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Do Gender Differences in Depression Remain after Controlling for Early Maladaptive Schemas? An Examination in a Sample of Opioid Dependent Treatment Seeking Adults

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Abstract

The abuse of opioids is a serious and prevalent problem and research is needed on factors that may place individuals at risk for misusing opioids. Depression is a common co-morbid mental health problem among opioid users. Theory and research suggests that early maladaptive schemas may underlie mental health problems including depression and substance abuse. The current study sought to determine whether early maladaptive schemas were associated with depression among a treatment seeking sample of male and female opioid users (N = 194). We also examined whether depression, as assessed by the MMPI-2, varied by gender and whether gender differences in depression remained after controlling for early maladaptive schemas. Results showed that females scored significantly higher than males on 3 of the 5 early maladaptive schema domains, and that gender did not predict depression after controlling for schema domains. Early maladaptive schemas were also more strongly associated with depression for men than women. Implications of these findings for interventions and future research are discussed.

Keywords

Substance use; Opiates; Schemas; Minnesota Multiphasic Personality Inventory – 2; cognitive therapy

Males and females experience opioid abuse and dependence at alarming rates, with a number of associated devastating personal and societal consequences (SAMSHA, 2010). Thus, there is a need for the examination of factors that may cause or perpetuate opioid use, as these factors could become targets of intervention efforts aimed at reducing and/or eliminating opioid use. Depression is overrepresented in opioid users and female opioid users often have greater levels of depression than male users (Darke et al., 2009). Recent theory (Ball, 1998; Young, Klosko, & Weishaar, 2003) and research (Brotchie, Meyer, Copello, Kidney, & Waller, 2004) have emphasized the possible role of early maladaptive schemas in the development and maintenance of mental health problems, including depression. The current study sought to examine the relations between depression and early maladaptive schemas in an adult sample of treatment seeking opioid users. The current study also examined gender differences in depression and whether controlling for early maladaptive schemas reduced gender differences in depression.

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Opioid use is a prevalent problem in the United States and throughout the world (SAMSHA, 2010). For instance, it is estimated that, worldwide, the annual prevalence rate of illicit opioid use for adults is 0.4% (United Nations Office of Drugs & Crime, 2008). However, the lifetime prevalence rate of opioid use is much higher, with estimates ranging from 1.7% to 18.7% depending on the type of opioid used (Johnston, O'Malley, Bachman, & Schulenberg, 2008). In addition, among American adults specifically, 2.2 million adults initiated non-prescription use of opioids in 2002, which is more than four times the initiation rate of 1990 (NIDA, 2005). Individuals dependent on opioids are at an increased risk for experiencing a multitude of negative consequences relative to non-users, including, but not limited to, mortality, crime, increased HIV risk, unemployment, and legal issues (Haug, Sorensen, Gruber, & Song, 2005). Thus, it is clear that opioid use is a prevalent and devastating problem with annual prevalence rates of opioid use increasing.

A number of efforts have focused on reducing the likelihood that individuals will use opioids, as well as reducing the frequency of opioid use once it has been initiated. Unfortunately, treatment of opioid dependence has historically had limited success, with large percentages of individuals treated relapsing and few remaining abstinent over the long-term (Dekimpe, Van De Gucht, Hanssens, & Powers, 1998; Gossop, Stewart, Browne, & Marsden, 2002; Veilleux, Colvin, Anderson, York, & Heinz, 2010). In an effort to increase treatment effectiveness for opioid use, researchers have advocated for the examination of co-occurring mental health problems (Veilleux et al., 2010), as opioid dependent individuals often have co-occurring, non-substance related mental health issues (Strain, 2002), such as depression (Darke et al., 2009; Torrens, Fonseca, Matueu, & Farre, 2005; Veilleux et al., 2010). Furthermore, the concurrent treatment of opioid dependence and other mental health problems may lead to better treatment outcomes (Veilleux et al., 2010). Toward this end, recent research and theory has begun to investigate the early maladaptive schemas of substance users generally, and opioid users specifically.

Early Maladaptive Schemas

Early maladaptive schemas represent cognitive structures that guide how individuals encode, screen, interpret, and respond to stimuli in their environment (Beck, 1967; Young et al. 2003) and can be defined as “self-defeating emotional and cognitive patterns that begin early in our development and repeat throughout life” (Young et al., 2003, p. 7). Young et al. (2003) have proposed 18 early maladaptive schemas that individuals can possess, which surround domains of disconnection and rejection, impaired autonomy and performance, impaired limits, other directedness, and overvigilance and inhibition (Young et al., 2003). Table 1 presents descriptions of each schema domain and each individual early maladaptive schema. 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), although it is possible for schemas to develop during any stage of development (Young et al., 2003). Because early maladaptive schemas are core themes through which individuals interpret their environments, they often define how individuals process experiences and stimuli throughout their lives (Young et al., 2003).

Early maladaptive schemas are theorized to be perpetuated throughout the entire lifespan and often generate negative affect, self-defeating consequences, and interfere with meeting basic needs for connection, autonomy, and self-expression (Young et al., 2003). Thus, early maladaptive schemas are thought to be highly pervasive and resistant to change (Ball, 2007; Young et al., 2003) and are maintaining factors for persistent clinical disorders (Young et al., 2004). In fact, early maladaptive schemas are stable across multiple years (Riso et al., 2006). It has been proposed that early maladaptive schemas can be activated, or triggered, by every day moods and events, particularly moods and events that are perceived as

dysfunctional and emotionally distressing (Young et al., 2003). Schema activation, in turn, can result in highly dysfunctional behavior and coping responses (Ball, 1998; 2007; Young et al., 2003).

Early Maladaptive Schemas and Mental Health

A number of recent studies have examined the relationship between early maladaptive schemas and depression, as well as the relationship between early maladaptive schemas and substance use. A number of studies have demonstrated positive associations between early maladaptive schemas and depressive symptoms across a range of populations (e.g., Harris & Curtin, 2002; Wellburn, Coristine, Dagg, Pontefract, & Jordan, 2002). In addition, studies have shown that early maladaptive schemas are more prevalent in individuals with current or previous major depression when compared with individuals without a history of major depression (Halvorsen et al., 2009). Because early maladaptive schemas are believed to underlie chronic and relapsing mental health problems, and depression is one such disorder (Solomon et al., 2000), the examination of early maladaptive schemas in depression is warranted.

A number of recent investigations have also shown the high prevalence of early maladaptive schemas among substance users. Brotchie and colleagues (2004) found that adults diagnosed with opioid abuse reported greater levels of almost every early maladaptive schema than a non-clinical control group. Additionally, other researchers have shown that individuals diagnosed with alcohol abuse or dependence report greater early maladaptive schemas than non-clinical control groups (Brotchie et al., 2004; Roper, Dickson, Tinwell, Booth, & McGuire, 2010). In addition, Shorey, Anderson, and Stuart (2011) found that substance use treatment patients, which included individuals with alcohol, opioid, cannabis, and cocaine use disorder diagnoses, scored higher on a number of early maladaptive schemas relative to their non-treatment seeking intimate partners. There is also research to suggest that early maladaptive schemas may vary among male and female substance users. Shorey, Anderson, and Stuart (in press) found that adult inpatient women diagnosed with alcohol dependence scored significantly higher than adult male inpatients diagnosed with alcohol dependence on 14 of the 18 early maladaptive schemas.

Despite the increased research on early maladaptive schemas and mental health in recent years, we are unaware of any research that has examined the relations among schemas and depression in a sample of opioid users. Because research indicates that substance users have elevated levels of early maladaptive schemas and depression when compared with the general population, knowing whether early maladaptive schemas are associated with depression in this population may inform the treatment of opioid use. Since opioid use and depression are often both chronic conditions, targeting the underlying cognitive vulnerability to these disorders (i.e., schemas) may result in improved treatment outcomes. It will also be important for investigations to examine potential gender differences in the association between schemas and depression. Women are more likely to develop depression than men and often enter substance use treatment with more mental health problems than their male counterparts (Foster, Peters, & Marshall, 2000). Thus, knowing whether gender differences in depression remain despite the presence of early maladaptive schemas may further inform treatment programs.

Current Study

Thus, the current study sought to extend the findings of previous research on depression and early maladaptive schemas among substance users, specifically among adults diagnosed with opioid dependence. We sought to determine (1) whether males and females differed on early maladaptive schemas, (2) the relationship between depression and early maladaptive

schemas, and (3) whether gender differences in depression remained after controlling for early maladaptive schemas. Based on previous research it was hypothesized that women would score significantly higher than men on depression and the majority of early maladaptive schemas. Because this is the first known study to control for early maladaptive schemas when examining gender differences in depression among substance users, no definitive hypotheses were made for these associations.

Method

Participants and Procedures

Pre-existing patient records from an adult residential program (ARP), an inpatient substance use treatment program, located in the Southeastern United States, were reviewed for the current study. This treatment program is a 30-day residential program that is guided by the 12-step model and also places a heavy emphasis on the identification and treatment of patients' early maladaptive schemas. The treatment center admits patients into the facility only if they have a primary substance use disorder diagnosis and are approximately 20 to 25 years of age or older.

Upon admission to the treatment facility each patient completes an extensive intake assessment, which includes a number of self-report measures and semi-structured interviews. In consultation with a psychiatrist, a general physician, a Ph.D. Licensed Psychologist, and substance use counselors, substance use diagnoses are made based on the DSM-IV-TR criteria for mental health disorders (American Psychiatric Association, 2000). Patients completed study measures as part of their initial intake assessment and after medical detoxification, if applicable, which could have been as long as five days after admission to the treatment facility.

Patient records were searched from January 2005 to January 2010 to identify male and female patients with a primary diagnosis of opioid dependence with no co-morbid substance use disorders. This resulted in a total of 194 patients diagnosed with opioid dependence only. Slightly more than half of the patients were female (n = 98) and the mean age of patients was 36.1 (SD = 9.2; Range = 20-80). Ethnically, the majority of patients were non-Hispanic Caucasian (97.3%), with the remaining patients being African American (1.1%), and "other" (e.g., Multi-Racial, Native American, Hispanic, etc., 1.6%). At the time of admission to the treatment facility, 60.8 % were married, 21.7% were never married, 16.4% were divorced, and 1% indicated "other" (e.g., widowed, life partner, etc.). Almost half of the patients were employed full-time (45.4%) prior to admission into the treatment facility. Men and women did not significantly differ on any of the demographic variables. The demographic characteristics of this sample are highly representative of all patients admitted into the treatment facility.

Materials

Demographics—Upon admission to the treatment facility patients were asked to indicate their age, ethnicity, gender, occupational status, and relationship status.

Early Maladaptive Schemas—The Young Schema Questionnaire – Long Form, Third Edition (YSQ-L3; Young & Brown, 2003) was used to examine patients' early maladaptive schemas. The YSQ-L3 is the most up-to-date version of Young and colleagues schema conceptualization, as it is the only instrument to assess all 18 early maladaptive schemas (previous versions of the YSQ only assessed 14 or 15 schemas). The YSQ-L3 is 232-item self-report measure designed to assess 18 early maladaptive schemas identified by Young and colleagues (2003). Each question is scored on a six point scale (1 = completely untrue of

me; 6 = describes me perfectly) where individuals indicate how much each item describes themselves. A score of 4 or greater on each item contributes to the total score for each specific schema, as a response of 4 or greater is indicative that a particular item may be relevant to the individual and schema (Young & Brown, 2003). A total score for each early maladaptive schema is obtained by summing the number of responses rated as a 4, 5, or 6 for all items associated with each schema domain (or each individual schema). Score ranges for each schema domain (and each early maladaptive schema) are: ***disconnection & rejection***, 0-408 (emotional deprivation [0-54]; abandonment [0-102], mistrust/abuse [0-102], social isolation [0-60], and defectiveness [0-90]); ***impaired autonomy and performance***, 0-282 (failure [0-54], dependence [0-90], vulnerability [0-72], and enmeshment [0-66]); ***other directedness***, 0-246 (subjugation [0-60], self-sacrifice [0-102], and approval-seeking [0-84]); ***impaired limits***, 0-155 (entitlement [0-66] and insufficient self-control [0-90]); and ***overvigilence and inhibition***, 0-306 (emotional inhibition [0-54], unrelenting standards [0-96], negativity/pessimism [0-66], and punitiveness [0-90]) (Young & Brown, 2003; Young et al., 2003). The YSQ-L3 has demonstrated good factor structure in a Finnish pain patient sample (Saariaho, Saariaho, Karila, & Joukamaa, 2009), validity, and reliability (Cockram, Drummond, & Lee, 2010).

Depression—The Minnesota Multiphasic Personality Inventory, Second Edition (MMPI-2; Butcher et al., 1989) depression subscale was used in the current study. The MMPI-2 is one of the most widely used and researched instruments for assessing psychopathology in both general and clinical populations (Butcher & Williams, 2000; Greene, 2000) and has established reliability and validity across a wide range of populations (Butcher & Williams, 2000; Simms, Casillas, Clark, Watson, & Doebbeling, 2005). The MMPI-2 is scored and interpreted using *T* scores, with a score of 65 or higher on each subscale indicative of a potential problem (Butcher et al., 1989). For instance, a score of 65 or higher on the Depression subscale indicates that an individual may be suffering from symptoms that are consistent with Major Depressive Disorder (MDD).

Results

Gender Differences in Early Maladaptive Schemas and Depression

All statistical analyses were run using SPSS version 18.0. Differences between men and women on early maladaptive schema domains were examined using *t*-tests. These results are presented in Table 2. Due to the preliminary nature of this study, we did not perform a bonferroni correction. Effect sizes (*d*) were calculated by comparing the mean schema scores of men and women, divided by their pooled standard deviations (Cohen, 1988). As outlined by Cohen (1988), a small effect size is equal to a *d* of .20, a medium effect size is equal to a *d* of .50, and a large effect size is equal to a *d* of .80. Results showed that women scored significantly higher than men on 3 of the 5 schema domains, including disconnection and rejection, $t(192) = 3.077$, $p < .01$, impaired autonomy, $t(192) = 2.900$, $p < .05$, and other directedness , $t(192) = 3.774$, $p < .001$. Effect size estimates showed that the largest differences were in the schema domains of other directedness ($d = .53$), disconnection and rejection ($d = .41$), and impaired autonomy ($d = .40$). Additionally, women scored significantly higher ($M = 73.9$, $SD = 14.0$) than men ($M = 70.1$, $SD = 13.3$) on depression, $t(192) = 1.956$, $p = .05$; $d = .28$. A total of 62.5% ($n = 60$) of the men and 74.5% ($n = 73$) of the women had a score of 65 or greater on the depression subscale of the MMPI-2, which is the cutoff score for a likely clinically significant problem with depression.

Because there were differences between men and women on three schema domains, we examined which schemas were different among men and women within each of the three schema domains that differed among men and women. Using *t*-tests (see Table 2), results

showed that women scored significantly higher than men on 9 of the schemas, including abandonment, $t(192) = 3.615$, $p < .001$, defectiveness, $t(192) = 2.574$, $p < .05$, dependence, $t(192) = 2.418$, $p < .05$, emotional deprivation, $t(192) = 2.654$, $p < .01$, enmeshment, $t(192) = 2.970$, $p < .01$, failure, $t(192) = 2.118$, $p < .05$, self-sacrifice, $t(192) = 3.500$, $p < .01$, social isolation, $t(192) = 2.273$, $p < .05$, and subjugation, $t(192) = 4.373$, $p < .001$. Effect size estimates showed that the largest differences were in the schemas of subjugation ($d = .64$), abandonment ($d = .52$), self-sacrifice ($d = .50$), and enmeshment ($d = .43$).

Correlations among Schemas and Depression among Males and Females

Next we examined bivariate correlations between depressive symptoms and early maladaptive schema domains, and individual schemas, for males and females separately. These findings are presented in Table 3. For males, all of the schema domains were positively and significantly associated with depressive symptoms, and 11 of the 18 early maladaptive schemas were associated with greater depressive symptoms. The strongest correlations between depressive symptoms and early maladaptive schemas for males were with the schemas of dependence, failure, and negativity/pessimism (all $rs = .36$, $p < .001$). For females, only the schema domain of other directedness and the schemas of dependence and self-sacrifice were associated with depressive symptoms.

Early Maladaptive Schemas as a Predictor of Depressive Symptoms

We next examined whether the gender difference in depression remained after controlling for early maladaptive schemas. Analyses of Covariance (ANCOVAs) were conducted to examine whether controlling for schema domains reduced the gender difference in depression, with schema domains entered as the covariate. For the early maladaptive schema domain of disconnection and rejection, the schema domain, $F(1, 191) = 4.879$, $p < .05$, but not gender, $F(1, 191) = 2.101$, $p > .05$, was associated with depressive symptoms. For impaired autonomy, the schema domain, $F(1, 191) = 11.254$, $p < .01$, but not gender, $F(1, 191) = 1.633$, $p > .05$, was associated with depression. For impaired limits, the schema domain, $F(1, 191) = 5.195$, $p < .01$, but not gender, $F(1, 191) = 3.783$, $p < .05$, was associated with depression. For other directedness, the schema domain, $F(1, 191) = 9.726$, $p < .01$, but not gender, $F(1, 191) = .938$, $p < .05$, was associated with depression. Finally, for overvigilance and inhibition, the schema domain, $F(1, 191) = 5.124$, $p < .01$, but not gender, $F(1, 191) = 3.236$, $p < .05$, was associated with depression.

Discussion

Previous research has demonstrated the importance of both depression and early maladaptive schemas among opioid users, although no known study has examined the interrelations of depression and schemas among opioid users. Thus, the purpose of the present study was to examine depression and the early maladaptive schemas of adult treatment seeking opioid dependent men and women. Expanding upon previous research, the current study examined (1) gender differences in early maladaptive schemas, (2) the relations among depression and early maladaptive schemas and (3) whether gender differences in depression remained after controlling for early maladaptive schemas.

Consistent with previous research (Shorey et al., in press), women scored significantly higher than men on a number of schema domains and individual schemas, with men not scoring significantly higher than women on any of the schemas. This is the second study to find broad gender differences in early maladaptive schemas among individuals seeking substance use treatment, which raises the possibility that early maladaptive schemas may be more prevalent and relevant for women opioid users. Although this study demonstrated gender differences in schemas, we were not able to examine why these differences existed.

For instance, women are more likely than men to experience childhood abuse, particularly sexual abuse (Bolen & Scannapieco, 1999), and traumatic experiences are one reason why early maladaptive schemas are theorized to develop. Moreover, there is some research to suggest that women may have a higher biological vulnerability to the negative effects of stressful life events (Bianchin & Angrilli, 2011) and may be more emotionally reactive in general (Bradley, Codispoti, Sabatinelli, & Lang, 2001; Kring & Gordon, 1998), which may make them more vulnerable to develop early maladaptive schemas. Future research should examine the early life experiences that may be associated with increased schema endorsement and how they differ among men and women.

Findings showed that the largest differences between women and men, with women scoring higher, were with the schemas of subjugation, self-sacrifice, and abandonment, with effect sizes falling into the medium range for gender differences, all of which are schemas that are more relational focused in nature. This suggests that women with opioid dependence may be more likely to have early maladaptive schemas that focus on other people and their close relationships. The subjugation schema is characterized by surrendering control to other people, usually because one feels they are being coerced. Specifically, individuals often subjugate their needs (i.e., their preferences, desires) and/or their emotions because they believe these are not important to other people (Young et al., 2003), which often results in increased feelings of anger and resentment, which can be triggers for substance use (Young et al., 2003). Self-sacrifice is characterized by voluntarily and excessively meeting the needs of other people at the expense of meeting one's own needs, particularly one's emotional needs (Young et al., 2003). In essence, self-sacrificing behaviors take the focus away from one's own internal struggles. The abandonment schema is characterized by a belief that other people, particularly close others, will physically and/or emotionally “abandon” or leave them. Theoretically it is believed that traumatic childhood experiences, including neglect and abuse, may be particularly relevant to the development of this schema (Young et al., 2003). Additional research is needed to examine mechanisms underlying the associations between the schemas and opioid use, particularly among women.

Results also showed that controlling for early maladaptive schema domains resulted in gender no longer being associated with depressive symptoms, as women were more likely to endorse depressive symptoms. It should be noted, however, that the gender difference seen in depression was small ($d = .28$). Still, all five schema domains were significantly associated with depression above and beyond the effects of gender. While preliminary until replicated, these findings suggest that early maladaptive schemas may be a more relevant predictor of depressive symptoms for opioid users than one's gender. This finding is slightly surprising due to robust gender differences in depression typically seen, with women more likely to experience depression. However, early maladaptive schemas are theoretically believed to underlie chronic problems regardless of one's gender (Young et al., 2003), and depression is often a chronic, recurrent problem, particularly among substance users. Thus, these findings speak to the importance of considering early maladaptive schemas among opioid users, as treatment of schemas (discussed below) may result in better long-term outcomes for a range of problems, including depression and substance use.

Finally, our correlation findings showed that all five schema domains, and 11 of the 18 early maladaptive schemas, were associated with increased depressive symptoms for men. In contrast to their male counterparts, only one schema domain, and 2 of the 18 early maladaptive schemas, was associated with increased depressive symptoms for women. To our knowledge this is the first study to examine differences in relations among early maladaptive schemas and depressive symptoms in a clinical sample of substance users. Thus, these findings should be interpreted cautiously until they are replicated. Still, these findings suggest that early maladaptive schemas may be a more important predictor of

depressive symptoms for male opioid users than female opioid users, despite females scoring higher than men on a number of early maladaptive schemas. Alternatively, it is possible that male opioid users have more diverse factors contributing to their depression (i.e., more schemas) and only specific schemas, particularly self-sacrifice, are associated with depression for women. It is clear that additional research is needed that continues to examine the relationship between schemas and depression among opioid users, and how these relations vary across gender.

Clinical Implications

Findings from the current study may have important implications for the treatment of opioid dependence. A number of researchers have advocated for opioid dependence treatment to include a focus on mental health factors that may impact substance use (e.g., Ball & Cecero, 2001; Veilleux et al., 2010), and the current study suggests that early maladaptive schemas may be an important focus for treatment programs. One potential avenue for treatment programs is to follow the recommendations of Ball (1998; 2007) for the conjoint treatment of substance use and early maladaptive schemas. Specifically, Ball (1998) developed Dual-Focused Schema Therapy (DFST) for the concurrent treatment of substance use and early maladaptive schemas that uses techniques from schema therapy (e.g., Young et al., 2003) and relapse prevention (Marlatt & Gordon, 1985). By focusing on early maladaptive schemas in substance use treatment, DFST attempts to target the underlying cognitive beliefs that are theorized to contribute to the initiation and perpetuation of substance use (Ball, 1998; 2007). Indeed, research has shown that DFST results in greater reductions in substance use and schema improvement than traditional 12-step facilitation therapy (Ball, 2007). Because each early maladaptive schema has unique features in terms of cognitively held beliefs and behavioral responses to these beliefs (Young et al., 2003), intervention programs could tailor their treatment of patients based on their early maladaptive schemas. Techniques drawn from schema therapy could be used to target each schema with the cognitive, behavioral, and experiential techniques that have been shown to be effective for each schema (Young et al., 2003).

Findings from the current study also indicate that depression may be an important treatment target in opioid users. Research has investigated the impact of antidepressant medication on individuals with opioid dependence, with a recent meta-analysis showing that antidepressant medication did not effectively reduce depressive symptoms in opioid dependent populations (Torrens et al., 2005). Our findings demonstrated that early maladaptive schemas may be an underlying vulnerability factor for depressive symptoms, and treatment of depression among opioid users may be improved by targeting schemas. For some opioid users it is possible that schemas are a consistent underlying factor for depression, which could be one reason why antidepressant medication has been shown to be largely ineffective in this population, since schemas are not targeted and modified. Thus, a focus on reducing early maladaptive schemas, such as through DFST or schema therapy in general (Young et al., 2003) may not only reduce substance use and risk for relapse, but also risk for depression.

Limitations

When interpreting the findings from the current study it is important to consider its limitations. First, the cross-sectional nature of the study prevents the determination of causality among study variables. Longitudinal research is needed to determine how gender, schemas, depressive symptoms, and opioid use interact across time. In addition, structured diagnostic interviews were not used to assess mental health problems, which may reduce confidence in the accuracy of the substance use diagnoses. Future research should employ structured diagnostic interviews (e.g., Structured Clinical Interview for DSM-IV Disorders [SCID]; First, Spitzer, Gibbon, & Williams, 1995) to assess psychopathology. We examined

only one mental health outcome, depression, and future research should examine the relations between schemas and additional mental health problems (e.g., posttraumatic stress disorder, generalized anxiety, personality disorders, etc.) that are known to be prevalent among opioid users. In addition, it is possible that the timing of measure completion (i.e., after medical detoxification) may have affected reports on self-report measures. In addition, our scoring method for the YSQ-L3, although consistent with the standardized recommendations (Young & Brown, 2003), may have masked problematic schema endorsement. Future research could examine other scoring methods for the YSQ-L3, such as mean scores (e.g., Waller, Meyer, & Ohanian, 2001), and determine whether similar results are obtained. Since this study was exploratory in nature, we did not use methods to control for type I error even though we conducted a relatively large number of statistical tests. A bonferroni correction, if implemented, would have reduced the number of gender differences found, although we feel our approach was appropriate given its exploratory nature and small sample size. Future researchers might consider using alpha corrections in their work.

In addition, there was no measure available of opioid use severity, or specific type of opioid(s) used, which hinders our understanding of whether early maladaptive schemas and psychopathological symptoms may be more prevalent in individuals with more severe substance use or users of various types of opioids (e.g., heroin, hydrocodone, codeine). Future research would be improved by employing a standardized measure of drug use severity. The use of a sample of primarily non-Hispanic Caucasian patients limits the generalizability of findings to more diverse populations. The generalizability of findings of the current study is further limited by the use of an inpatient treatment seeking sample and by including patients with an opioid dependence diagnosis only. However, the use of an inpatient sample is also one of the strengths of the current study, as was the use of a specific diagnostic group, as the results of the current study were less likely to be confounded with other substance use.

In summary, the current study examined gender differences in early maladaptive schemas among a treatment seeking sample of opioid dependent adults and to determine whether gender differences in depression remained after controlling for early maladaptive schemas. Results of the current study are consistent with previous research demonstrating that women scored significantly higher than men on half of the early maladaptive schemas, with males not scoring significantly higher on any schemas. Gender differences in depressive symptoms were reduced when controlling for early maladaptive schemas, suggesting that schemas were a better predictor of depression than gender in the current study. Future research should continue to investigate possible reasons why female substance users score higher on early maladaptive schemas than their male counterparts, as well as how schemas impact depressive symptoms.

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Table 1

List of Early Maladaptive Schemas.

Early Maladaptive Schemas	Description
Disconnection & Rejection	**Belief that one's needs for safety, stability, security, empathy, respect, and acceptance will not be met.**
Emotional Deprivation	A belief and expectation that other people will be unable to meet one's emotional needs.
Abandonment	The belief that close, loved others will be lost emotionally and physically.
Mistrust/Abuse	The belief that other people will harm, abuse, or take advantage of you in some way.
Social Isolation	A belief that one different from other people and not a part of any group/community.
Defectiveness	A belief one is unlovable/insignificant due to being bad, inferior, or invalid.
Impaired Autonomy & Performance	**Beliefs that interfere with one's ability to survive, separate, perform successfully, and function independent of other people**
Failure	A belief that one has failed in important areas of life or will eventually fail.
Dependence	A belief that one is unable to handle everyday responsibilities without the help of others.
Vulnerability	A belief that bad things will happen and one cannot do anything to prevent it or cope with it.
Enmeshment	A belief that one cannot be happy or survive without being constantly supported by close others.
Impaired Limits	**Inability to form long-term goals and a lack of responsibility to others; difficulty respecting and cooperating with others.**
Entitlement	A belief that one is entitled to special rights and is better that other people.
Insufficient Self-Control	Difficulty refraining from engaging in impulsive behavior and thinking of long-term consequences.
Other-Directedness	**Excessive focus on the needs, feelings, and desires of other people.**
Subjugation	A belief that one is controlled by other and that one's own feelings/opinions is not important or valid.
Self-Sacrifice	A belief that one must voluntarily meet the needs of other people.
Approval- Seeking	A belief that one's sense of self is dependent on other people liking you.
Overvigilance & Inhibition	**Focus on suppressing one's feelings and impulses; high standards of performance and ethical behavior.**
Emotional Inhibition	A belief that one should not express feelings/emotions.
Unrelenting Standards	A belief that one must meet excessively high internalized standards of behavior.
Negativity/Pessimism	A constant focus on the negative aspects of life.
Punitiveness	A belief that self and other should be punished for mistakes.

Note: Schema domain names are bolded

Table 2

Mean Differences between Men and Women on Early Maladaptive Schemas

Schema	Men (n = 96) M (SD)	Women (n = 98) M (SD)	d
Disconnection & Rejection	60. 2 (67.6)	93.2 (76.6)**	.41
Emotional Deprivation	8.1 (10.8)	12.8 (13.5)**	.38
Abandonment	15.8 (20.1)	27.7 (25.1)***	.52
Mistrust/Abuse	18.4 (23.9)	22.1 (22.4)	.16
Social Isolation	8.2 (13.1)	13.1 (16.3)*	.33
Defectiveness	10.8 (17.3)	18.1 (21.3)*	.37
Impaired Autonomy & Performance	36.3 (36.4)	55.4 (54.9)*	.40
Failure	6.9 (10.9)	11.1 (15.5)*	.31
Dependence	12.4 (16.1)	19.4 (23.4)*	.35
Vulnerability	10.8 (13.0)	13.6 (15.6)	.19
Enmeshment	6.7 (10.3)	12.4 (15.7)**	.43
Impaired Limits	39.6 (36.1)	40.9 (34.4)	.03
Entitlement	13.3 (16.2)	12.8 (14.6)	.03
Insufficient Self-Control	26.8 (23.2)	28.3 (23.1)	.06
Other-Directedness	63.5 (40.2)	88.2 (51.5)***	.53
Subjugation	7.8 (11.2)	16.6 (16.0)***	.64
Self-Sacrifice	37.4 (23.1)	50.5 (28.5)**	.50
Approval-Seeking	19.3 (19.3)	21.3 (20.7)	.09
Overvigilance & Inhibition	81.7 (58.6)	93.8 (61.9)	.20
Emotion Inhibition	9.8 (12.3)	11.4 (13.1)	.13
Unrelenting Standards	29.8 (23.1)	32.3 (26.3)	.10
Negativity/Pessimism	18.0 (17.7)	20.7 (19.0)	.15
Punitiveness	25.7 (21.1)	28.7 (19.7)	.15

Note: Schema domain names are bolded.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 3

Bivariate Correlations (*r*) between Early Maladaptive Schemas and Depressive Symptoms

Early Maladaptive Schema	Males (*n* = 96)	Females (*n* = 98)
Disconnection & Rejection	.29**	.04
Emotional Deprivation	.05	.09
Abandonment	.22*	.11
Mistrust/Abuse	.26*	-.00
Social Isolation	.32**	.01
Defectiveness	.26*	-.02
Impaired Autonomy & Performance	.39***	.14
Failure	.36***	.13
Dependence	.36***	.25*
Vulnerability	.29**	.05
Enmeshment	.06	-.03
Impaired Limits	.22*	.10
Entitlement	.11	.04
Insufficient Self-Control	.20*	.13
Other Directedness	.20*	.24*
Subjugation	.15	.18
Self-Sacrifice	.11	.27**
Approval-Seeking	.21*	.11
Overvigilance & Inhibition	.20*	.09
Emotional Inhibition	.19	-.05
Unrelenting Standards	-.05	.10
Negativity/Pessimism	.36***	.16
Punitiveness	.21*	.05

Note: Schema domain names are bolded.

* $p < .05$

** $p < .01$

*** $p < .001$