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Multiple Victimization Experiences, Resources, and Co-Occurring Mental Health Problems Among Substance-Using Adolescents

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Abstract

This study examined the relationship between multiple types of victimization experiences, psychological and social resources, and co-occurring mental health problems among substance-using adolescents. Data for this cross-sectional study were obtained from a multisite research project in which adolescents ages 11–18 years participated in a comprehensive screening program for substance misuse. Multiple types of victimization, low self-efficacy beliefs, lack of support for victimization issues, and available sources of emotional support were positively related to co-occurring mental health problems. These findings suggest that treatment planning and interventions may focus on helping adolescents cope effectively with their victimization experiences and addressing their mental health needs. Particular emphasis may be placed on enhancing self-efficacy and social skills so that adolescents may benefit from their available sources of social support.

Keywords

co-occurring problems; substance use; internalizing; externalizing; victimization; adolescents

Studies have shown high rates of victimization among adolescents (Fairbank, 2008; Kilpatrick, Saunders, & Smith, 2003; Whitman et al., 2005; Wordes & Nunez, 2002), with victimization having a deleterious effect on mental health (MH; Felix & McMahon, 2006; Menard, 2002; Silver, Arseneault, Langley, Caspi, & Moffitt, 2005). The effects of victimization are noted in terms of general psychological distress as well as specific psychological disorders such as posttraumatic stress disorder (PTSD), depression, and anxiety (Berthold, 2000; Buckner, Beardslee, & Bassuk, 2004; Clear, Vincent, & Harris, 2006; Fitzpatrick, Piko, Wright, & LaGory, 2005; Gatz et al., 2005; Herrero, Estevez, & Musitu, 2006; Kaplan et al., 1998).

Most studies on the outcomes of victimization have focused on single types of violence or abuse; yet, psychological distress could be attributed to experiencing other types of victimization, which were not included as predictor variables in the research. According to

Finkelhor, Ormrod, Turner, and Hamby (2005), examining only one type of victimization may ignore or underestimate the effects of other types of victimization, which may have negative effects on adolescent MH. Moreover, different types of victimization may co-occur (Finkelhor et al., 2005). Finkelhor, Ormrod, and Turner (2007) found that victims who experienced more types of victimization reported more trauma symptoms than did victims who experienced the same type of victimization repeatedly.

Adolescents may be further harmed by multiple victimization experiences if their capacity to cope has been eroded because of inadequate resources. *Resources* refer to assets that can be used to manage stressful events (Taylor & Stanton, 2007) and, in this study, are classified into two categories: psychological and social. Psychological coping resources include positive self-perception, whereas social coping resources include social support (Cohen & Willis, 1985; Macmillan, 2001; Taylor & Stanton, 2007; Zielinski & Bradshaw, 2006). Both categories are important for coping with life stressors and may play an important role in protecting victims from the adverse effects of victimization stress. Resources such as efficacy beliefs (Mosher & Prelow, 2007) and social support (Holt & Espelage, 2005) have been found to reduce negative MH symptoms (such as anxiety and depression) among victimized adolescents (Bal, Crombez, De Bourdeaudhuij, & Oost, 2009; Vranceanu, Hobfoll, & Johnson, 2007).

PSYCHOLOGICAL RESOURCES

Psychological resources include *self-efficacy*, which refers to individuals' perceptions of their competence or ability to perform tasks well (Pajares & Schunk, 2001). According to Bandura, Pastorelli, Bararanelli, and Caprara (1999), "a sense of personal efficacy is the foundation of human agency. Unless people believe they can produce desired effects by their actions, they have little incentive to act or to persevere in the face of difficulties" (pp. 258–259).

During the process of victimization, adolescents experience interactions in which they are unable to prevent being attacked, assaulted, or threatened. These experiences may affect their perception of self-efficacy, and they may develop negative self-images. Thus, individuals' identities of self are threatened (Macmillan, 2001). For example, adolescents who experience ongoing abuse may develop learned helplessness or hopelessness and internalized negative self-perceptions (Flannery, 2005).

Although lower self-efficacy may relate to hopelessness, stronger efficaciousness may influence motivation toward positive change (Pajares, 1997) and the use of positive coping strategies (Taylor & Stanton, 2007). According to Pajares (1997), "the higher the sense of efficacy, the greater the effort, persistence, and resilience" (p. 4). Self-efficacy, directly and indirectly (via various coping methods), influences mental and physical health outcomes (Roesch, Weiner, & Vaughn, 2002). High self-efficacy beliefs should relate to lower likelihood of MH problems among victimized adolescents.

SOCIAL RESOURCES

Social resources, or *social support*, is a "significant coping resource ... defined as the perception or experience that one is loved and cared for by others, esteemed and valued, and part of a social network of mutual assistance and obligations" (Taylor & Stanton, 2007, p. 381; Wills, 1991). Boswell (1969) noted that individuals mobilize their social support networks at the time of crisis or stress. These supportive relationships provide resources to address stressors and thus contribute to their well-being (Yarcheski & Mahon, 1999). More social support has been found to reduce internalizing and externalizing symptoms among adolescents (Bal et al., 2009).

Researchers consider social support as a critical factor that may intervene between victimization experiences and negative outcomes by facilitating healthy behaviors or providing solutions to problems (Trembley, Hebert, & Piche, 1999). Although victimization may damage self-efficacy (Macmillan, 2001), according to self-affirmation theory, affirming alternative sources of self-identity through relationships may protect the perceived integrity and worth of the self (Sherman & Cohen, 2006). Through others, victims engage in activities that remind them of who they are or their role in society, which may facilitate better coping with the stress of victimization. In this study, therefore, it is hypothesized that social support will reduce the risk for co-occurring MH problems among adolescents with multiple victimization experiences.

VICTIMIZATION AND MENTAL HEALTH PROBLEMS AMONG SUBSTANCE-USING ADOLESCENTS

A large number of adolescents in substance abuse treatment report victimization histories and MH problems (Dennis, 2008) such as internalizing and externalizing behaviors (e.g., Bolger & Patterson, 2001; Herrenkohl & Herrenkohl, 2007; Naar-King, Silvern, Ryan, & Sebring, 2002). Victimization histories and related MH problems among substance-using adolescents pose an additional level of complexity for addiction practitioners. For example, victimized adolescents with externalizing behavior problems often engage in violent behaviors, placing them at risk for violating legal and social norms. These problems could spread to other life domains, such as school performance, employment, social support, which are considered crucial elements in the treatment of substance misuse (Sabri, Williams, Smith, Jang, & Hall, 2010). Because of these multiple problems, adolescents are less likely to adhere to treatment protocols or fully benefit from substance abuse treatment (Hiller, Knight, & Simpson, 1996) and demand more attention and services compared with adolescents with one type of problem (Grella, Joshi, & Hser, 2004). Thus, it is essential to examine factors associated with MH problems among victimized adolescents in substance abuse treatment settings.

Adolescents' capacity to cope with victimization, and their risk for poor mental or behavioral health, are affected by other factors such as the extent to which the experiences were stressful, whether they possess the skills to adjust, or have available social resources for interpreting victimization experiences (Gottfredson, 1989). Furthermore, adolescents who are multiply victimized may be differentially affected than adolescents who are singly victimized (Finkelhor et al., 2005). However, researchers who examined the effect of multiple types of victimization focused on explaining a single type of MH problem (Finkelhor et al., 2007). Other researchers have focused on the risk and protective factors (such as age, race, injury, and life threat) that differentiated multiply victimized from singly victimized adolescents (Stevens, Ruggiero, Kilpatrick, Resnick, & Saunders, 2005). No study was found that specifically evaluated the role of multiple types of victimization and resources in explaining co-occurring MH problems among substance-using adolescents. This research may have implications for identifying adolescents at high risk for co-occurring problems and for highlighting resources that can be targeted to develop effective interventions for substance-using adolescents with multiple victimization histories.

THE CURRENT STUDY

Therefore, the purpose of this study was to (a) investigate the relationship between multiple types of victimization, psychological and social resources, and co-occurring MH problems (i.e., internalizing and externalizing behavior problems) among adolescents and (b) determine whether resources mediated the relationship between multiple types of victimization and co-occurring MH problems.

It was expected that adolescents with multiple victimization experiences and fewer psychological and social resources would be more likely to have co-occurring internalizing and externalizing problems than an internalizing-only behavior problem, an externalizing-only behavior problem, or neither an internalizing nor an externalizing behavior problem. Furthermore, it was anticipated that psychological and social resources would mediate the relationship between multiple types of victimization and co-occurring MH problems.

For psychological resources, we included self-efficacy beliefs. *Self-efficacy* includes adolescents' perceptions of global competence as well as their abilities to remain abstinent from substance misuse. Both types of self-efficacy captured adolescents' confidence in their abilities across various life domains. For social resources, we included available emotional support, available problem-solving support, and received support to deal with victimization issues. *Emotional support* includes availability of someone in whom the adolescent could confide to talk about needs, feelings, or emotions. *Problem-solving support* includes someone whom the adolescent felt could help him or her figure out how to cope with his or her problems. *Received social support* is help received to deal specifically with victimization experiences. These different types of resources were selected for their potential to enhance adolescents' ability to cope with multiple types of victimization and, therefore, reduce the risk of co-occurring MH problems among substance-using adolescents.

METHOD

Procedure and Participants

Data for this secondary data analysis came from 106 Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Substance Abuse Treatment (CSAT) funded substance abuse treatment sites in the United States. The source of data was a comprehensive assessment interview with adolescents at the time of intake. The original sample included 12,996 substance-using adolescents who were referred to substance abuse assessment by various sources: employers, schools, lawyers, courts, juvenile justice systems, housing or community agencies, churches, close friends, families, or departments of children and family services. Using a nonprobability purposive sampling procedure, adolescents (ages 11–18 years) who reported any types of lifetime interpersonal violence victimization (physical, sexual, or emotional abuse) and who reported use of substances and met criteria for abuse or dependence in the past year were selected into the sample. Nonvictims and nonusers were excluded. Furthermore, the sample included only those adolescents who had complete data on all variables used in this study. This selection criterion was necessary because most programs did not collect data for several key variables such as global self-efficacy and social support. Using these selection criteria and excluding missing data, the final sample was reduced from 12,996 to 2,066 adolescents.

Table 1 presents the characteristics of the sample. The sample comprised 69.2% males ($n = 1,429$) and 30.8% females ($n = 637$) with a mean age of 15.6. Most of the sample was nonwhite (53.5%, $n = 1,106$); 46.5% of the adolescents were White ($n = 960$). The largest minority group was African American (17.8%, $n = 368$) followed by Hispanic (14.1%, $n = 291$). About 4% of the sample was Native American ($n = 78$), 0.7% was Asian ($n = 15$), and 17.2% was mixed or other races ($n = 354$). Because of their small sample sizes, Native Americans and Asians were combined into the category "other races."

Most adolescents in the sample had a diagnosis of substance dependence (47.3%, $n = 977$). Thirty-five percent of adolescents ($n = 724$) had a diagnosis of substance abuse. Substance users (those without abuse or dependence diagnoses) comprised the smallest proportion of the sample (17.7%, $n = 365$). Most adolescents (32.5%, $n = 672$) reported comorbidity of internalizing and externalizing problems, followed by adolescents with an externalizing-only

problem (23.9%, $n = 494$) and adolescents with an internalizing-only problem (11.2%, $n = 232$).

Measures

This study used the Global Appraisal of Individual Need–Intake (GAIN-I) version—a standardized instrument administered for research purposes and to support clinical decision making for diagnosis, placement, treatment planning, and service use. The instrument has been used with both adolescents and adults (Dennis, Scott, Godley, & Funk, 1999; Dennis, Chan, & Funk, 2006). It has eight sections covering background information, substance abuse, physical health, risk behaviors, MH, environment, legal information, and vocational information and includes more than 1,500 questions and 100 scales. The GAIN's measures have been validated with collateral reports, urine tests, follow-up methods, and treatment records (Dennis, et al., 2006; Dennis, Ives, White, & Muck, 2008; Garner, Godley, & Funk, 2008).

A cross-validation study of 600 parents who reported their adolescents' internal and external distress and symptoms of conduct disorders on the GAIN-I with the Child Behavior Checklist reported similar scales had correlations of .60; unrelated scales had correlations of .0–.40 (Dennis, Titus, Diamond et al., 2002; Dennis, Titus, White, Unsicker, and Hodgkins, 2002). Titus, Dennis, White, Scott, and Funk (2003) provided evidence for the construct validity of the General Victimization Scale (GVS) by demonstrating its relationship to frequency and recency of victimization and more severe types of victimization such as sexual assault.

Mental Health Outcomes—The categorical MH outcome variable was created using the Major Depressive Disorder Index (MDDI), the Generalized Anxiety Disorder Index (GADI), and the Conduct Disorder Scale (CDS). The MDDI (past year; 12 items; $\alpha = .85$) is based on a count of past-year Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (*DSM-IV*) symptoms of depression (e.g., feeling very trapped, lonely, sad, blue, depressed, or hopeless about the future). Adolescents met the criteria of clinically significant major depressive disorder symptoms if they endorsed five or more symptom on the MDDI and one of the required three symptoms on the measure. The GADI (past year; nine items, $\alpha = .83$) is a count of past-year *DSM-IV* symptoms of anxiety disorders (e.g., feeling very anxious, nervous tense, scared, panicked, or like something bad was going to happen; being unable to control, or having difficulty controlling one's worries). Adolescents met the criteria of significant generalized anxiety disorder symptoms if they endorsed more than two symptoms on the GADI. The CDS (past year; 15 items, $\alpha = .82$) is based on a count of past-year *DSM-IV* symptoms of conduct disorder (e.g., having been a bully or threatening other people, starting fights with other people), with three or more endorsed items suggesting clinically significant conduct disorder symptoms (GAIN Coordinating Center, 2011; Subramaniam, Ives, Stitzer, & Dennis, 2010).

Adolescents who met criteria for depression and/or anxiety but not conduct disorder were categorized as having an internalizing-only problem. Adolescents who met criteria for conduct disorder but not depression and anxiety were categorized as the externalizing-only problem group. Those who met criteria for both internalizing and externalizing problems were assigned to the co-occurring MH problems group, and those who did not meet criteria for either of these problems were assigned to the neither internalizing nor externalizing problems group.

Multiple Types of Victimization—Multiple types of victimization were measured using items from the GVS (15 items, $\alpha = .82$), which was part of the environment and living

situation domain of the GAIN-I. The GVS is a count of types of victimization experienced by the respondent in his or her lifetime and the number of traumagenic factors involved in the victimization (e.g., duration and relationship with the perpetrator). Three items from the GVS were used to assess types of victimization experienced: (a) physical abuse with or without a weapon, (b) sexual abuse, and (c) emotional abuse. Example items for physical abuse include “Has anyone ever (a) attacked you with a gun, knife, stick, bottle, or other weapon? (b) Hurt you by striking or beating you to the point that you had bruises, cuts, or broken bones or otherwise physically abused you?” A categorical variable was created to classify adolescents into two categories: adolescents with more than one type of victimization and adolescents with a single type of victimization. Adolescents who endorsed two or three types of victimization were classified as multiply victimized and assigned the value of 1 (single type = 0).

Psychological Resources—*Global self-efficacy* relates to adolescents’ reported strengths in general life domains, such as school, work, family, close friends, sports, exercise, and music. These beliefs were measured using the Strength Self-Efficacy Index (10 items, $\alpha = .61$). Example item: “During the past 12 months, which of the following areas do you consider to be your strengths—doing well at school or training?” Higher scores indicate areas of strengths (theoretical range = 0–10).

Self-efficacy related to substance use, or the confidence or belief in one’s ability to abstain from drugs, was measured using the Self-Efficacy Scale (five items, $\alpha = .71$). It is based on the number of places adolescents believe they could avoid thinking about or actually using substances. Example item: “Do you currently think you could avoid using alcohol or drugs at work or school?” Higher scores are related to the increased confidence in their abilities to resist relapse in multiple settings (theoretical range = 0–5).

Social Resources—*Types of people available for emotional support* was measured using items from the General Social Support Index (GSSI), a nine-item summative index ($\alpha = .78$) based on the number of sources of social support reported by adolescents in the past year. These sources include professionals, family, friends, peers, or work colleagues. Example item: “During the past 12 months, did you have the following kinds of social support—a professional counselor or other health provider to talk to?” Higher scores indicate a greater number of people available for emotional support (theoretical range = 0–6).

Available problem-solving support was measured using the following dichotomous yes or no item from the GSSI: “During the past 12 months, did you have the following kind of social support?—someone you felt could help you figure out how to cope with any problems you were having or might have” (*yes* = 1, *no* = 0).

Received social support was examined using a dichotomous item from the GVS: “Have you received help to deal with these” [victimization] “problems?” (*yes* = 1, *no* = 0).

Control Variables

Demographic Variables—The following sociodemographic variables were examined from sections of the GAIN-I: gender, race/ethnicity, age, and family structure. Gender was measured using a dichotomous item in the GAIN-I (*male* = 0, *female* = 1). Family structure was also measured using a dichotomous variable (*single-parent family* = 1, *other types of families* = 0). Ethnicity included dummy-coded variables: African Americans, Hispanics, and other races. White was the reference group. Age was measured using a continuous variable.

Sources of Stress: This variable was measured using the Other Sources of Stress Index ($\alpha = .62$), a nine-item summative index based on the number of sources of environmental (nonrelational) stress, such as transportation problems, discrimination in the community, or threat of losing a job. Higher values on the scale are associated with a greater variety of environmental stressors (theoretical range: 0–9).

Severity of Substance Misuse: The Substance Severity Measure-Past Year (SSMY) was used to measure abuse and dependence. It measures severity of substance misuse on a scale of 1–5 (1 = *no use*, 2 = *substance use*, 3 = *substance abuse*, 4 = *substance dependence*, and 5 = *substance dependence with physiological symptoms*). Adolescents with no use were excluded from this study. The variable was dummy coded using four categories: substance use, substance abuse, substance dependence without physiological symptoms (tolerance and withdrawal), and substance dependence with physiological symptoms, with substance users as the reference group.

The Substance Abuse Index-Past Year (SAI) and the Substance Dependence Scale-Past Year (SDS) from GAIN-I were used to create the substance severity measure. SAI ($\alpha = .70$) is based on the four *DSM-IV* symptoms of substance abuse in the past year. SDS ($\alpha = .83$) is based on the count of seven *DSM-IV* symptoms of substance dependence in the past year. Using the *DSM-IV* criteria, adolescents with fewer than three symptoms on the SDS and more than one symptom on the SAI were assigned to the substance abuse group. Those with more than three symptoms on the SDS were assigned to the substance dependence group without physiological symptoms. Adolescents who scored greater than three on the SDS, including symptoms of withdrawal, were assigned to the group with dependence with physiological symptoms.

DATA ANALYSIS

Tables 1 and 2 provide descriptive information. Data were analyzed using a mixed effects multinomial logistic regression procedure in Stata Version 12, including random effects for site-to-site variability. The first model evaluated the unique contribution of the multiple victimization experiences to the co-occurring MH problems outcome after controlling for the demographic variables, severity of substance misuse, and nonvictimization stressors. The second model evaluated the effect of psychological and social resources after controlling for victimization and control variables. The reduction in the magnitude of the multiple victimization coefficient in Model 2 from Model 1 was examined to evaluate for the mediation effect of resources. The results of the multinomial logistic regression analyses are presented in Table 3.

RESULTS

Effects of Control Variables

Among the control variables, adolescents with substance dependence and more stressors were at higher risk for co-occurring MH problems (vs. neither internalizing nor externalizing problem, vs. an internalizing-only problem, and vs. an externalizing-only problem). Compared with male victims, female victims appeared to be at greater risk for co-occurring MH problems (vs. an externalizing-only problem and neither internalizing nor externalizing problem). Family structure was not significantly related to co-occurring MH problems. However, race/ethnicity emerged as a significant predictor of externalizing and internalizing problems. Although African American adolescents were at greater risk for an externalizing-only problem (vs. co-occurring MH problems), Hispanic adolescents were at higher risk for an internalizing-only problem than co-occurring MH problems.

Effects of Victimization and Resource Variables

As anticipated, having multiple victimization experiences significantly increased the likelihood of co-occurring MH problems (i.e., both internalizing and externalizing problems) among adolescents. An adolescent with multiple victimization experiences was 1.31 times more likely to have a co-occurring MH problem (vs. neither internalizing nor externalizing problem) than an adolescent with single type of victimization experience ($OR = 1.31$; Model 2). In addition, if an adolescent was multiply victimized, the odds that he or she had a COD-MH (vs. externalizing-only problem) significantly increased by a factor of 1.21 (21%; Model 2).

It was hypothesized that adolescents with fewer psychological and social resources are more likely to exhibit a co-occurring MH (i.e., both internalizing and externalizing) problem than they are to exhibit an internalizing-only, an externalizing-only, or neither an internalizing nor an externalizing problem. Among psychological and social resources, the hypothesis was supported for some comparisons but not for other comparisons. Adolescents with lower self-efficacy related to substance use were more likely to exhibit co-occurring MH problems than they were to exhibit externalizing-only or neither internalizing nor externalizing problem. If there was a one unit increase in self-efficacy related to substance use, then the odds that adolescents would have co-occurring MH problems (vs. an externalizing-only problem) decreased by 27% ($OR = 0.73$; Model 3). Furthermore, if there was a one unit increase in self-efficacy related to substance use, the odds that adolescents would have co-occurring MH problems (vs. neither internalizing nor externalizing problem) decreased by 29% ($OR = 0.71$; Model 2).

As hypothesized, lower global self-efficacy increased the odds of co-occurring MH problems (vs. neither internalizing nor externalizing problem). If there was one unit increase in global self-efficacy beliefs, the odds that adolescents would have co-occurring MH problems (vs. neither internalizing nor externalizing problem) decreased by 14% ($OR = 0.86$; Model 2). Both lower global and substance use specific self-efficacy beliefs, therefore, were significantly associated with an increase in the odds of adolescents having co-occurring MH problems (vs. neither internalizing nor externalizing problem).

Contrary to the hypothesis, problem-solving support did not emerge as a significant predictor of co-occurring MH problems. If there was an additional increase in the available sources for emotional support, the odds that adolescents would have co-occurring MH problems (vs. neither internalizing nor externalizing problem) actually increased by 1.33 (33%; Model 2). However, for adolescents who reported having received support for victimization issues, the odds of co-occurring MH problems (vs. an internalizing-only problem) decreased by 35% ($OR = 0.65$; Model 2).

Mediation Effect

The mediation hypothesis was not supported for the effect of psychological and social resources on the relationship between multiple types of victimization and co-occurring MH problems. Although the coefficient for multiple victimization experiences was reduced in magnitude for one comparison (co-occurring MH problems vs. an externalizing disorder-only problem) when controlled for the demographic and resource variables in Model 2, however, the reduction in coefficient was less than 20%. Although a 20% or a greater reduction has been used by researchers as evidence of mediation (MacKinnon, 2008), these results do not provide support for mediation.

DISCUSSION

This study examined the role of multiple types of victimization and resources on co-occurring MH problems as well as the potential mediating effects of psychological and social coping resources on the relationship between multiple types of victimization and co-occurring MH among victimized substance-using adolescents. As anticipated, adolescents with multiple types of victimization experiences were more likely to have co-occurring MH problems than were adolescents with a single type of victimization experiences. The findings are in line with research that shows multiple types of victimization relate to a greater number of, and more severe, negative outcomes than do single types of victimization (Finkelhor et al., 2007). The traumagenic dynamics (Finkelhor, 1987) involved in multiple victimization experiences (e.g., powerlessness and betrayal) or repeated negative messages that something is wrong with the victim, or he or she is at fault for the abuse, may increase the likelihood of both internalizing and externalizing behavior problems.

It was hypothesized that adolescents with fewer psychological and social resources would be more likely to exhibit a co-occurring MH problem than they would be to exhibit an internalizing-only, an externalizing-only, or neither an internalizing nor an externalizing problem. This hypothesis was supported for psychological resources. A lower level of psychological resources (self-efficacy related to substance use and global self-efficacy beliefs) were associated with a higher risk for co-occurring MH problems. Self-efficacy is an important variable in studies on victims. Victimized children and adolescents have more negative representations of self (Kim & Cicchetti, 2003), and they often show learned helplessness and hopelessness. Such negative self-perceptions may explain why adolescents reported helplessness in their ability to control their drug use. Low self-efficacy was significantly related to greater likelihood of co-occurring MH problems. Adolescents with low global self-efficacy and low self-efficacy related to substance use were more likely to have co-occurring MH problems (vs. neither internalizing nor externalizing problem) than did adolescents with high self-efficacy. Other studies have also found an association of low self-efficacy with poorer MH. For instance, in a study comparing maltreated children younger than age 8 years with those children 8 years old and older, lower levels of social self-efficacy (self-efficacy in conflict situations) were related to higher levels of internalizing problems (Kim & Cicchetti, 2003).

As expected, received support for victimization issues appeared to have a beneficial effect on reducing the likelihood of co-occurring MH problems among adolescents. Support has a greater influence on MH if it is the support required to deal with particular stressors (Cohen & Willis, 1985). Available problem-solving support, however, was not associated with co-occurring MH problems. More sources for emotional support increased, not decreased, the likelihood of co-occurring MH problems. Adolescents with a larger number of people available for emotional support were more likely to have internalizing-only problems versus neither internalizing nor externalizing problems and were more likely to have an externalizing-only problem versus neither internalizing nor externalizing. These findings are contrary to our hypothesis.

In this study, available sources of emotional support were evaluated in general terms, not in relation to multiple victimization experiences, which may be more important in understanding co-occurring MH. The measures could not cover multiple support systems available for victims to specifically address their abuse issues. In addition, the measures used were insufficient to evaluate the receipt of support, the context of the support provided, and the type of support in detail.

Another possible explanation for the increase in co-occurring MH problems with the increase in the number of sources of emotional support is differences in characteristics of providers and recipients of support and the valence of the support. Characteristics of both support providers and adolescents may influence adolescents' coping and adjustment to stress and may be related to co-occurring MH. Adolescents' display of negative emotions under stress, such as frustration and anxiety, can lead support providers to make unhelpful comments or show discomfort or rejection (more negative interactions). Support providers' reactions can have negative effects on victims' MH (Westmaas & Silver, 2001). This study did not examine negative exchanges, but they may explain the positive relationship between the number of sources of emotional support and greater likelihood of co-occurring MH problems. This research could not determine the nature of interactions adolescents had with their sources of emotional support.

If adolescents are able to develop and maintain positive relationships with support providers and are able to receive desired support, the support may have beneficial outcomes. Adolescents who experience more stress, however, may have more people who they can turn to for support, but because of their overreliance on these people, they may not be able to maintain these relationships over time (Muller & Lemieux, 2000; Osborne & Rhodes, 2001). Some research suggests support providers may not invest effort in supporting individuals who cope poorly or do not attempt to help themselves. In contrast, individuals who work hard to overcome their problems motivate others to help them (Schwarzer & Knoll, 2007).

Finally, the findings that the numbers of sources of support were associated with greater likelihood of co-occurring MH problems indicate adolescents' support systems may not have been adequate for them to address their mental health needs. Adolescents in more distress or adolescents with internalizing and externalizing problems may be more likely to have more support providers after these problems emerge. Consequently, the cross-sectional nature of the study may have accounted for the relationships observed. Longitudinal research may be useful to study how support influences problem development.

Self-efficacy is one of the mechanisms through which social support facilitates better coping with stress and positive outcomes (Schwarzer & Knoll, 2007). Although adolescents with multiple victimization experiences had higher mean scores on available sources of emotional support than those who did not have these experiences, they had lower scores on self-efficacy. The analysis in this study did not examine the mediation effect of self-efficacy on the relationship between social support and mental health and, therefore, should be examined in future studies.

This study has several limitations that may have affected the results. This research is based on pooled data from multiple individual site studies. The sample included adolescents who were assessed at the time of intake for substance abuse treatment and therefore is not representative of the nonclinical population. This study is only generalizable to substance-using adolescents with histories of victimization and who were referred to substance abuse treatment. As many adolescents assessed for substance abuse treatment are court ordered, they may have responded in socially desirable ways and may have underreported externalizing behavior problems. This may have resulted in biased prediction of externalizing-only problems and co-occurring internalizing and externalizing problems.

Another limitation relates to the study's focus on a limited number of psychological and social resource variables. Also, some of the variables tested for mediation may have been too general and not specific to victimization experiences. Because of the limitations of secondary data analysis, the study could not include victimization-specific variables such as attributions of blame, perception of threat, and coping processes that have empirical support

for their mediating effects on the relationship between victimization and outcomes. For instance, studies show that victimization-specific negative appraisals such as blaming oneself for the experience increase the risk of internalizing and externalizing symptoms (Bal et al., 2009). Furthermore, the social resources tested for their mediation effect in this study did not capture the full range of perceived and received support that victims may desire, and that could explain variability in their MH outcomes. The full range of support may include such factors as feeling supported and believed by someone they trusted to share their experiences, immediate safety plans developed to prevent their further victimization, and level of satisfaction with the support provided.

Because of the cross-sectional nature of this research, we could not establish causality between the studied variables. The cross-sectional design limited the argument for temporal conclusions about the direct effects examined, and, therefore, the results of this study should be interpreted with caution. For example, MH problems may be contributing factors to victimization experiences. Longitudinal studies are necessary to examine processes that explain the trajectory of victimization experiences to comorbidity of internalizing and externalizing disorders. Despite the cross-sectional nature of this research, however, and other limitations discussed in this section, the existing theoretical literature that establishes a relationship between victimization and negative outcomes provides a strong support for the effects of multiple types of victimization on co-occurring MH problems among adolescents.

This study contributes to the knowledge of co-occurring disorders by identifying multiple types of victimization experiences as significant risk factors for co-occurring internalizing and externalizing problems among substance-using adolescents. It underscores the need to consider the contribution of psychological and social resources in protecting adolescents from developing severe co-occurring problems.

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TABLE 1

Descriptive Statistics

	Total Sample (<i>N</i> = 2,066)	Neither Internalizing nor Externalizing Problems ^a (<i>n</i> = 668)	Internalizing Only Problems ^b (<i>n</i> = 232)	Externalizing Only Problems ^c (<i>n</i> = 494)	Co-occurring Internalizing and Externalizing Problems ^d (<i>n</i> = 672)	<i>p</i>
Gender <i>n</i> (%)						
Males	1,429 (69.2)	546 (38.2) ^e	123 (8.6) ^e	408 (28.6) ^e	352 (24.6) ^e	.00
Females	637 (30.8)	122 (19.2)	109 (17.1)	86 (13.5)	320 (50.2)	
Age (<i>M, SD</i>)	15.6 (1.22)	15.6 (1.21) ^c	15.9 (1.14) ^{c,d}	15.4 (1.19) ^{ab}	15.4 (1.26) ^b	.00
Single parent <i>n</i> (%)	1,071 (51.8)	349 (32.6)	133 (12.4)	261 (24.4)	328 (30.6)	<i>ns</i>
Race/ethnicity <i>n</i> (%)						
White	960 (46.5)	273 (28.4) ^e	107 (11.1)	215 (22.4)	365 (38.0) ^e	.00
Black	368 (17.8)	168 (45.7) ^e	34 (9.2)	100 (27.2)	66 (17.9) ^e	.00
Hispanic	291 (14.1)	101 (34.7)	41 (14.1)	73 (25.1)	76 (26.1)	<i>ns</i>
Other	447 (21.6)	126 (28.2)	50 (11.2)	106 (23.7)	165 (36.9)	.09
Substance use <i>n</i> (%)						
Use only	365 (17.7)	189 (51.8)	41 (11.2)	81 (22.2)	54 (14.8)	.00
Abuse	724 (35)	307 (42.4)	63 (8.7) ^e	216 (29.8) ^e	138 (19.1) ^e	.00
Dependence	977 (47.3)	172 (17.6) ^e	128 (13.1)	197 (20.2) ^e	480 (49.1) ^e	.00
Stressors (<i>M, SD</i>)	1.25 (1.59)	0.71 (1.15) ^{b-d}	1.49 (1.56) ^{a,c,d}	0.99 (1.33) ^{a,b,d}	1.89 (1.89) ^{a-c}	.00
Multiple types of victimization	467 (22.6)	86 (18.4) ^e	64 (13.7) ^e	83 (17.8) ^e	234 (50.1) ^e	.00
Global self-efficacy (<i>M, SD</i>)	6.25 (2.18)	6.58 (2.24)	6.16 (2.01)	6.24 (2.22)	5.96 (2.12)	.00
Self-efficacy: Substance use (<i>M, SD</i>)	4.16 (1.25)	4.50 (1.08) ^{b,d}	4.05 (1.26) ^{a,c,d}	4.41 (1.04) ^{b,d}	3.67 (1.37) ^{a-c}	.00
Emotional support (<i>M, SD</i>)	4.29 (1.62)	3.89 (1.77) ^{b-d}	4.36 (1.59) ^a	4.37 (1.57) ^a	4.59 (1.42) ^a	.00
Problem-solving support (%)	1,605 (77.7)	31.3	11.2	24.4	33.1	<i>ns</i>
Received support for victimization (%)	1,070 (51.8)	31.4	12.8	24.6	31.2	<i>ns</i>

Note. The *p* values are based on ANOVA and chi-square tests; *ns* refers to nonsignificant (i.e., *p* > .05). Superscript letters (a-d) refer to groups and show which groups were statistically significant from the group with the superscript. These differences were tested using Bonferroni post hoc test.

^aNeither group.

^bInternalizing-only group.

\$watermark-text

\$watermark-text

\$watermark-text

^cExternalizing-only group.

^dGroup with both internalizing and externalizing problems.

^eRefers to adolescents in the group being significantly different from adolescents in other groups. Statistically significant differences were examined using two-way chi-square tests.

TABLE 2

Intercorrelations Among the Study Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Multiple types of victimization (1)	1									
Global self-efficacy (2)	-.003	1								
Self-efficacy: substance use (3)	-.012**	0.15**	1							
Types of people available for emotional support (4)	0.05*	0.25**	0.02	1						
Available problem-solving support (5)	0.03	0.25**	0.09**	-.046**	1					
Received support for victimization (6)	0.01	0.09**	0.06**	0.18**	0.13**	1				
Co-occurring internalizing and externalizing problem (7)	0.203***	-.009	-.027***	0.13***	-.003	-.003	1			
Internalizing-only problem (8)	0.04	-.0014	-.003	0.02	0.01	0.05*	-.025***	1		
Externalizing-only problem (9)	-.008***	-.0002	0.11***	0.03	-.002	0.02	-.039***	-.019***	1	
Neither internalizing nor externalizing problem (10)	-.016***	0.10***	0.19***	-.017***	0.04	-.002	-.048***	-.025***	-.039***	1

* $p < .05$.

**

*** $p < .01$.

*** $p < .001$.

TABLE 3

Multinomial Logistic Regression Results

Variables	Co-occurring Internalizing and Externalizing Problems Versus Neither Internalizing nor Externalizing Problems <i>OR</i> (95% CI)	Co-occurring Internalizing and Externalizing Problems Versus an Internalizing Behavior Problem <i>OR</i> (95% CI)	Co-occurring Internalizing and Externalizing Problems Versus an Externalizing Behavior Problem <i>OR</i> (95% CI)
Model 1			
Gender	3.42 *** (2.57–4.55)	0.88 (0.64–1.21)	3.90 *** (2.90–5.25)
Age	0.86 ** (0.77–0.95)	0.72 *** (0.63–0.83)	1.02 (0.92–1.13)
Single parent	1.03 (0.94–1.12)	0.92 (0.83–1.02)	0.99 (0.92–1.09)
African American	0.77 *** (0.68–0.87)	0.87 (0.74–1.03)	0.83 ** (0.73–0.94)
Hispanic	0.91 (0.79–1.03)	0.83 * (0.71–0.97)	0.92 (0.81–1.06)
Other race	0.99 (0.89–1.11)	0.98 (0.86–1.12)	0.98 (0.88–1.09)
Substance abuse	1.25 ** (1.09–1.43)	1.20 * (1.01–1.43)	1.06 (0.92–1.22)
Substance dependence	2.13 *** (1.88–2.42)	1.44 *** (1.23–1.68)	1.54 *** (1.35–1.77)
Stressors	1.55 *** (1.41–1.70)	1.10 * (1.00–1.21)	1.30 *** (1.19–1.42)
Multiple victimization	1.31 *** (1.18–1.46)	1.08 (0.96–1.21)	1.22 *** (1.10–1.35)
Model 2			
Gender	3.05 *** (2.27–4.09)	0.83 (0.60–1.15)	3.67 *** (2.71–4.97)
Age	0.88 (0.79–0.99)	0.73 ** (0.64–0.84)	1.05 (0.94–1.16)
Single parent	1.03 (0.95–1.13)	0.92 (0.83–1.03)	0.99 (0.92–1.09)
African American	0.80 ** (0.71–0.92)	0.88 (0.74–1.05)	0.83 ** (0.73–0.95)
Hispanic	0.95 (0.82–1.09)	0.83 * (0.71–0.97)	0.89 (0.78–1.03)
Other race	1.01 (0.90–1.14)	0.98 (0.85–1.12)	0.97 (0.87–1.08)
Substance abuse	1.21 *** (1.06–1.39)	1.18 (0.99–1.40)	1.03 (0.89–1.19)
Substance dependence	1.92 *** (1.68–2.19)	1.36 *** (1.16–1.59)	1.41 *** (1.23–1.62)
Stressors	1.55 *** (1.40–1.71)	1.10 (1.01–1.21)	1.31 *** (1.19–1.43)
Multiple victimization	1.31 *** (1.17–1.46)	1.06 (0.95–1.19)	1.21 *** (1.09–1.34)
Global self-efficacy	0.86 *** (0.81–0.91)	0.96 (0.89–1.04)	0.96 (0.90–1.02)
Self-efficacy (Substance abuse)	0.71 *** (0.63–0.79)	0.88 * (0.77–0.99)	0.73 *** (0.65–0.82)
Sources for emotional support	1.33 *** (1.21–1.47)	1.11 (0.99–1.25)	1.08 (0.98–1.19)
Problem-solving support	0.69 (0.48–0.99)	1.03 (0.67–1.58)	0.71 (0.49–1.03)
Received support for VICTIMIZATION	0.91 (0.70–1.19)	0.65 ** (0.47–0.89)	0.83 (0.64–1.08)

Note. Include random effects for site to site variability.

* $p < .05$.

** $p < .01$.

*** $p < .001$.