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Early Maladaptive Schemas among Young Adult Male Substance Abusers: A Comparison with a Non-Clinical Group

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Abstract

Early maladaptive schemas are rigidly held cognitive and behavioral patterns that guide how individuals encode and respond to stimuli in their environments (Young, 1994). Research has examined the early maladaptive schemas of substance abusers, as schemas are believed to underlie, perpetuate, and maintain problematic substance use. To date, research has not examined whether young adult male substance abuse treatment seekers (ages 18 to 25) report greater early maladaptive schema endorsement than a non-clinical comparison group. The current study extended the research on substance use and schemas by comparing the early maladaptive schemas of young adult male residential substance abuse patients ($n = 101$) and a group of non-clinical male college students ($n = 175$). Results demonstrated that the substance abuse group scored higher than the non-clinical comparison group on 9 of the 18 early maladaptive schemas. Implications of these findings for future research and substance use treatment programs are discussed.

Keywords

Early maladaptive schemas; substance use; clinical; young adult

1. Introduction

Substance use and abuse is a prevalent problem among young adult men, with a number of associated personal and societal consequences. Men aged 18–25 have a higher prevalence of substance use than any other age group (Johnston, O'Malley, Bachman, & Schlenberg, 2011; SAMSHA, 2010), making research on risk and protective factors for substance use among this population extremely important. Recent research has begun to examine early maladaptive schemas as a possible risk factor for the initiation and maintenance of substance abuse (Ball, 1998; 2007; Roper, Dickson, Tinwell, Booth, & McGuire, 2010; Young, Klosko, & Weishaar, 2003). Although research has demonstrated that early maladaptive schemas are prevalent among individuals seeking substance use treatment (Brotchie, Meyer, Copello, Kidney, & Waller, 2004; Shorey, Anderson, & Stuart, 2011; 2012), we are unaware of any research that has examined whether young adult male substance abusers report

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greater early maladaptive schema endorsement than a non-clinical comparison group. Knowing whether young adult male substance abusers score higher on early maladaptive schemas than non-clinical controls could provide useful information for the treatment of substance use within this vulnerable population, such as by informing treatment providers on the specific early maladaptive schemas that may underlie or perpetuate substance abuse. Using pre-existing patient records from an inpatient substance use facility and a comparison group of non-treatment seeking college students, the current study examined differences in early maladaptive schemas among these two groups of young men.

1.1 Early Maladaptive Schemas

Schemas, broadly defined, are cognitive structures that guide how individuals encode, screen, interpret, and respond to stimuli in their environment (Beck, 1967; Young et al. 2003). Schemas can be either positive or negative (Beck, 1967) and individuals often have schemas that surround many domains of their lives. In the current study, we focused on early maladaptive schemas due to their relevance to chronic mental health problems. Defined as “self-defeating emotional and cognitive patterns that begin early in our development and repeat throughout life” (Young et al., 2003, p. 7), early maladaptive schemas are theoretically believed to develop during early childhood, particularly in the presence of toxic or traumatic experiences usually involving one’s family of origin or primary caretakers (Young, 1994). Early maladaptive schemas are theorized to be perpetuated throughout the lifespan, are pervasive and highly resistant to change, and often generate high levels of negative affect, self-defeating behavioral patterns, and interfere with meeting one’s basic needs for connection, autonomy, and self-expression (Young et al., 2003). In fact, early maladaptive schemas are stable across multiple years (Riso et al., 2006) and are theoretically believed to be underlying vulnerabilities for the maintenance of persistent clinical problems (Young et al., 2003). For instance, early maladaptive schemas have been demonstrated to be highly relevant to a range of clinical problems, including depression (Riso et al., 2006), eating disorders (Waller, Meyer, & Ohanian, 2001), posttraumatic stress disorder (Cockram, Drummond, & Lee, 2010), and personality disorders (Ball & Cecero, 2001; Giesen-Bloo et al., 2006).

Young (1994) first proposed 16 rationally derived early maladaptive schemas. Since this time, an abundance of research has examined early maladaptive schemas, with current conceptualizations of early maladaptive schemas consisting of 18 potential schemas (Young et al., 2003). Young and colleagues’ (2003) 18 early maladaptive schemas fall under five distinct schema domains. These domains include: *disconnection and rejection*, which is a fear that one’s basic needs for safety, stability, empathy, acceptance, and warmth will not be met by others (schemas of emotional deprivation, abandonment, mistrust/abuse, social isolation, and defectiveness); *impaired autonomy and performance*, a belief that one cannot survive or function independent of other people (schemas of failure, dependence, vulnerability, and enmeshment); *impaired limits*, a lack of long-term goal setting and belief that one lacks responsibility (schemas of entitlement and insufficient self-control); *other directedness*, which is an over focus on meeting the needs of other people, usually at the expense of not meeting one’s own needs (schemas of subjugation, self-sacrifice, and approval-seeking); and *overvigilance and inhibition*, which includes beliefs that one must suppress their own feelings/thoughts and have excessively high standards of behavior (schemas of emotional inhibition, unrelenting standards, negativity/pessimism, and punitiveness) (Young et al., 2003).

1.2 Early Maladaptive Schemas and Substance Use

Ball (1998; 2007) has extended Young’s (1994 Young’s (2003) conceptualization of early maladaptive schemas as risk factors for mental health problems and described the relevance

of schemas to substance abuse. Ball (1998) suggested that early maladaptive schemas may underlie the development and maintenance of substance abuse, as both early maladaptive schemas and substance use are chronic, enduring problems. Moreover, Ball (1998) postulated that substance use may be one mechanism through which individuals attempt to avoid the negative beliefs and feelings associated with early maladaptive schemas. Ball (1998) further discussed the relevance of treating early maladaptive schemas among substance users and even developed a manualized therapy that combines aspects of relapse prevention (Marlatt & Gordon, 1985) and schema therapy (Young et al., 2003), which he termed Dual Focused Schema Therapy (DFST). Preliminary research has demonstrated that substance use treatment that concurrently focuses on targeting and modifying early maladaptive schemas, namely DFST, results in improved substance use outcomes when compared with traditional 12-step therapy (Ball, 2007).

Since Ball (1998) proposed the relevance of early maladaptive schemas to substance use, a number of studies have also examined differences between adult substance abusers and non-clinical comparisons on early maladaptive schemas. For instance, Brotchie and colleagues (2004), using a sample of male and female adult alcohol and opiate abusers who were in substance abuse treatment at the time of the study ($n = 97$), demonstrated that the substance abuse groups scored higher on 11 of 15 early maladaptive schemas assessed than a non-clinical comparison group ($n = 87$) of adults (this study utilized an earlier conceptualization of Young's schemas, which contained only 15 schemas). The groups did not differ on the schemas of self-sacrifice, unrelenting standards, failure, and entitlement. Roper and colleagues (2010), using a sample of male and female adult alcohol abusers recruited from a substance abuse treatment facility ($n = 50$), demonstrated that the clinical group scored higher on 14 of the 15 early maladaptive schemas than a non-clinical comparison group of adults ($n = 50$), with no difference between groups on the schema of unrelenting standards. Shorey and colleagues (2011) demonstrated that male and female adult treatment seeking substance abusers ($n = 40$) scored higher on 5 of the 18 early maladaptive schemas than their non-treatment seeking intimate partners ($n = 40$), with the intimate partners scoring higher on the schema of self-sacrifice. Thus, studies with adult substance abusers demonstrates that they score higher on the majority of early maladaptive schemas than non-clinical comparisons, with research suggesting limited differences in the schemas of self-sacrifice and unrelenting standards. Still, generalizing these findings to young adult male substance abusers is difficult.

To date, we are aware of only one study that has examined differences in young adult substance abusers and a non-clinical comparison group. Examining a sample of treatment seeking young adult female substance abusers ($n = 180$) and non-clinical comparisons ($n = 284$), Shorey, Stuart, and Anderson (in press) demonstrated that the substance abuse group scored higher on 16 of the 18 early maladaptive schemas even after controlling for demographic differences between the two groups. The only early maladaptive schemas that did not differ between groups were self-sacrifice and unrelenting standards, which did not differ between adult substance abusers and non-clinical comparison groups in other studies (Brotchie et al., 2004; Roper et al., 2010). However, generalizing these findings to young adult male substance abusers is problematic for a number of reasons. First, research has demonstrated that female treatment seeking substance abusers score higher on the majority of early maladaptive schemas than male substance abusers (Shorey, Anderson et al., 2012; Shorey, Stuart, & Anderson, 2012). Moreover, females often enter substance abuse treatment with more co-morbid mental health problems than male substance users (Foster, Peters, & Marshall, 2000), and it is possible that early maladaptive schemas are more relevant for female substance abusers than male substance abusers (Shorey, Anderson et al., 2012; Shorey, Stuart et al., 2012). Thus, it is possible that young adult treatment seeking male substance abusers may not differ from non-clinical young adult males on early

maladaptive schemas to the same degree as their female counterparts. Therefore, it is clear that research is needed to determine whether young adult male substance abusers score higher than non-clinical comparisons on early maladaptive schemas, as this information could provide important information for substance use treatment and prevention.

1.3 Current Study

To our knowledge, there is no known research examining differences in early maladaptive schemas among young adult male substance abusers and non-clinical comparisons. Thus, the current study expanded upon previous research by examining differences in schemas among a clinical and non-clinical group of young adult men. Using pre-existing patient records from an inpatient young adult substance use facility and a comparison group of male college students, we examined the relation between substance use and early maladaptive schemas and whether the two groups differed on early maladaptive schemas. Based on previous research with adult substance abusers and non-clinical comparisons (Brotchie et al., 2004; Roper et al., 2010; Shorey et al., in press), we hypothesized that the young adult substance abuse group would score significantly higher on the majority of maladaptive schemas, but not higher on the early maladaptive schemas of self-sacrifice and unrelenting standards.

2. Method

2.1 Participants

The current study involved two groups of participants. Pre-existing patient records from a Young Adult (YA) inpatient substance use treatment program located in the Southeastern United States were examined for the clinical substance abuse group of young adult men ($n = 101$). The non-clinical control group ($n = 175$) consisted of male undergraduate psychology students from a large Southeastern university located in the United States. For the substance abuse group, the mean age of patients was 21.84 ($SD = 1.98$) and the majority of patients were non-Hispanic Caucasian (95.0%), with the remainder indicating an African American ethnicity. For the substance abuse sample, the mean number of years of education completed was 12.40 ($SD = 1.20$). For the college student sample, the mean age of males was 18.87 ($SD = 2.00$) and the majority were non-Hispanic Caucasian (91.4%), with 4.6% reporting an Asian American ethnicity, 2.9% Hispanic, and 1.1% African American. For the college student sample, the mean number of years of education completed was 12.37 ($SD = .72$). None of the college student males reported having ever sought treatment for an alcohol or drug problem.

2.2 Procedures

For the substance abuse treatment seeking sample, pre-existing patient records were reviewed from the substance use treatment facility. Patient records were searched from May 2011 to April 2012. May 2011 was chosen as the start date for chart reviews because this is when the substance use treatment facility began administering standardized substance use self-report measures to all patients at intake to the treatment facility (discussed in more detail below). There were no inclusion/exclusion criteria for the substance abuse group. The substance use treatment facility is an approximately 28 to 30-day residential program that is guided by the traditional 12-step model. The substance use facility also places an emphasis on the identification and treatment of patients' early maladaptive schemas. The YA facility only admits patients into treatment if they have a primary substance use disorder diagnosis and are between the ages of 18 and 25. Upon intake into the treatment facility, and after medical detoxification when applicable, patients complete a number of self-report measures (discussed below). Substance use diagnoses, which are based on the criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision (DSM-IV-TR; American Psychiatric Association, 2000), are made through treatment team

consultation, which includes a psychiatrist, a Ph.D. Licensed Psychologist, a general physician, and substance use counselors.

For the non-clinical comparison group of undergraduate college students, all self-report measures were completed through an online survey website that uses encryption to protect the confidentiality of responses. Students were recruited from psychology undergraduate courses, as all students in psychology courses at the university where this study was conducted can earn course credit in return for research participation. In order to be eligible to participate, students had to be 18 years of age or older. Students were first provided with an informed consent that they also completed online. Upon providing informed consent, students completed all measures of interest to the current study. Once all surveys were finished, a referral list for local mental health services was provided and students received partial course credit in their psychology course for their participation. All study procedures were approved by the Institutional Review Board of the first author.

2.3 Measures

2.3.1 Demographics—The non-clinical comparison group of college students was asked to provide their age, gender, race, and academic level. The college student group was also asked to indicate whether they had ever received treatment for an alcohol or drug problem in their lifetime. For the clinical substance abuse group, pre-existing patient records were reviewed for relevant demographic information.

2.3.2 Early Maladaptive Schemas—The Young Schema Questionnaire – Long Form, Third Edition (YSQ-L3; Young & Brown, 2003) was used to examine the early maladaptive schemas of both groups. This 232-item self-report measure is designed to examine the 18 early maladaptive schemas identified by Young and colleagues (2003). Both groups answered each question using a six point scale (*1 = completely untrue of me; 6 = describes me perfectly*) to indicate how much they believe each item described themselves. For each early maladaptive schema, a score of 4 or greater for each item contributes to the total score of each specific schema, since a response of 4 or greater is indicative that that particular item may be representative of a maladaptive belief and/or behavior. Scores of 1, 2, or 3 are recoded into “0” as they are not indicative of clinically significant early maladaptive schema endorsement. Thus, total scores for each early maladaptive schema are calculated by summing the responses rated as a 4, 5, or 6 for all items associated with each specific schema. For example, if a participant scores a “4” on one item of the abandonment schema, and the remaining sixteen items are scored a “3”, the total score for the schema is a “4.” This scoring method is consistent with that recommended by Young and Brown (2003) and that used in previous research with early maladaptive schemas and substance abuse (Shorey et al., 2011; 2012; in press).

The number of items and score ranges for each of the 18 early maladaptive schemas on the YSQ-L3 are: emotional deprivation (9 items; score range = 0–54), abandonment (17 items; score range = 0–102), mistrust/abuse (17 items; score range = 0–102), social isolation (10 items; score range = 0–60), defectiveness (15 items; score range = 0–90), failure (9 items; score range = 0–54), dependence (15 items; score range = 0–90), vulnerability (12 items; score range = 0–72), enmeshment (11 items; score range = 0–66), subjugation (10 items; score range = 0–60), self-sacrifice (17 items; score range = 0–102), emotional inhibition (9 items; score range = 0–54), unrelenting standards (16 items; score range = 0–96), entitlement (11 items; score range = 0–66), insufficient self-control (15 items; score range = 0–90), approval-seeking (14 items; score range = 0–84), negativity/pessimism (11 items; score range = 0–66), and punitiveness (15 items; score range = 0–90) (Young & Brown,

2003). The YSQ-L3 has demonstrated good factor structure (Saariaho, Saariaho, Karila, & Joukamaa, 2009), and reliability (Cockram et al., 2010).

2.3.3 Alcohol Use—Past year alcohol use was assessed using The Alcohol Use Disorders Identification Test (AUDIT; Saunders, Asaland, Babor, de la Fuente, & Grant, 1993). The AUDIT consists of 10-items that examine the intensity and frequency of alcohol use, symptoms that might indicate dependence or tolerance to alcohol, and negative consequences associated with alcohol use. The AUDIT has demonstrated a greater capability, when compared to other measures of alcohol use and problems, to identify individuals with a likely alcohol use problem (Reinert & Allen, 2002). In addition, the AUDIT has shown good reliability and validity across multiple populations (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). A score of 8 or greater on the AUDIT is indicative of hazardous drinking (Babor et al., 2001; Saunders et al., 1993), which refers to a pattern of alcohol use that increase the chances of negative consequences for the self and others (Babor et al., 2001).

2.3.4 Drug Use—Past year drug use was assessed using the Drug Use Disorders Identification Test (DUDIT; Stuart, Moore, Kahler, & Ramsey, 2003; Stuart, Moore, Ramsey, & Kahler, 2004). The DUDIT contains 14 questions and is modeled after the AUDIT in that it assesses the frequency and intensity of drug use and symptoms that may be indicative of tolerance or dependence. The DUDIT examines the use of 7 different classes of drugs (cannabis, cocaine, hallucinogens, stimulants, sedatives/hypnotics/anxiolytics, opiates, and other substances [e.g., steroids, inhalants]). The DUDIT, unlike the AUDIT, does not have a standardized cutoff score to indicate the presence of hazardous/harmful drug use. The DUDIT has demonstrated good reliability and validity across multiple samples (Stuart et al., 2004; 2008).

3. Results

We conducted all analyses using SPSS version 18.0. For the substance abuse sample, the most common primary diagnosis was polysubstance dependence (42.6%; $n = 43$), followed by opioid dependence or abuse (38.6%; $n = 39$), alcohol dependence or abuse (10.9%; $n = 11$), cannabis dependence (3%; $n = 3$), cocaine dependence (2%; $n = 2$), sedative/hypnotic/anxiolytic dependence (2%; $n = 2$), and amphetamine dependence (1%; $n = 1$).

We first examined differences among groups on their AUDIT and DUDIT scores. Results demonstrated that, as expected, the substance abuse sample scored higher on the AUDIT ($M = 9.54$; $SD = 10.05$) than the non-clinical comparison group ($M = 6.02$; $SD = 6.82$), $t(273) = 3.44$, $p < .01$, $d = .41$. Similarly, the substance abuse sample scored higher on the DUDIT ($M = 30.56$; $SD = 13.72$) than the non-clinical comparison group ($M = 2.02$; $SD = 4.42$), $t(273) = 25.31$, $p < .001$, $d = 2.80$. From the college student comparison group, 36% ($n = 63$) scored 8 or higher on the AUDIT, indicating the presence of hazardous/harmful drinking. From the substance abuse sample, 41.5% ($n = 42$) scored 8 or higher on the AUDIT, indicating the presence of hazardous/harmful drinking. A chi-square analysis did not demonstrate a significant difference between the two groups on the presence of hazardous drinking, $\chi^2 = .97$ (1), $p > .05$. Thus, while an equal number of substance abuse treatment seekers and college students met the cutoff score for hazardous drinking, the substance abuse group had more severe alcohol problems as defined by the AUDIT, suggesting that their hazardous drinking results in more negative consequences.

Next, we examined whether there were any differences between the two groups on demographic characteristics. Results demonstrated that the two groups differed on age, with the substance abuse sample being older ($M = 21.84$; $SD = 1.98$) than the non-clinical

comparison group ($M = 18.87$; $SD = 2.00$), $t(272) = 11.86$, $p < .001$. The two groups did not significantly differ from each other on number of years of education completed, $t(272) = .28$, $p > .05$, or on race, $\chi^2 = 7.63$ (3), $p > .05$.

Lastly, we examined whether the two groups differed on the 18 early maladaptive schemas using Analysis of Covariance (ANCOVA) tests for each of the 18 schemas to determine which schemas significantly differed between the groups, after controlling for the difference in age between groups. We utilized a Bonferroni correction to reduce our risk of type 1 error, setting our alpha level to .003. As displayed in Table 1, the groups significantly differed on 9 of the 18 early maladaptive schemas, with the clinical substance abuse group scoring higher than the non-clinical control group on the 9 early maladaptive schemas. The early maladaptive schemas that differed between the groups were abandonment, mistrust/abuse, defectiveness, failure, dependence, vulnerability, enmeshment, insufficient self-control, and negativity/pessimism. The non-clinical control group did not score significantly higher than the substance abuse group on any early maladaptive schema.

Effect size differences (d) between the substance abuse group and the non-clinical comparison group on early maladaptive schemas were also calculated following the recommendations of Cohen (1988). This was done by comparing the mean schema scores of the two groups, divided by their pooled standard deviations (Cohen, 1988). As discussed by Cohen (1988), a small effect size difference should be interpreted as a d of .20, a medium effect size difference as a d of .50, and a large effect size as a d of .80 or greater. As displayed in Table 1, the largest effect size differences between groups were for the early maladaptive schemas of insufficient self-control ($d = 1.17$), enmeshment ($d = .73$), abandonment, ($d = .69$), dependence ($d = .63$), and mistrust/abuse ($d = .62$), which all fell into the large or medium ranges for effect sizes.

4. Discussion

Previous research has demonstrated that adult substance abusers scored higher on the vast majority of early maladaptive schemas than non-clinical comparisons (Brotchie et al., 2004; Roper et al., 2010). In addition, young adult female substance abusers scored higher on the majority of early maladaptive schemas than non-clinical comparisons (Shorey et al., in press). However, to date, no known research has examined whether young adult male substance abusers, the age group at greatest risk for problematic substance use, score higher on the majority of early maladaptive schemas relative to non-clinical comparisons. Knowing this information may help to inform theoretical conceptualizations of substance abuse and early maladaptive schemas (i.e., Ball, 1998), and whether early maladaptive schemas should be targeted in young adult substance use treatment. The current study examined differences between young adult male substance abusers and non-clinical comparisons on early maladaptive schemas, with results providing support for broad differences in schemas between groups.

Findings demonstrated that the young adult male substance abuse group scored significantly higher than the non-clinical comparison group on 9 of the 18 early maladaptive schemas. While the number of differences in early maladaptive schemas found in this study is smaller than that found with adult substance abusers (Brotchie et al., 2004; Roper et al., 2010) and young adult female substance abusers (Shorey et al., in press), these findings still suggest that early maladaptive schemas are more likely to be present in young adult males seeking substance use treatment. It is possible that young adult male substance abusers have struggles with more specific early maladaptive schemas (i.e., insufficient self-control, abandonment), whereas adult substance abusers and young adult female substance abusers are more likely to have broad struggles with the majority of early maladaptive schemas. This

would be consistent with previous research that has demonstrated that young adult female substance abusers score significantly higher than young adult male substance abusers on the majority of early maladaptive schemas (i.e., 11 of 18 schemas; Shorey, Stuart et al., 2012) and higher than non-substance abusing young adults (i.e., 16 of 18 schemas; Shorey et al., in press). Thus, the presence of certain early maladaptive schemas among young males may indicate a potential risk factor for, or indicator of, problematic substance use.

The specific early maladaptive schemas that were different between the groups included insufficient self-control, enmeshment, abandonment, dependence, mistrust/abuse, defectiveness, failure, vulnerability, and negativity/pessimism. All of these differences fell into the large or medium range for effect size differences, suggesting robust differences between groups. While it is outside the scope of this paper to discuss specific reasons for why each of these early maladaptive schemas may have differed between groups (the interested reader is referred to Young et al., 2003 for a detailed discussion of each schema as related to mental health), we will discuss the three largest differences between groups: insufficient self-control, enmeshment, and abandonment.

We have previously discussed in-depth the early maladaptive schema of insufficient self-control as related to substance abuse (e.g., Shorey et al., 2012; in press). Briefly, this schema is characterized by impulsive behavior, low frustration tolerance, and an inability to delay gratification (Young et al., 2003). These are characteristics that are commonly cited in the literature as being related to problematic substance use, such as impulsivity broadly defined (Dawe & Loxton, 2004) and distress tolerance (Leyro, Zvolensky, & Bernstein, 2010). Thus, the insufficient self-control schema may represent a pervasive pattern of cognitive beliefs and behaviors that underlie impulsiveness and low distress tolerance, increasing the risk for substance use. The enmeshment schema is characterized by an excessive emotional involvement with one or more significant people (e.g., parents), which often hinders social development, individuation, and identity development, often producing feelings of emptiness (Young et al., 2003). This early maladaptive schema shares considerable overlap with the concept of codependency in the substance abuse literature, and codependency is a known correlate of substance use (Rotunda & Doman, 2001).

The abandonment early maladaptive schema is characterized by a pervasive belief that close significant others will emotionally or physically leave and be unable to provide support, nurturance, and connection (Young et al., 2003). This early maladaptive schema is often associated with feelings of worthlessness for not being “good enough” to keep close people in one’s life (Young et al., 2003). We have previously discussed (i.e., Shorey et al., in press) that this early maladaptive schema is often a result of abuse and neglect experiences during childhood, and substance abusers report more experiences with abuse than non-substance abusers (Simpson & Miller, 2002). Thus, it is possible that this early maladaptive schema was more prevalent among the substance abuse group due to increased neglect and abuse experiences during childhood, which would be consistent with schema theory (Young et al., 2003). However, it is also possible that this schema increased during active periods of substance abuse and future research should longitudinally examine how early maladaptive schemas influence, or are influenced by, substance abuse.

While the current study found differences between the substance abuse group and the non-clinical comparison group in early maladaptive schemas, we did not examine potential reasons as to why these differences existed. That is, we did not assess the childhood and developmental experiences that may have led to the development of schemas, and whether the substance abuse group may have had more noxious and traumatic events during their development, which are theorized to underlie the onset of early maladaptive schemas (Young et al., 2003). Future research would benefit from comparing groups on childhood

abuse and other traumatic/noxious experiences during childhood (e.g., car accidents; crime exposure), whether their parents abused substances, and other theoretically relevant characteristics and events that may contribute to the development of early maladaptive schemas. Knowing the developmental pathways to early maladaptive schemas for substance abusers could provide valuable information that could aid in the prevention and treatment of substance abuse.

4.1 Clinical Implications

Although our findings should be considered preliminary until they are replicated, in combination with existing research on early maladaptive schemas among substance abusers, the current study could have important implications for the treatment of substance use among young adult males. First, our findings speak to the importance of considering the possibility that early maladaptive schemas may be present among young adult male substance abusers, and assessing schemas and determining the specific schemas individuals identify could aid in the development of treatment planning. For instance, Young and colleagues (2003) discuss the treatment approaches that may be best suited for each individual schema, allowing providers to tailor their interventions to the specific needs of each client and their early maladaptive schema(s). In addition, our findings are consistent with the recommendations of Ball (1998) that a dual-focus on both substance use and early maladaptive schemas may be warranted. This recommendation is further supported due to the broad differences in early maladaptive schemas between the substance use and non-clinical groups. Substance use treatment programs could follow the recommendations of Ball's DFST and Young and colleagues' Schema Therapy when treating young adult male substance abusers. That is, the use of cognitive, behavioral, and experiential techniques could be used to target and modify early maladaptive schemas.

4.2 Limitations

The current study has several limitations that should be considered when interpreting its findings. The cross-sectional nature of the current study precludes the determination of causality among study variables. Future research should examine whether early maladaptive schemas preceded the initiation of problematic substance use, maintained substance use, and/or developed as a result of substance use. Moreover, the sample of participants was primarily non-Hispanic Caucasian in ethnicity, limiting the generalizability of findings to more diverse samples. The substance abuse group was highly educated, which limits the generalizability of findings to similarly educated substance abusing samples. The lack of standardized diagnostic interviews for assessing substance use among the sample of patients, while a limitation of the substance use facility, limits our ability to determine whether the substance use diagnoses were accurate. Future research should employ structured diagnostic interviews when assessing substance use diagnoses among treatment seeking young adults, as well as the non-clinical comparison group. Structured diagnostic interviews would also allow for the assessment of co-morbid mental health problems and their relation to early maladaptive schemas and substance use.

It is possible that fluctuations in state mood may have affected reports on the YSQ-L3. Previous research has demonstrated that certain schemas are rated more negatively under conditions of state negative affect (Stopa & Waters, 2005), and this may have affected reports in the current study. Although this is an empirical question yet to be answered, it is possible that the clinical group was under greater state negative affect while completing the YSQ-L3, due to seeking substance use treatment, and this may have contributed to their increased scores relative to the non-clinical comparison group on early maladaptive schemas. Our scoring method for the YSQ-L3, although consistent with previous research and the recommendations of the creators of the measure, may have artificially inflated

differences between groups. Previous research using different scoring procedures (i.e., summing all items and not recoding scores below 3) have found similar results obtain in the current study (Brotchie et al., 2004; Roper et al., 2010). Still, future research should compare scoring procedures to determine whether the scoring procedure used in the current study may artificially inflate differences between groups. Finally, we also only examined maladaptive, negative schemas, and future research should examine different theoretical models of schemas, such as positively-valanced schemas, and whether non-clinical comparisons report more adaptive schemas than substance abusers.

In summary, the current study is the first known investigation to compare the early maladaptive schemas of young adult male substance abusers to a non-clinical comparison group of young men. Consistent with previous research (Brotchie et al., 2004; Roper et al., 2010; Shorey et al., in press), the substance abuse group scored higher on 9 of the 18 early maladaptive schemas, and the non-clinical group did not score higher on any early maladaptive schema. In combination with previous research and theoretical conceptualizations of early maladaptive schemas (Ball, 1998; Young et al., 2003), these findings provide further support for substance use treatment programs to target early maladaptive schemas. Replication of the current findings is warranted, and research is also needed to determine whether modifying early maladaptive schemas in substance use treatment results in better treatment outcomes for young adult male substance abusers.

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Table 1

Differences between Substance Abusers and Non-Clinical Comparisons on Early Maladaptive Schemas.

Early Maladaptive Schema	Substance Abusers (<i>n</i> = 101) <i>M</i> (<i>SD</i>)	Non-Clinical Comparison (<i>n</i> = 175) <i>M</i> (<i>SD</i>)	<i>F</i>	<i>p</i>	<i>d</i>
Emotional Deprivation	9.73 (12.97)	5.47 (10.28)	4.05	< .05	.36
Abandonment	25.54 (26.64)	10.57 (15.17)	34.21	< .001	.69
Mistrust/Abuse	28.86 (30.27)	13.52 (17.04)	21.27	< .001	.62
Social Isolation	13.08 (18.05)	6.40 (10.18)	13.56	< .01	.45
Defectiveness	16.21 (23.95)	5.81 (13.01)	18.55	< .001	.53
Failure	10.39 (14.75)	3.52 (8.80)	22.41	< .001	.56
Dependence	15.08 (20.04)	4.90 (10.86)	27.94	< .001	.63
Vulnerability	12.26 (17.14)	4.33 (7.96)	19.62	< .001	.59
Enmeshment	10.45 (13.71)	2.71 (5.86)	23.22	< .001	.73
Entitlement	14.99 (14.46)	11.06 (11.18)	2.46	> .05	.30
Insufficient Self-Control	33.66 (24.12)	10.26 (14.41)	76.96	< .001	1.17
Subjugation	9.87 (14.41)	5.92 (10.46)	6.80	< .05	.31
Self-Sacrifice	30.26 (27.02)	32.99 (22.55)	1.31	> .05	.10
Emotion Inhibition	14.01 (15.98)	10.26 (12.45)	6.06	< .05	.26
Unrelenting Standards	30.33 (25.70)	33.11 (22.94)	1.28	> .05	.11
Approval-Seeking	19.82 (22.13)	16.01 (17.18)	2.25	> .05	.19
Negativity/Pessimism	18.12 (20.04)	10.64 (14.16)	15.69	< .001	.43
Punitiveness	25.65 (20.53)	20.70 (19.96)	1.06	> .05	.24

Note: Results meeting the Bonferroni alpha level ($p < .003$) are highlighted in bold.