the frequency of drug use was not related to any of the coping styles.

Hierarchical Regression Analyses

The main interest in the study was to identify whether abstinence self-efficacy and coping styles explain substance use behaviors among homeless youth after the effects of demographic characteristics on substance use were controlled. To this end, a series of hierarchical regression analyses were conducted. In the analyses, age, gender
and ethnicity were entered in the first step, and the study variables were entered in the second step. Given that African Americans were the majority of the sample (42.5%), ethnicity was classified into either African American or other. In the second step, each variable was first entered separately, and all variables significantly explaining substance use were entered together at the end. The summaries for the analyses including the significant variables are presented in Table 5 for alcohol use and in Table 6 for drug use. Achieved power in the analyses that included significant variables ranged from .76 to .92, reasonably meeting the conventional criteria of .80 (Murphy, 2009). Effect sizes in the analyses were from medium to large, ranging from .17 to .75 (Cohen, 1988).

**Alcohol use.** In the model explaining alcohol use (see Table 5), the demographic variables were not significant, accounting for only 4% of the total variance in alcohol use. When abstinence self-efficacy was entered in the second step, the models became significant when the following subscales were included: Unpleasant emotion, the urge/temptations to use, social pressure to use, and conflict with others \( (p < .05, \text{ all models}) \). Also, the model that included abstinence self-efficacy when having a pleasant time with others in the second step of the analysis approached statistical significance \( (p = .09) \). The addition of abstinence self-efficacy explained 14-24% more of the total variance in alcohol use. In all models, abstinence self-efficacy was negatively related to alcohol use. This indicates that higher abstinence self-efficacy for alcohol use was related to lower use of alcohol after controlling for the effects of age, gender and ethnicity.

As shown in Table 5, when the 4 significant subscales of abstinence self-efficacy (unpleasant emotion, the urge/temptations to use, social pressure to use, and
conflict with others) were entered together in the second step of the analysis, compared to the model including only the demographic characteristics, the final model significantly explained 37% more of the total variance in alcohol use. Among the 4 subscales, only unpleasant emotion remained significant in the final model ($\beta = -1.03, p < .05$) and social pressure to use approached statistical significance ($\beta = -.52, p = .07$). All relationships were negative indicating that higher abstinence self-efficacy for alcohol was associated with lower alcohol use. Among the demographic characteristics, ethnicity became significant ($\beta = -.53, p < .05$).

In addition, while demographic characteristics were not significant in the first step of the analysis, ethnicity became significant in the model which included social pressure to use in the second step of the analysis ($\beta = -.41, p < 0.05$). This indicates the possibility of an interaction between ethnicity and abstinence self-efficacy in social pressure to use. Therefore, although not included in the original analysis plan, the interaction between ethnicity and abstinence self-efficacy in social pressure to use was examined. To this end, a model that included demographic characteristics in the first step, abstinence self-efficacy in social pressure to use in the second step, and the interaction term in the third step was tested. The result revealed that, after controlling for the effects of demographic characteristics and abstinence self-efficacy in social pressure to use on alcohol use, the interaction between ethnicity and abstinence self-efficacy in social pressure to use explained 10% more of the total variance in alcohol use ($p = .05$). In order to further explicate the nature of the interaction, the interaction was plotted in Figure 1. An increase in abstinence self-efficacy in social pressure to use was related to less alcohol use among all youth, but the magnitude of the effect was stronger among African American youth compared to non-African American
youth. That is, among African American youth, a sharper decline in alcohol use was found as the level of abstinence self-efficacy in social pressure to use increased.

**Drug use.** In the model explaining drug use (see Table 6), the demographic variables were not significant. Adjusted R-square for the model was -.01, indicating that the model contains independent variables that do not help to explain the dependent variable. When abstinence self-efficacy was separately entered in the second step, the model that included abstinence self-efficacy in unpleasant emotion became significant ($p < .05$) and the model that included abstinence self-efficacy in social pressure to use approached statistical significance ($p = .09$). The addition of abstinence self-efficacy when feeling unpleasant emotions and social pressure to use significantly explained 17% and 14% more of the total variance in drug use, respectively. In the two models, abstinence self-efficacy was negatively related to drug use ($\beta = -.42, p < .01; \beta = -.38, p < .05$, respectively for unpleasant emotion and social pressure to use). This indicates that higher abstinence self-efficacy for drug use explained lower drug use after all effects of age, gender and ethnicity on drug use were controlled.
CHAPTER 5

Discussion

This study examined the relationship between abstinence self-efficacy and coping on the frequency of alcohol and drug use among homeless youth, while controlling for potential confounding factors: age, gender, and ethnicity. Findings indicated that high abstinence self-efficacy was associated with low frequency of both alcohol and drug use. In addition, an interaction effect of abstinence self-efficacy and ethnicity on the frequency of alcohol use was found. Although the utility of abstinence self-efficacy in understanding substance use behaviors has been well-supported among youth in the general population, this relationship has not been examined among homeless youth whose life situations are characterized by significantly more stress and chaos.

Hypothesis 1. As abstinence self-efficacy increased, substance use was expected to decrease controlling for the age, gender, and ethnicity.

The first hypothesis was supported. Overall, higher abstinence self-efficacy was significantly associated with a lower frequency of both alcohol and drug use, while controlling for the effects of the age, gender, and ethnicity. Specifically, with regard to alcohol use, the levels of alcohol abstinence self-efficacy on the subscales of 1) unpleasant emotion, 2) urges and temptation to use, 3) conflict with others, and 4) social pressure to use were negatively associated with the frequency of alcohol use.
during the past 30 days. Participants who found it easier to resist alcohol when they experienced unpleasant emotions, the temptation to use, conflict with others, and social pressure to use, reported fewer days of alcohol use during the last month, compared to those who found alcohol difficult to resist.

A negative relationship between alcohol abstinence self-efficacy on the subscale of \textit{pleasant time with others} and frequency of alcohol use also approached statistical significance. That is, the participants who found it easier to resist alcohol when they had a pleasant time with others tended to use less alcohol during the past 30 days, compared to those who found alcohol difficult to resist.

With regard to drug use, the level of drug abstinence self-efficacy on the subscale of \textit{unpleasant emotion} was negatively associated with the frequency of drug use during the last month. In other words, the participants who reported that they found it easier to resist using drugs when they experienced unpleasant emotions reported fewer days of drug use during the past 30 days, compared to those who found drugs difficult to resist. Again, a negative relationship between drug abstinence self-efficacy on the subscale of \textit{social pressure to use} and the frequency of drug use also approached statistical significance. Participants who found drugs easier to resist when there was social pressure to use tended to use less drugs during the past 30 days compared to those who found it difficult to resist drugs in that situation.

The overall findings of the current study, showing a negative relationship between abstinence self-efficacy and substance use, are consistent with the findings of previous studies conducted among non-homeless youth (Barkin et al., 2002; Burleson & Kaminer, 2005; Carvajal et al., 2004). They also are consistent with the findings of research among homeless adults who share similar risk factors as those of homeless
youth (Arnsten et al., 2004; Broadhead-Fearn & White, 2006). The relationship between high abstinence self-efficacy and low substance use may be interpreted according to the mediational processes suggested in Bandura’s (1977, 1997) self-efficacy theory. Recall that self-efficacy affects human behavior through four mediational processes: cognitive, motivational, emotional, and selective. Although the current study did not test these mediational processes, many studies on substance use have reported findings that support their validity. For example, Barkin et al. (2002) reported that, among youth in the general population, one’s abstinence self-efficacy was significantly associated with one’s intention to use drugs or alcohol in the following year (in line with the cognitive process). Indeed, those who reported a higher level of intention in Barkin et al.’s (2002) study showed increased substance use in the following year. Also, in Arnsten et al.’s (2004) study, one’s abstinence self-efficacy was significantly related to one’s intention to participate in treatment programs for substance use among homeless adults (in line with the motivational/selective process). Therefore, homeless youth with a high level of self-efficacy in the current study also may have had more cognitive and/or motivational strengths than those with a low level of self-efficacy, hence the low level of substance use. Again, given that the mediational processes were not tested in the current study, this hypothesis requires future study.

An interaction between abstinence self-efficacy and ethnicity. The significant interaction between abstinence self-efficacy and ethnicity found in the current study was also noteworthy. Given that research on abstinence self-efficacy has not been conducted among homeless youth, this interaction effect was not a hypothesized aim in this study. However, on the subscale of social pressure to use,
the effect of alcohol abstinence self-efficacy on the frequency of alcohol use during the past month was stronger among African American youth, compared to that among non-African American youth. In other words, although all of the participants in the current study reported a decrease in alcohol use as their level of alcohol abstinence self-efficacy increased, the decrease was sharper among African American youth, compared to that among non-African American youth.

The above finding is similar to that of Warren et al. (2007) who used a high-risk sample and reported a significant interaction between abstinence self-efficacy and ethnicity. Specifically, the researchers evaluated the effect of treatment on substance use among a high-risk sample of adults with co-occurring substance use and personality disorders. The majority had homeless experiences prior to treatment. The authors found that African Americans reported higher levels of post-treatment cocaine use compared to non-African Americans. However, the impact of being African American on cocaine use was moderated by higher abstinence self-efficacy. Warren et al.’s (2007) finding indicates that abstinence self-efficacy may play a particularly significant role in substance use among African Americans, compared to other ethnic groups.

A strong kinship bond prevailing among African Americans (Nobles, 2004) may explain this observed relationship between alcohol abstinence self-efficacy, social pressure to use, and alcohol use. According to Nobles (2004), for African Americans, a life philosophy is, “We are, therefore I am” (p. 88). Further, the bond of kinship among African Americans goes beyond typical blood ties (Billingsley, 1992; Boyd-Franklin, 2003; Staples, 1994). Homeless youth tend to build close relationships with their street peers, given that their peers are essential for surviving on the streets.
(Ennett et al., 1999; Kipke et al., 1997). However, considering the broad nature of the kinship bond among African Americans, the relationship with street peers may be stronger among African American homeless youth, compared to that among non-African American homeless youth. Therefore, substance use in the context of peer pressure may be a particular challenge for African Americans; hence, the dramatic decrease in substance use when they feel more confident in resisting substance use under peer pressure.

Hypothesis 2. The use of task-oriented coping was expected to be negatively associated with substance use, while the use of emotion-oriented and avoidance-oriented coping was expected to be positively associated with substance use, controlling for age, gender, and ethnicity.

The second hypothesis was not supported by the data. Specifically, coping style was not related to frequency of alcohol or drug use during the past 30 days. This finding is not consistent with the findings of existing research among youth in the general population in which significant relationships between coping and substance use were observed (e.g., Wills et al., 2001). It is also not consistent with the findings of prior research among homeless youth, in which coping and substance use were significantly related (e.g., Dashora et al., 2011, Garren, 2008; Unger et al., 1998).

A possible explanation for the non-significant relationship between coping and substance use in this study may be related to how substance use is defined among homeless youth. In examining the function of coping on substance use, the underlying assumption is that coping should mediate the relationship between stress and substance use (Lazarus & Folkman, 1984). In other words, substance use is identified
as a consequence of stress, and its specific level is determined by coping. However, the non-significant relationship between coping and substance use found in this study challenges the validity of making such an assumption about substance use being a consequence of stress.

Alternatively, substance use is also defined as a mal-adaptive type of coping, rather than a behavioral outcome of stress mediated by coping. Indeed, homeless youth often report that they use substances as a coping method against stress (Kidd & Carroll, 2003; Bousman et al., 2005). Specifically, Klee and Reid (1998b) found that 71% of their sample of homeless youth self-medicated to alleviate various physical and psychological problems. Therefore, the non-significant relationship between coping and substance use may not be so surprising, if substance use were also one type of coping among homeless youth.

**Limitations**

The limitations of the present study should be noted. First, the current study found a significant relationship between abstinence self-efficacy and substance use. However, given the cross-sectional nature of the current study, causal conclusions cannot be made.

Second, the study is limited by a small sample size, decreasing statistical power, and limiting the ability to detect statistical differences (Cohen, 1977; Murphy, 2009). In this study, none of the relationships between coping and substance use was significant. In the coping literature, many studies conducted among high-risk samples reported non-significant findings, and this was usually attributed to their small sample size ($n < 100$) (Compas et al., 2001). Therefore, power analyses were conducted for
the current study which showed that power to detect a relationship between coping and substance use ranged from 0.04 to 0.18. Power of 0.80 is generally the conventionally accepted level of power (Murphy, 2009) to detect study relationships, indicating that the current study was underpowered.

Third, the measurement of coping used in this study may also contribute to the non-significant findings. This measure was considered superior to other measures in that it includes three dimensions, rather than two (Endler & Parker, 1990b). However, stressful situations are prevalent in the lives of homeless youth (Robertson & Toro, 1998). Therefore, this coping measure which was designed to assess coping strategies used by youth in the general population may not be capture the complex coping behaviors used by homeless youth. Further, as Lazarus and Folkman (1984) suggested, the utility of coping research can be maximized when coping is conceptualized as a process rather than as a trait which was done in the current study.

Fourth, self-report data were used. While this is a common method for data collection, systematic bias of a single reporter is always a concern (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This bias is usually derived from the psychological characteristics of the participants, such as the motivation to maintain consistency, and the tendency to respond in a more socially acceptable manner, referred to as “social desirability” (Stoeber, 2001). Some researchers suggest that substance use is likely affected by social desirability, leading to lower reported substance use than actual use (Bloom, 1998). However, participants in this study, reported high frequencies of alcohol and drug use, alleviating concerns associated with under-reporting.
Lastly, the current study relied on a sample of convenience. All participants were recruited from the only drop-in center for homeless youth in a Midwestern city. Therefore, the findings cannot be generalized to homeless youth in other parts of the country whose characteristics are different in terms of age, gender, and ethnicity. The findings also cannot be generalized to homeless youth who do not use a drop-in center. Youth who use such services may be different from those who are not yet engaged in services.

Strengths

Despite the limitations mentioned above, the findings of the present study contribute to research on substance use behaviors among homeless youth. In particular, this is the first study to examine the relationship between abstinence self-efficacy and substance use among homeless youth. Abstinence self-efficacy is considered one of the most promising factors explaining substance use behaviors (Witkiewitz & Marlatt, 2004). Indeed, a number of studies have confirmed the validity of self-efficacy theory in understanding substance use behaviors among youth in the general population (Schwarzer & Luszczynska, 2006). Altena, Brilleslijper-Kater and Wolf (2010) suggest that abstinence self-efficacy may be a particularly important factor to help intervene with substance use among homeless youth, with this study’s findings supporting the need for further research in this area.

Implications

The current study found that high abstinence self-efficacy was significantly associated with low substance use among homeless youth. Accordingly, the findings
of the present study imply that an increase in abstinence self-efficacy may be associated with a decrease in substance use among homeless youth. Therefore, programs that aim to decrease substance use among homeless youth may be aided by concentrating on finding methods to help increase the youth’s abstinence self-efficacy.

In addition, the amount of variance in the level of substance use explained by abstinence self-efficacy indicates that abstinence self-efficacy may be particularly useful for understanding substance use behaviors among homeless youth. Specifically, abstinence self-efficacy, as a single variable, explained an additional 14-24% of the variance in substance use, after controlling for the effects of demographic characteristics. This R-square value is high when compared to Bousman et al.’s (2005) study, where six parent- and peer-related variables conjointly explained an additional 17% of variance in substance use, after controlling for the effects of the demographic characteristics of homeless youth. Although research is needed to simultaneously include abstinence self-efficacy and other factors to confirm the relative influence among them, the indirect comparison across the two studies above implies that abstinence self-efficacy may have great potential in helping to understand substance use behaviors among homeless youth.

Lastly, the current study found an interaction between abstinence self-efficacy and ethnicity. Specifically, on the subscale of peer pressure to use, the effect of abstinence self-efficacy on substance use was particularly strong among African Americans compared to non-African Americans. The finding implies that prevention/intervention approaches for African American homeless youth may be successful when practitioners aim to increase the youth’s abstinence self-efficacy against peer pressure. For example, programs for African American youth may make
efforts to foster “constructive togetherness.” As homeless youth have more successful positive and substance-free experiences with their peers, they may build higher levels of self-efficacy to resist peer pressure for using substances.

**Conclusion and Future Directions**

The present study provides a step towards understanding the relationship between abstinence self-efficacy and substance use among homeless youth. However, longitudinal designs are needed to assess the causal relationship between abstinence self-efficacy and substance use among homeless youth so that information on the temporal ordering of events can be established.

In addition, future studies on abstinence self-efficacy among homeless youth may benefit from including potential mediators and moderators in their analyses. Mediation analyses can provide valuable information regarding how abstinence self-efficacy is formed and how it influences substance use behaviors among homeless youth. In fact, as mentioned earlier, Bandura’s (1977; 1997) self-efficacy theory provides a basic framework for testing mediation (cognitive, motivational, affective, and selective processes). Mediational analyses can be useful for providing information regarding the source and mechanism of abstinence self-efficacy and in turn maximize the positive effects of the youth’s abstinence self-efficacy on reducing substance use.

Moderation analyses are useful for identifying specific sub-groups of youth which may benefit (or not) from the positive effects of abstinence self-efficacy. The current study provided initial evidence for the interaction between abstinence self-efficacy and ethnicity, implying that African Americans may benefit from abstinence
self-efficacy. Future studies can include other potential moderators which likely affect the relationship between abstinence self-efficacy and substance use among homeless youth. Given that researchers suggest that difficulties among those experiencing homelessness, such as access to health care or education, disrupt the relationship between their self-efficacy and behavior (Epel, Bandura, & Zimbardo, 1999), these factors (access to services/education) might moderate this relationship. Findings from moderation analyses may help practitioners tailor intervention programs to maximize the positive effects of abstinence self-efficacy.

With regard to coping, future studies may benefit from using a method that captures the wide variability in coping behaviors among homeless youth. For example, interview methods, compared to self-report questionnaires, allow researchers to gather information on specific individual differences in coping behaviors. In addition, by using interviews, researchers can obtain other information such as the nature of stress and the available coping resources, which is considered important for understanding coping behaviors (Gould et al., 2008).

In conclusion, this study provides empirical support for the positive relationship between abstinence self-efficacy and substance use among homeless youth. Although abstinence self-efficacy has been useful for understanding substance use behaviors among non-homeless populations, this is the first study to examine the relationship among homeless youth. The findings support further research evaluating the potential for targeting abstinence self-efficacy in intervention efforts that seek to reduce substance use among these vulnerable youth.
References


Appendix A: Questionnaires
Demographic Interview (Homeless)

DEMOGRAPHICS:

1. Gender: M/F

2a. Date of Birth (mm/dd/yyyy): ___________ 2b. Age ___________

3. Ethnic Group (Check one for subject, subject's birth mother, and subject's birth father):

<table>
<thead>
<tr>
<th>Adolescent</th>
<th>Adolescent's Birth Mother</th>
<th>Adolescent's Birth Father</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(1)</td>
<td>(1)</td>
</tr>
<tr>
<td>(2)</td>
<td>(2)</td>
<td>(2)</td>
</tr>
<tr>
<td>(3)</td>
<td>(3)</td>
<td>(3)</td>
</tr>
<tr>
<td>(4)</td>
<td>(4)</td>
<td>(4)</td>
</tr>
<tr>
<td>(5)</td>
<td>(5)</td>
<td>(5)</td>
</tr>
<tr>
<td>(6)</td>
<td>(6)</td>
<td>(6)</td>
</tr>
<tr>
<td>(7)</td>
<td>(7)</td>
<td>(7)</td>
</tr>
<tr>
<td>(8)</td>
<td>(8)</td>
<td>(8)</td>
</tr>
<tr>
<td>(9)</td>
<td>(9)</td>
<td>(9)</td>
</tr>
<tr>
<td>(0)</td>
<td>(0)</td>
<td>(0)</td>
</tr>
</tbody>
</table>

   If other ethnic group please specify:
   Adolescent: ___________________________
   Mother: ___________________________
   Father: ___________________________

4. Last Grade Completed: ___________
   Current GPA: ___________
   Special Ed. LD, BD__
   Currently enrolled? Yes/No

5. In the last year, what was your primary living arrangement? (Check one):
   (1) Alone in own house or apartment
   (2) With spouse, domestic partner, or children in own house or apartment
   (3) In a house or apartment with a friend or friends
   (4) With parent(s) or guardian(s) in their house or apartment
   (5) Homeless or living in temporary shelter
   (6) With other relatives (specify) ___________
   (7) With foster parents
   (8) In jail
   (9) In residential treatment
   (10) Other (specify) ___________

6. For how many years were you raised by:
   # Years
   1. _________ Both of your birth parents
   2. _________ Birth mother only
   3. _________ Birth mother plus partner (not birth father)
   4. _________ Birth father only
   5. _________ Birth father plus partner (not birth mother)
   6. _________ Other relatives (grandparents, aunt or uncle, etc.)
   7. _________ Adoptive parents
   8. _________ Foster parents
   9. _________ Institutions (group home, hospital, detention, shelter)
   10. _________ Other (Specify)
7. Current Marital Status (Check one):

Primary Caretaker

____(1) single, never been married
____(2) Currently legally married
____(3) Cohabitating with partner
____(4) Separated but still married
____(5) Divorced
____(6) Widowed

Adolescent’s Birth Parents

____(1) Never married
____(2) Currently married
____(3) Cohabitating
____(4) Separated but still married
____(5) Divorced
____(6) Widowed

8. Employment Status (Check one for client and one for primary caretaker):

Adolescent

(1) Work 40+ hours a week
(2) Fewer than 40 hours a week
(3) Homemaker
(4) Retired
(5) Unemployed
(6) Student

Primary Caretaker

Other Family Member

9. What is the primary occupation (whether or not he/she is currently employed)?

Adolescent

Primary Caretaker

Other Family Member

9. What is your total annual family income?

____ $0-$5,000  ______ $5,001-$10,000  ______ $10,001-$15,000  ______ $15,001-$20,000

____ $20,001-$25,000  ______ $25,001-$30,000  ______ $30,001-$35,000  ______ $35,001-$40,000

____ $40,001-$45,000  ______ $45,001-$50,000  ______ $50,001-$55,000  ______ $55,001-$60,000

____ $60,001 or above

10. What degrees do family members have?

Adolescent

Primary Caretaker

Other Family Member

0) No degree
1) Graduate Equivalency Degree (GED)
2) High School Diploma
3) Trade School Certificate
4) Associate Degree
5) Bachelor Degree
6) Masters Degree
7) Doctoral Degree
8) Unknown

11. Have you ever been:

a. Placed in a foster home? Yes/No Age 1st time How many lifetime placements?

b. Placed in a group home? Yes/No Age 1st time How many lifetime placements?

c. Kept in juvenile detention? Yes/No Age 1st time How many lifetime placements?

d. Kept in jail or D-home overnight? Yes/No Age 1st time How many lifetime placements?

e. A ward of the state? Yes/No Age 1st time How many lifetime placements?

11a. In the last 12 months have you been:

a. Placed in a foster home? Yes/No

b. Placed in a group home? Yes/No

c. Kept in juvenile detention? Yes/No

d. Kept in jail overnight? Yes/No

e. A ward of the state? Yes/No

11b. How about in the last 3 months? (Check one):

a. Placed in a foster home? Yes/No

b. Placed in a group home? Yes/No

c. Kept in juvenile detention? Yes/No

d. Kept in jail overnight? Yes/No

e. A ward of the state? Yes/No
12. How old were you the first time that you did not have a place to live? ______ years old. How many days did you go without shelter at that time? ______ days
13. What is the longest number of days you have been without shelter? ______
14. How many days have you currently been without shelter? ______
15. Altogether, how many different times have you not had a place to live? That is, times when you didn’t have a room, apartment or home where you could sleep. _____________ times
16. How many times had you runaway from home, including from foster care or other supervised setting? ______ times
17. What was the reason that you first left your family of origin (mom or dad’s)?
   ( ) Physical abuse ( ) Verbal abuse ( ) Sexual abuse ( ) Arguments with parents
   ( ) Thrown out of the house ( ) Substance Abuse (mine) ( ) Substance Abuse (parents)
   ( ) Legal Problems (mine) ( ) Legal Problems (parents) ( ) School Problems
   ( ) Other – please explain: __________________________________________
18. What is the reason that you don’t go back home? ( ) Fear for my own safety  ( ) Not welcome
Other: __________________________________________
19. If you do not have a place to stay right now, what is the main reason?
_________________________________________________________
20. Please list all the times that you did not have a place to stay (couch surfing, on the streets, in a shelter):

<table>
<thead>
<tr>
<th>Your age</th>
<th>Date</th>
<th>How many days were you homeless?</th>
<th>Reason?</th>
<th>Where stayed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6th time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
21. Over the last 12 months (365 days), how many nights did you spend:

   Nights

   a. In your own room or apartment? ______
   b. With family members in their home? ______
   c. With friends in their home? ______
   d. In a shelter of mission? ______
   e. In an abandoned building or as a squat? ______
   f. In jail? ______
   g. Someplace else indoors, such as in a bus or train station, or at an airport? ______
   h. Someplace outdoors, such as on the street, or in a park or alley? ______
   i. Foster family? ______
   j. In a residential treatment program? ______
   k. Anyplace I haven’t mentioned? ______

22. During the past 3 months (90 days), how many nights did you spend:

   Nights

   a. In your own room or apartment? ______
   b. With family members in their home? ______
   c. With friends in their home? ______
   d. In a shelter of mission? ______
   e. In an abandoned building or as a squat? ______
   f. In jail? ______
   g. Someplace else indoors, such as in a bus or train station, or at an airport? ______
   h. Someplace outdoors, such as on the street, or in a park or alley? ______
   i. Foster family? ______
   j. In a residential treatment program? ______
   k. Anyplace I haven’t mentioned? ______

23. In the past 12 months was:

   a. Getting enough to eat a problem for you? Yes/No
   b. Getting clothes a problem for you? Yes/No
   c. Getting medical care a problem for you? Yes/No
   d. Finding a place where you could clean up a problem for you? Yes/No

24. What about the past 3 months?

   a. Getting enough to eat a problem for you? Yes/No
   b. Getting clothes a problem for you? Yes/No
   c. Getting medical care a problem for you? Yes/No
   d. Finding a place where you could clean up a problem for you? Yes/No
TEEN ADDICTION SEVERITY INDEX (T-ASI)

1. What chemicals have you used in the past month?

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Route</th>
<th>No. of Days</th>
<th>Age Started (yrs/mos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Are there chemicals you have used before that you have not used in the past month?

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Route</th>
<th>No. of Days</th>
<th>Age Started (yrs/mos.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Name combinations of drugs or alcohol that you have used in the past month

<table>
<thead>
<tr>
<th>Drugs</th>
<th>No. of Days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Which chemical(s) or combination of chemicals do you believe is/are your major problem(s)? Prioritize.

<table>
<thead>
<tr>
<th>Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

5. Why do you believe the drug(s) is/are a major problem? Reason. (Comments)

Problem Area: peer/soc legal
emp/sup psych
family loss of control and/or craving
school

6. Duration of your last period of voluntary abstinence from all abused chemicals? ______
7. How many months ago did this abstinence end? ____________

8. How many times have you:
   Had an alcohol blackout? __________
   Overdosed on drugs? __________

9. How many times in your life have you been treated for:
   Alcohol abuse or dependence _______
   Drug abuse or dependence _______

10. How many of these were detox only?
    Alcohol _______
    Drug _______

11. How much money would you say you spent during the past month on:
    Alcohol _______
    Drug _______

12. Did you obtain the drugs through:
    Sexual favors _______
    Illegal activities _______

13. How many days in the past month have you experienced:
    Alcohol problems _______
    Drug problems _______

★ USE THE RATING SCALE FOR 14 & 15

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all</td>
<td>a little</td>
<td>fair amount</td>
<td>very much</td>
<td>extremely/always</td>
</tr>
</tbody>
</table>

14. How troubled or bothered have you been in the past month by:
    Alcohol problems _______
    Drug problems _______

15. How important to you now is treatment for:
    Alcohol problems _______
    Drug problems _______

|
Appendix B: Tables
<table>
<thead>
<tr>
<th>Variable</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong> ((Mean = 20.8, \ SD = 2.2, \ Skewness = .1, \ Kurtosis = -1.3))</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>1 (2.5)</td>
</tr>
<tr>
<td>18</td>
<td>7 (17.5)</td>
</tr>
<tr>
<td>19</td>
<td>6 (15.0)</td>
</tr>
<tr>
<td>20</td>
<td>4 (10.0)</td>
</tr>
<tr>
<td>21</td>
<td>8 (20.0)</td>
</tr>
<tr>
<td>22</td>
<td>2 (5.0)</td>
</tr>
<tr>
<td>23</td>
<td>4 (10.0)</td>
</tr>
<tr>
<td>24</td>
<td>8 (20.0)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>31 (77.5)</td>
</tr>
<tr>
<td>Female</td>
<td>9 (22.5)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>17 (42.5)</td>
</tr>
<tr>
<td>White, non Hispanic</td>
<td>12 (30.0)</td>
</tr>
<tr>
<td>American Indian</td>
<td>2 (5.0)</td>
</tr>
<tr>
<td>Hispanic, Mexican</td>
<td>1 (2.5)</td>
</tr>
<tr>
<td>Mixed</td>
<td>8 (20.0)</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
</tr>
<tr>
<td>Full-time employment</td>
<td>2 (5.0)</td>
</tr>
<tr>
<td>Part-time employment</td>
<td>5 (12.5)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>28 (70.0)</td>
</tr>
<tr>
<td>Student</td>
<td>4 (10.0)</td>
</tr>
<tr>
<td>No answer</td>
<td>1 (2.5)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>High-school diploma/GED/Certificate</td>
<td>16 (40.0)</td>
</tr>
<tr>
<td>No degree/Unknown</td>
<td>24 (60.0)</td>
</tr>
</tbody>
</table>
Table 2. Homeless Experiences \((N = 40)\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>(M (SD))</th>
<th>(n , (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Homeless History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age first time no place to live</td>
<td>16.1 (4.1)</td>
<td></td>
</tr>
<tr>
<td>Number of times without shelter</td>
<td>26.4 (42.2)</td>
<td></td>
</tr>
<tr>
<td>Longest number of days without shelter</td>
<td>115.0 (306.5)</td>
<td></td>
</tr>
<tr>
<td>Number of days currently without shelter</td>
<td>92.5 (328.6)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Days of Night Time Residence (last 12 months)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own room</td>
<td>60.2 (16.6)</td>
<td></td>
</tr>
<tr>
<td>Family member’s home</td>
<td>52.7 (14.5)</td>
<td></td>
</tr>
<tr>
<td>Friends’ home (Couchsurfing)</td>
<td>130.4 (36.0)</td>
<td></td>
</tr>
<tr>
<td>Homeless shelter</td>
<td>51.6 (14.2)</td>
<td></td>
</tr>
<tr>
<td>Abandanded building/squat</td>
<td>23.1 (6.4)</td>
<td></td>
</tr>
<tr>
<td>Jail</td>
<td>10.5 (2.9)</td>
<td></td>
</tr>
<tr>
<td>Someplace indoors (bus/train station/hospital)</td>
<td>1.3 (0.4)</td>
<td></td>
</tr>
<tr>
<td>Someplace outdoors (street/park/alley)</td>
<td>17.4 (4.8)</td>
<td></td>
</tr>
<tr>
<td>Foster family</td>
<td>0.5 (0.1)</td>
<td></td>
</tr>
<tr>
<td>Residential treatment facility</td>
<td>0.2 (0.1)</td>
<td></td>
</tr>
<tr>
<td>Other places not mentioned</td>
<td>14.3 (3.9)</td>
<td></td>
</tr>
<tr>
<td><strong>Number of Youth Experienced Difficulties (last 12 months)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>19 (47.5)</td>
<td></td>
</tr>
<tr>
<td>Clothes</td>
<td>24 (60.0)</td>
<td></td>
</tr>
<tr>
<td>Medical care</td>
<td>16 (40.0)</td>
<td></td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>20 (50.0)</td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Descriptive Statistics of Sample \((N = 40)\)

<table>
<thead>
<tr>
<th>Variable (Alcohol)</th>
<th>(n)</th>
<th>Range</th>
<th>Original (M (SD))</th>
<th>Adjusted (M(SD))</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>UE</td>
<td>39</td>
<td>16-60</td>
<td>39.4 (16.2)</td>
<td>3.9 (1.6)</td>
<td>.0</td>
<td>-1.5</td>
</tr>
<tr>
<td>PD</td>
<td></td>
<td>10-30</td>
<td>24.8 (6.1)</td>
<td>5.0 (1.2)</td>
<td>-1.0</td>
<td>.2</td>
</tr>
<tr>
<td>PE</td>
<td></td>
<td>6-30</td>
<td>22.4 (7.4)</td>
<td>4.5 (1.5)</td>
<td>-.9</td>
<td>-.2</td>
</tr>
<tr>
<td>TPC</td>
<td></td>
<td>5-30</td>
<td>21.5 (7.4)</td>
<td>4.3 (1.5)</td>
<td>-.4</td>
<td>-.9</td>
</tr>
<tr>
<td>UTU</td>
<td></td>
<td>6-30</td>
<td>20.0 (7.6)</td>
<td>4.0 (1.5)</td>
<td>-.1</td>
<td>-1.2</td>
</tr>
<tr>
<td>CO</td>
<td></td>
<td>13-60</td>
<td>43.3 (16.3)</td>
<td>4.3 (1.6)</td>
<td>-.5</td>
<td>-1.4</td>
</tr>
<tr>
<td>SPU</td>
<td></td>
<td>5-30</td>
<td>18.4 (8.3)</td>
<td>3.7 (1.7)</td>
<td>.1</td>
<td>-1.2</td>
</tr>
<tr>
<td>PTO</td>
<td></td>
<td>5-30</td>
<td>17.5 (8.2)</td>
<td>3.5 (1.6)</td>
<td>.4</td>
<td>-1.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable (Drug)</th>
<th>(n)</th>
<th>Range</th>
<th>Original (M (SD))</th>
<th>Adjusted (M(SD))</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>UE</td>
<td>40</td>
<td>10-60</td>
<td>25.9 (14.2)</td>
<td>2.6 (1.4)</td>
<td>.7</td>
<td>-.4</td>
</tr>
<tr>
<td>PD</td>
<td></td>
<td>5-30</td>
<td>17.0 (6.7)</td>
<td>3.4 (1.3)</td>
<td>.0</td>
<td>-.6</td>
</tr>
<tr>
<td>PE</td>
<td></td>
<td>5-30</td>
<td>16.6 (8.2)</td>
<td>3.3 (1.6)</td>
<td>.0</td>
<td>-1.3</td>
</tr>
<tr>
<td>TPC</td>
<td></td>
<td>5-30</td>
<td>16.5 (8.6)</td>
<td>3.3 (1.7)</td>
<td>.3</td>
<td>-1.3</td>
</tr>
<tr>
<td>UTU</td>
<td></td>
<td>5-30</td>
<td>14.5 (7.4)</td>
<td>2.9 (1.5)</td>
<td>.4</td>
<td>-1.0</td>
</tr>
<tr>
<td>CO</td>
<td></td>
<td>10-60</td>
<td>31.2 (15.8)</td>
<td>3.1 (1.6)</td>
<td>.3</td>
<td>-1.2</td>
</tr>
<tr>
<td>SPU</td>
<td></td>
<td>5-30</td>
<td>13.9 (8.1)</td>
<td>2.8 (1.6)</td>
<td>.5</td>
<td>-1.1</td>
</tr>
<tr>
<td>PTO</td>
<td></td>
<td>5-30</td>
<td>11.5 (6.5)</td>
<td>2.3 (1.3)</td>
<td>1.0</td>
<td>.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coping</th>
<th>(n)</th>
<th>Range</th>
<th>Original (M (SD))</th>
<th>Adjusted (M(SD))</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task-oriented</td>
<td>40</td>
<td>21-78</td>
<td>57.8 (13.2)</td>
<td>-.8</td>
<td>.5</td>
<td></td>
</tr>
<tr>
<td>Emotion-oriented</td>
<td></td>
<td>21-75</td>
<td>52.1 (13.6)</td>
<td>-.4</td>
<td>-.6</td>
<td></td>
</tr>
<tr>
<td>Avoidance-oriented</td>
<td></td>
<td>31-80</td>
<td>54.3 (12.5)</td>
<td>.1</td>
<td>-.8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance Use</th>
<th>(n)</th>
<th>Range</th>
<th>Original (M (SD))</th>
<th>Adjusted (M(SD))</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>28</td>
<td>1-30</td>
<td>9.4 (8.8)</td>
<td>1.0</td>
<td>.1</td>
<td></td>
</tr>
<tr>
<td>All Drugs</td>
<td>39</td>
<td>3-30</td>
<td>23.2 (9.3)</td>
<td>-1.0</td>
<td>-.4</td>
<td></td>
</tr>
<tr>
<td>Marijuana</td>
<td>37</td>
<td>3-30</td>
<td>22.1 (9.5)</td>
<td>-1.0</td>
<td>-.8</td>
<td></td>
</tr>
<tr>
<td>Opiates</td>
<td>7</td>
<td>1-27</td>
<td>14.6 (10.8)</td>
<td>-.1</td>
<td>-1.7</td>
<td></td>
</tr>
<tr>
<td>Cocaine</td>
<td>7</td>
<td>1-30</td>
<td>8.3 (10.0)</td>
<td>2.2</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Inhalants</td>
<td>1</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. UE = unpleasant emotion; PD = physical discomfort; PE = pleasant emotion; TPC = testing personal control; UTU = urges and temptations to use; CO = conflict with others; SPU = social pressure to use; PTO = pleasant time with others.
Table 4. Correlations Among Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Substance Use</td>
<td>- .44&lt;sup&gt;a&lt;/sup&gt; - .39&lt;sup&gt;a&lt;/sup&gt; - .26 - .38&lt;sup&gt;a&lt;/sup&gt; - .39&lt;sup&gt;a&lt;/sup&gt; - .39&lt;sup&gt;a&lt;/sup&gt; - .38&lt;sup&gt;a&lt;/sup&gt; - .40&lt;sup&gt;a&lt;/sup&gt; - .01 .07 .20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. UE</td>
<td>- .41&lt;sup&gt;b&lt;/sup&gt; - .68&lt;sup&gt;c&lt;/sup&gt; .68&lt;sup&gt;c&lt;/sup&gt; .82&lt;sup&gt;c&lt;/sup&gt; .87&lt;sup&gt;c&lt;/sup&gt; .94&lt;sup&gt;c&lt;/sup&gt; .78&lt;sup&gt;c&lt;/sup&gt; .75&lt;sup&gt;c&lt;/sup&gt; .22 -.25 .11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. PD</td>
<td>- .13 .71&lt;sup&gt;c&lt;/sup&gt; - .34&lt;sup&gt;a&lt;/sup&gt; .61&lt;sup&gt;c&lt;/sup&gt; .64&lt;sup&gt;c&lt;/sup&gt; .70&lt;sup&gt;c&lt;/sup&gt; .53&lt;sup&gt;c&lt;/sup&gt; .59&lt;sup&gt;c&lt;/sup&gt; .33&lt;sup&gt;a&lt;/sup&gt; -.16 .23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PE</td>
<td>- .21 .71&lt;sup&gt;c&lt;/sup&gt; .61&lt;sup&gt;c&lt;/sup&gt; - .59&lt;sup&gt;c&lt;/sup&gt; .65&lt;sup&gt;c&lt;/sup&gt; .65&lt;sup&gt;c&lt;/sup&gt; .55&lt;sup&gt;c&lt;/sup&gt; .55&lt;sup&gt;c&lt;/sup&gt; .00 -.01 -.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. TPC</td>
<td>- .32&lt;sup&gt;a&lt;/sup&gt; .81&lt;sup&gt;c&lt;/sup&gt; .74&lt;sup&gt;c&lt;/sup&gt; .64&lt;sup&gt;c&lt;/sup&gt; - .86&lt;sup&gt;c&lt;/sup&gt; .87&lt;sup&gt;c&lt;/sup&gt; .84&lt;sup&gt;c&lt;/sup&gt; .73&lt;sup&gt;c&lt;/sup&gt; .28 -.23 -.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. UTU</td>
<td>- .26 .81&lt;sup&gt;c&lt;/sup&gt; .71&lt;sup&gt;c&lt;/sup&gt; .56&lt;sup&gt;c&lt;/sup&gt; .74&lt;sup&gt;c&lt;/sup&gt; - .84&lt;sup&gt;c&lt;/sup&gt; .88&lt;sup&gt;c&lt;/sup&gt; .82&lt;sup&gt;c&lt;/sup&gt; .21 -.16 .04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. CO</td>
<td>- .26 .88&lt;sup&gt;c&lt;/sup&gt; .73&lt;sup&gt;c&lt;/sup&gt; .62&lt;sup&gt;c&lt;/sup&gt; .86&lt;sup&gt;c&lt;/sup&gt; .81&lt;sup&gt;c&lt;/sup&gt; - .75&lt;sup&gt;c&lt;/sup&gt; .68&lt;sup&gt;c&lt;/sup&gt; .30 -.28 .09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. SPU</td>
<td>- .38&lt;sup&gt;a&lt;/sup&gt; .81&lt;sup&gt;c&lt;/sup&gt; .67&lt;sup&gt;c&lt;/sup&gt; .61&lt;sup&gt;c&lt;/sup&gt; .86&lt;sup&gt;c&lt;/sup&gt; .77&lt;sup&gt;c&lt;/sup&gt; .76&lt;sup&gt;c&lt;/sup&gt; - .78&lt;sup&gt;c&lt;/sup&gt; .17 -.11 .09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PTO</td>
<td>- .37&lt;sup&gt;a&lt;/sup&gt; .76&lt;sup&gt;c&lt;/sup&gt; .64&lt;sup&gt;c&lt;/sup&gt; .58&lt;sup&gt;c&lt;/sup&gt; .72&lt;sup&gt;c&lt;/sup&gt; .73&lt;sup&gt;c&lt;/sup&gt; .70&lt;sup&gt;c&lt;/sup&gt; .78&lt;sup&gt;c&lt;/sup&gt; - .09 -.02 -.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Task</td>
<td>.05 .25 .32&lt;sup&gt;a&lt;/sup&gt; -.03 .33&lt;sup&gt;a&lt;/sup&gt; .27 .40&lt;sup&gt;a&lt;/sup&gt; .24 .16 - -.21 .44&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Emotion</td>
<td>-.16 -.15 -.16 .07 -.13 -.21 -.28 -.11 -.05 -.21 - .10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Avoidance</td>
<td>.06 -.02 -.08 -.33&lt;sup&gt;a&lt;/sup&gt; -.18 -.08 -.06 -.09 -.20 .44&lt;sup&gt;b&lt;/sup&gt; .10 -</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>Note.</sup> Relationships with alcohol are presented in the upper diagonal and relationships with drug are presented in the lower diagonal. UE = unpleasant emotion; PD = physical discomfort; PE = pleasant emotion; TPC = testing personal control; UTU = urges and temptations to use; CO = conflict with others; SPU = social pressure to use; PTO = pleasant time with others.
<sup>a</sup> p < .05. <sup>b</sup> p < .01. <sup>c</sup> p < .001.
Table 5. Regression Models Explaining Alcohol Use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td></td>
<td>UE</td>
<td>UTU</td>
</tr>
<tr>
<td>Constant</td>
<td>39.69</td>
<td>52.63</td>
</tr>
<tr>
<td>Gender</td>
<td>-.20</td>
<td>-.12</td>
</tr>
<tr>
<td>Age</td>
<td>-.34</td>
<td>-.35(^m)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.22</td>
<td>-.33(^m)</td>
</tr>
<tr>
<td>Abstinence Self-efficacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UE</td>
<td></td>
<td>-.51(^b)</td>
</tr>
<tr>
<td>UTU</td>
<td></td>
<td>-.47(^a)</td>
</tr>
<tr>
<td>CO</td>
<td></td>
<td>-.43(^a)</td>
</tr>
<tr>
<td>SPU</td>
<td></td>
<td>-.51(^a)</td>
</tr>
<tr>
<td>PTO</td>
<td></td>
<td>-.38(^a)</td>
</tr>
<tr>
<td>(F)</td>
<td>1.40</td>
<td>3.70(^a)</td>
</tr>
<tr>
<td>(Df)</td>
<td>3, 24</td>
<td>4, 23</td>
</tr>
<tr>
<td>(R^2)</td>
<td>.15</td>
<td>.39</td>
</tr>
<tr>
<td>Adjusted (R^2)</td>
<td>.04</td>
<td>.29</td>
</tr>
<tr>
<td>(R^2) change</td>
<td>.24(^b)</td>
<td>.20(^a)</td>
</tr>
<tr>
<td>(TOL)</td>
<td>.75-.95</td>
<td>.73-.94</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.12</td>
<td>2.34</td>
</tr>
<tr>
<td>Achieved Power</td>
<td>.90</td>
<td>.80</td>
</tr>
<tr>
<td>Effect Size</td>
<td>.40</td>
<td>.30</td>
</tr>
</tbody>
</table>

Note. All regression weights presented are standardized values, with the exception of constant. UE = unpleasant emotion; UTU = urges and temptations to use; CO = conflict with others; SPU = social pressure to use; PTO = pleasant time with others. \(^{m}\) p < .10 \(^{a}\) p < .05 \(^{b}\) p < .01.
Table 6. Regression Models Explaining Drug Use

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UE</td>
<td>SPU</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>16.79</td>
<td>30.38</td>
<td>32.45</td>
</tr>
<tr>
<td>Gender</td>
<td>.09</td>
<td>.06</td>
<td>.04</td>
</tr>
<tr>
<td>Age</td>
<td>.10</td>
<td>.03</td>
<td>-.01</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.25</td>
<td>-.27^m</td>
<td>-.26</td>
</tr>
<tr>
<td>Abstinence Self-efficacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UE</td>
<td></td>
<td>-.42^b</td>
<td></td>
</tr>
<tr>
<td>SPU</td>
<td></td>
<td></td>
<td>-.38^a</td>
</tr>
<tr>
<td>F</td>
<td>.89</td>
<td>2.72^a</td>
<td>2.23^m</td>
</tr>
<tr>
<td>Df</td>
<td>3, 35</td>
<td>4, 34</td>
<td>4, 34</td>
</tr>
<tr>
<td>R^2</td>
<td>.07</td>
<td>.24</td>
<td>.21</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>-.01</td>
<td>.15</td>
<td>.12</td>
</tr>
<tr>
<td>R^2 change</td>
<td>.17^b</td>
<td>.14^a</td>
<td></td>
</tr>
<tr>
<td>TOL</td>
<td>.86-.97</td>
<td>.85-.97</td>
<td>.81-.97</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>2.04</td>
<td>2.09</td>
<td>2.08</td>
</tr>
<tr>
<td>Achieved Power</td>
<td>.84</td>
<td>.72</td>
<td></td>
</tr>
<tr>
<td>Effect Size</td>
<td>.23</td>
<td>.17</td>
<td></td>
</tr>
</tbody>
</table>

Note. All regression weights presented are standardized values, with the exception of constant. UE = unpleasant emotion; SPU = social pressure to use. ^m p < .10 ^a p < .05. ^b p < .01.
Appendix C: Figure
Figure 1. Interaction Between Ethnicity and Abstinence Self-efficacy in Social Pressure to Use on Alcohol Use.