

Regular article

The early maladaptive schemas of an opioid-dependent sample of treatment seeking young adults: A descriptive investigation

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Abstract

Opioid dependence is an increasingly prevalent problem throughout the world, particularly for young adults (e.g., ages 17–25 years). Opioid dependence is associated with a wealth of negative consequences and is often a chronic, relapsing condition. Research on factors that may contribute to the etiology of opioid dependence could result in improved treatment outcomes. Using preexisting patient records, the current study examined early maladaptive schemas among young adult opioid-dependent residential treatment patients ($N = 169$), as it is theorized that early maladaptive schemas may underlie or maintain substance use. Results showed that all 18 early maladaptive schemas were endorsed at various levels among male and female patients, with insufficient self-control being the most prevalent schema. In addition, females scored significantly higher than males on 11 of the 18 schemas. Findings from the current study are discussed in terms of future research and implications for the treatment of opioid dependence. © 2012 Elsevier Inc. All rights reserved.

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Drug use is a prevalent and devastating problem throughout the United States and the world, particularly for young adults. For individuals aged 18 to 25 years, there was a significant increase in opioid use from 2002 to 2009 (Substance Abuse and Mental Health Services Administration [SAMSHA], 2010), indicating that opioid use is an increasingly prevalent substance for young adults. Thus, it is important for research to identify factors that may contribute to opioid use among young adults and that could be successfully targeted in substance use treatment programs. Toward this end, research has begun to focus on the early maladaptive schemas of substance users, including opioid users. However, to our knowledge, no research has examined early maladaptive schemas among young adult opioid users. The purpose of the present study was to fill this gap in the literature by using preexisting patient records to examine the early maladaptive schemas of a young

adult treatment seeking sample of opioid-dependent men and women.

Opioid use is an increasingly prevalent drug of choice among young adults throughout the world (SAMSHA, 2007). For instance, in 2009, the rate of illicit drug use was higher for individuals aged 18 to 25 years (21.2%) than for youths aged 12 to 17 years (10.0%) and individuals aged 26 years or older (6.3%) (SAMSHA, 2010). Individuals aged 19 to 30 years have a lifetime prevalence rate for heroin use of 1.7%, with a lifetime prevalence rate of 18.7% for other opioids (e.g., OxyContin, Vicodin). The use of nonprescription opioids has increased substantially in recent years, especially among young adults (Johnston, O'Malley, Bachman, & Schulenberg, 2008). Due to opioids producing a sense of euphoria, inducing relaxation, and reducing pain, they are known to have very high abuse potential (Veilleux, Colvin, Anderson, York, & Heinz, 2010). Given the increased rates of opioid use and the high abuse potential, it is not surprising that opioids are associated with a multitude of negative health and societal problems, including crime, increased HIV risk, unemployment, legal problems, and mortality (Haug, Sorenson, Gruber,

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& Song, 2005). In addition, opioid dependence is often a chronic, relapsing condition (van de Brink & Haasen, 2006), even after inpatient treatment (Gossop, Stewart, Browne, & Marsden, 2002). Due to the prevalence of opioid use and the alarming negative consequences, it is important that information be gathered on factors that could be targeted in treatment programs that might increase the chances of reduced use or abstinence.

One such factor that could be targeted in treatment programs for opioid use is early maladaptive schemas. Recently, researchers have begun to examine the early maladaptive schemas of substance use patients, as it is theorized that schemas may underlie the development and maintenance of substance use (Ball, 1998, Young, 1994). Early maladaptive schemas, which can be defined as “enduring and pervasive themes about oneself, others, and the world” (Ball, 2007, p. 307), are cognitive and behavioral ways of viewing and interacting with the world that are resistant to change (Young, Klosko, & Weishaar, 2003). Early maladaptive schemas are believed to develop during childhood through traumatic and toxic experiences with close individuals (i.e., parents, caretakers). These schemas often generate high levels of negative affect, interfere with meeting one’s basic needs for autonomy and self-expression, and produce self-defeating consequences (Young et al., 2003). Early maladaptive schemas are perpetuated and reinforced throughout childhood, adolescence, and adulthood, rendering them to be pervasive and resistant to change (Young et al., 2003). Early maladaptive schemas often underlie Axis I and Axis II conditions (Young et al., 2003), which are both overrepresented in opioid-dependent populations (Havens & Strathdee, 2005; Strain, 2002).

Young et al. (2003) identified 18 early maladaptive schemas that individuals can develop and maintain. These 18 early maladaptive schemas can be categorized into five separate domains, which include overvigilance and inhibition (schemas of emotional inhibition, unrelenting standards, negativity/pessimism, and punitiveness), disconnection and rejection (schemas of emotional deprivation, abandonment, mistrust/abuse, social isolation, and defectiveness), other directedness (schemas of subjugation, approval-seeking, and self-sacrifice), impaired autonomy and performance (schemas of failure, dependence, vulnerability, and enmeshment), and impaired limits (schemas of entitlement and insufficient self-control). The reader is referred to Young et al. (2003) for an in-depth discussion of each schema. In response to the negative emotional, behavioral, and cognitive aspects associated with each of the 18 schemas, coping responses are believed to develop in an attempt to alleviate the distress associated with these schemas (Young et al., 2003). Unfortunately, the coping responses often used to manage early maladaptive schemas produce a high level of avoidance behavior and can result in substance use as a key coping mechanism (Ball, 1998, 2007).

A few investigations have recently examined the early maladaptive schemas among substance users generally, and

opioid users specifically. For instance, Brotchie, Meyer, Copello, Kidney, and Waller (2004) found that individuals who abused or were dependent on opioids ($n = 36$) scored significantly higher than a nonclinical control group on the majority of the early maladaptive schemas. Unfortunately, this study included opioid users that ranged in age from 17 to 51 years ($M = 27.7$), making it difficult to determine which early maladaptive schemas were most prevalent among young adult opioid users. In addition, this study did not examine potential gender differences in early maladaptive schemas among male and female opioid users, which was likely due to the small sample size. Other research on the early maladaptive schemas of alcohol users has shown that the majority of individuals endorse having early maladaptive schemas (Roper, Dickson, Tinwell, Booth, & McGuire, 2010; Shorey, Anderson, & Stuart, *in press*), score higher on early maladaptive schemas than nonclinical control groups (Roper et al., 2010), and female alcohol users score significantly higher than male alcohol users on the majority of early maladaptive schemas (Shorey et al., *in press*).

Unfortunately, due to the differences in alcohol and opioids, it is difficult to generalize the above findings to young adult opioid users. Generalizing previous research to this specific population is made even more difficult because past research typically employed samples of older adults, not young adult substance users. Knowing which early maladaptive schemas are most prevalent among young adult opioid users and whether males and females differ on their schemas could provide important information for the treatment of opioid dependence. For instance, Ball (1998, 2007) developed Dual-Focused Schema Therapy (DFST) for the concurrent treatment of substance use and early maladaptive schemas. DFST attempts to modify early maladaptive schemas to a manageable level and increase adaptive coping with schemas through a combination of techniques outlined in schema therapy, such as cognitive restructuring, behavioral skills training, experiential exercises (e.g., imagery), and the therapeutic relationship (Young et al., 2003), as well as by incorporating Marlatt & Gordon’s (1985) relapse prevention model. Because it is unlikely that early maladaptive schemas can be completely removed (Ball, 1998; Young et al., 2003), the goal of DFST is to reduce belief in schemas, leading to a reduction in the influence that they have over one’s life while also increasing adaptive coping responses. Initial results suggest that this approach is beneficial; DFST resulted in faster decreases in substance use than the 12-step facilitation therapy (based on Project MATCH’s manual-guided 12-step facilitation therapy, which emphasized the disease concept of addiction and complete abstinence from substances) for adult opioid-dependent patients (Ball, 2007). If research shows that early maladaptive schemas are prevalent among young adult opioid users, treatment programs could consider targeting the dysfunctional beliefs and behaviors associated with early maladaptive schemas, which could result in improved outcomes. Additionally, if males and females differ in their

Table 1
Differences between men and women on schema interpretations

Schema	Men (%)	Women (%)
Emotional deprivation		
Low	76.6	69.0
Medium	10.8	13.7
High	7.2	12.1
Very high	5.4	5.2
Abandonment		
Low	61.3	31.0
Medium	14.4	17.2
High	8.1	12.1
Very high	16.2	39.7
Mistrust/abuse		
Low	56.8	36.2
Medium	17.1	15.5
High	7.2	15.5
Very high	18.9	32.8
Social isolation		
Low	76.6	62.1
Medium	10.8	19.0
High	4.5	5.2
Very high	8.1	13.7
Defectiveness		
Low	74.8	55.2
Medium	11.7	13.8
High	5.4	13.8
Very high	8.1	17.2
Failure		
Low	82.0	58.6
Medium	8.1	13.8
High	5.4	8.6
Very high	4.5	19.0
Dependence		
Low	71.2	39.6
Medium	15.3	27.6
High	8.1	13.8
Very high	5.4	19.0
Vulnerability		
Low	68.5	44.8
Medium	14.4	24.1
High	11.7	20.7
Very high	5.4	10.4
Enmeshment		
Low	55.9	44.8
Medium	22.5	22.4
High	10.8	19.0
Very high	10.8	13.8
Entitlement		
Low	50.5	36.2
Medium	19.8	27.6
High	17.1	13.8
Very high	12.6	22.4
Insufficient self-control		
Low	35.1	12.1
Medium	19.8	19.0
High	23.4	29.2
Very high	21.7	39.7
Subjugation		
Low	66.7	60.3
Medium	17.1	10.3
High	6.3	13.8
Very high	9.9	15.6
Self-sacrifice		
Low	31.5	13.8
Medium	28.8	24.1

Table 1 (continued)

Schema	Men (%)	Women (%)
High	11.8	22.4
Very high	27.9	39.7
Emotional inhibition		
Low	57.7	53.4
Medium	19.8	22.4
High	12.6	13.8
Very high	9.9	10.4
Unrelenting standards		
Low	33.3	39.7
Medium	26.1	22.4
High	15.4	20.7
Very high	25.2	17.2
Approval seeking		
Low	57.7	37.9
Medium	18.9	22.4
High	11.7	20.7
Very high	11.7	19.0
Negativity/pessimism		
Low	52.3	34.5
Medium	18.9	20.6
High	6.3	19.0
Very high	22.5	25.9
Punitiveness		
Low	38.7	25.8
Medium	19.8	20.7
High	23.4	27.6
Very high	18.1	25.9

schemas, consistent with research on alcohol-dependent adults (Shorey et al., in press), treatment programs could tailor treatment initiatives for each specific gender, which has the potential to result in improved treatment outcomes.

The purpose of the present study was to examine the early maladaptive schemas of young adult opioid-dependent users residing in an inpatient residential treatment program using preexisting patient records. In addition, the current study sought to determine whether there were gender differences in early maladaptive schemas among males and females. Due to a lack of research on the early maladaptive schemas of opioid users generally and among young adult opioid users specifically, no definitive hypotheses were made.

1. Method

1.1. Participants and procedures

Existing patient records from a young adult residential substance use treatment program located in the southeastern United States were used for the current study. The young adult treatment program consisted of 30 days in a residential facility and was guided by the traditional 12-step model. In addition to the 12-step model, the young adult program placed a heavy emphasis on the identification and modification of early maladaptive schemas. The young adult program only admits patients into their facility if they have a primary substance use diagnosis and are between the ages of 17 and 26 years. In the state of Tennessee, where treatment

Table 2
Mean differences between men and women on early maladaptive schemas

Schema	Men (n = 111), M (SD)	Women (n = 58), M (SD)	d
Emotional deprivation	6.0 (11.2)	7.4 (10.3)	.13
Abandonment	16.8 (22.5)	32.9 (26.6)***	.65
Mistrust/abuse	17.9 (21.4)	30.5 (26.7)**	.52
Social isolation	6.7 (12.8)	11.1 (14.7)*	.31
Defectiveness	9.8 (14.9)	19.5 (23.2)**	.49
Failure	5.2 (9.4)	12.9 (15.8)***	.59
Dependence	10.8 (16.1)	22.8 (21.9)***	.62
Vulnerability	8.4 (11.9)	13.7 (14.5)*	.39
Enmeshment	10.7 (12.9)	14.2 (15.4)	.24
Entitlement	12.2 (12.9)	17.5 (15.2)*	.37
Insufficient self-control	23.5 (19.9)	37.0 (21.6)***	.65
Subjugation	8.7 (12.9)	12.3 (15.5)	.25
Self-Sacrifice	28.9 (25.0)	37.5 (25.5)*	.34
Emotion inhibition	10.7 (13.4)	11.8 (13.2)	.08
Unrelenting standards	25.8 (21.3)	21.7 (20.4)	.19
Approval seeking	16.5 (18.5)	21.0 (19.4)	.23
Negativity/pessimism	14.6 (16.1)	20.7 (18.5)*	.35
Punitiveness	22.4 (18.3)	28.1 (18.2)	.31

* $p < .05$.

** $p < .01$.

*** $p < .001$.

took place, individuals 17 years of age can provide informed consent to mental health treatment without the presence or consent of a legal guardian. All procedures were approved by the Institutional Review Board of the first author.

Existing patient records from the young adult program were searched from January 2005 to November 2010 for all patients diagnosed with opioid dependence and no other concurrent substance use disorders. This resulted in the identification of 169 preexisting patient records that had an opioid dependence-only diagnosis. The majority of patients were male (65.7%, $n = 111$), non-Hispanic Caucasian (94.1%), and never married (87%). The mean age of participants was 21.2 years ($SD = 2.1$; range = 17–26). Men and women only significantly differed from each other on age, with men being slightly older ($M = 21.5$, $SD = 2.1$) than women ($M = 20.6$, $SD = 2.2$), $t(167) = 2.750$, $p < .01$.

Upon admission into the treatment program, patients completed a number of semistructured interviews and self-report measures as part of their initial treatment intake assessment. Diagnoses were made through consultation with a psychiatrist, a Ph.D. licensed psychologist, and substance use counselors. Patient diagnoses are discussed among the above staff during weekly treatment team meetings, in which a consensus on a primary diagnosis is made for each patient. If disagreements among staff on diagnoses were raised, these disagreements were discussed during treatment team meetings until a consensus diagnosis was obtained.

No records on agreement level of assigned diagnoses among staff are kept at the substance use facility where patient records were obtained. All diagnoses were based on the diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Health Disorders, Fourth Edition* (American Psychiatric Association, 1994).

2. Materials

2.1. Demographics

Patients, upon admission to the treatment facility, were asked to indicate their age, gender, ethnicity, and relationship status.

2.2. Early maladaptive schemas

Patients completed the Young Schema Questionnaire–Long Form, Third Edition (YSQ-L3; Young & Brown, 2003) as part of their initial intake assessment. This questionnaire was completed by patients after medical detoxification, if applicable. This 232-item self-report measure is designed to examine the 18 early maladaptive schemas identified by Young et al. (2003). All questions were rated on a six-point scale (1 = *completely untrue of me*; 6 = *describes me perfectly*) where patients indicated how much each item described themselves. Scores of 4 or greater for each item contribute to the total score of each specific schema, as a response of 4 or greater is suggestive that that particular item may be relevant to the individual and a particular schema. Total scores are obtained for each early maladaptive schema by summing the number of responses rated as a 4, 5, or 6 for all items associated with each schema. The possible score ranges for the 18 early maladaptive schemas are emotional deprivation (0–54), abandonment (0–102), mistrust/abuse (0–102), social isolation (0–60), defectiveness (0–90), failure (0–54), dependence (0–90), vulnerability (0–72), enmeshment (0–66), subjugation (0–60), self-sacrifice (0–102), emotion inhibition (0–54), unrelenting standards (0–96), entitlement (0–66), insufficient self-control (0–90), approval-seeking (0–84), negativity/pessimism (0–66), and punitiveness (0–90) (Young & Brown, 2003; Young et al., 2003).

All early maladaptive schema subscales can be categorized into scores that reflect low, medium, high, and very high schema endorsement. These categories are obtained by using established cutoff scores for each early maladaptive schema on the YSQ-L3 (i.e., Young & Brown, 2003). A score in the low range suggests that a particular schema is not a problem for an individual; a medium score suggest that a schema may be a problem for an individual and should be given further consideration; scores of high and very high indicate that a particular schema is a problem for an individual (Young & Brown, 2003). Because we are unaware of any established cutoff scores for the five schema

domains (e.g., other directedness, impaired limits), we did not combine schemas into their respective domains and instead examined each schema individually, which is a more common approach than combining schemas into domains (e.g., Brotchie et al., 2004; Cockram, Drummond, & Lee, 2010; Riso et al., 2006). The YSQ-L3 has demonstrated good validity, reliability, and factor structure (Cockram et al., 2010; Saariaho, Saariaho, Karila, & Joukamaa, 2009).

3. Results

Bivariate correlations among early maladaptive schemas were conducted for males and females separately. Results showed that the majority of early maladaptive schemas for males and females were positively and significantly associated with each other, with correlation magnitudes consistently approaching .30 to .40. Thus, having one early maladaptive schema is associated with an increased likelihood of having an additional early maladaptive schema, and these findings hold true across schema domains. Due to the large number of correlations examined, these results are not presented here. The full correlation matrix is available from the first author upon request.

Schema interpretations from the YSQ-L3 are presented in Table 1. For females, the schemas rated most often as high or very high were insufficient self-control (68.9%), self-sacrifice (62.1%), abandonment (51.8%), and mistrust/abuse (48.3%). In contrast, the schemas rated most often as low or medium for females were emotional deprivation (17.3%), social isolation (18.9%), emotional inhibition (24.2%), and failure (27.6%). For males, the schemas rated most often as high or very high were insufficient self-control (45.1%), punitiveness (41.5%), unrelenting standards (40.6%), and self-sacrifice (39.7%). In contrast, the schemas rated most often as low or medium for males were emotional deprivation (12.6%), social isolation (12.6%), defectiveness (13.5%), and dependence (13.5%).

Table 2 presents mean differences between males and females on their early maladaptive schemas. As displayed, females scored significantly higher than males on 11 of the 18 early maladaptive schemas, including abandonment, $t(167) = 4.148, p < .001$, mistrust/abuse, $t(167) = 3.321, p < .01$, social isolation, $t(167) = 1.999, p < .05$, defectiveness, $t(167) = 3.296, p < .01$, failure, $t(167) = 3.942, p < .001$, dependence, $t(167) = 4.048, p < .001$, vulnerability, $t(167) = 2.580, p < .05$, entitlement, $t(167) = 2.364, p < .05$, insufficient self-control, $t(167) = 4.055, p < .001$, self-sacrifice, $t(167) = 2.092, p < .05$, and negativity/pessimism, $t(167) = 2.214, p < .05$.

In addition to t tests, effect size (d) differences between male and female schemas scores were calculated by comparing the mean schema scores of men and women, divided by their pooled standard deviations (Cohen, 1988). As described 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. As displayed in Table 2, a number of differences fell in the medium-to-high range for effect sizes. Specifically, the schemas of insufficient self-control ($d = .65$), abandonment ($d = .65$), dependence ($d = .62$), mistrust/abuse ($d = .59$), and failure ($d = .59$) were all medium-to-large effect size differences, with females scoring higher on all of these schemas.

4. Discussion

The purpose of the present study was to examine the early maladaptive schemas of young adult opioid-dependent patients, as well as whether schemas differed among males and females. To our knowledge, this is the first study to examine the early maladaptive schemas among young opioid-dependent patients. Findings from the current study showed that early maladaptive schemas were highly prevalent among male and female opioid users and that females scored significantly higher than males on a number of schemas.

Although preliminary until replicated and extended, results demonstrated that males and females rated a number of schemas as high or very high, indicating that early maladaptive schemas appear to be a prevalent problem in our sample of young adult opioid-dependent patients. To our knowledge, this is the first study to show that early maladaptive schemas are relevant in this population. Because previous research has shown that adults with opioid abuse/dependence score significantly higher than non-substance users on the majority of early maladaptive schemas (Brotchie et al., 2004), and individuals diagnosed with a range of mental health problems (e.g., depression, personality disorders) score higher on schemas than individuals without a mental health problems (Cockram et al., 2010; Nordahl, Holthe, & Haugum, 2005), it is possible that our sample scored higher on schemas than would be found in the general population/non-substance users. Although every schema was endorsed at various levels, there were a few early maladaptive schemas that were more common than others. For instance, insufficient self-control was the schema endorsed most often by male and female patients, and self-sacrifice was also endorsed at high rates for males and females. A number of schemas were not highly endorsed by patients, including the schemas of failure, emotional deprivation, social isolation, and defectiveness. A number of differences in schema interpretations emerged, however, with females rating abandonment and mistrust/abuse schemas as prevalent problems, whereas males rated punitiveness and unrelenting standards as problems. As discussed in greater detail below, these differences in clinical presentation of early maladaptive schemas among males and females may have important implications for treatment.

The finding that insufficient self-control was the most prevalent schema among males and females deserves further discussion. In addition to being the most prevalent schema,

females also scored significantly higher than males on this schema, indicating that this schema is a particularly relevant problem for females. The insufficient self-control schema is characterized by a lack of exercising appropriate self-control and self-discipline, impulsivity, and an inability to think of the possible consequences of behavior prior to acting (Young et al., 2003). In addition, individuals with this schema often have low frustration and anger tolerance (Young et al., 2003). In some cases, individuals with an insufficient self-control schema place an emphasis on avoiding discomfort, such as pain, conflict, or responsibility, which often hinders one's ability to achieve personal fulfillment (Young et al., 2003). The insufficient self-control schema appears consistent with the broader literature on self-control and deviant behavior, such as the general theory of crime (Gottfredson & Hirschi, 1990). That is, research demonstrates that a lack of self-control is a robust predictor of behavior that satisfies immediate desires (e.g., crime, substance use, risky sexual behavior) but may result in long-term negative consequences (Jones & Quisenberry, 2004; Pratt & Cullen, 2000).

It is possible that individuals with the insufficient self-control schema were using opioids in an attempt to cope with the emotional discomfort associated with early maladaptive schemas, seeking immediate gratification, and avoiding pain, which would be consistent with schema theory (Young et al., 2003). Alternatively, individuals may have been behaving in a manner that was consistent with their personally held beliefs associated with their insufficient self-control schema, which may have caused substance use due to a lack of ability to perceive the long-term consequences of their behavior and/or to engage in appropriate self-control. Additional research is needed to further explore the reasons why the insufficient self-control schema was so high in this population and determine how this schema is associated with substance use.

The finding that females scored significantly higher than males on the schemas of mistrust/abuse and abandonment deserves further consideration. These schemas are characterized by the belief that other people will hurt, abuse, or take advantage of another person (mistrust/abuse) and the belief that close others will not be able to provide the emotional support, connection, and protection (abandonment) that one desires (Young et al., 2003). Given that the self-sacrifice schema was also very high among females, it is possible that females are engaging in self-sacrificing behaviors in an attempt to lessen the chances that other people will abandon or abuse them, consistent with their abandonment and mistrust/abuse schemas. Additionally, Young et al. (2003) postulated that one significant contributing factor to the development of these particular schemas is childhood abuse and neglect, which occurs more often for females than males (Bolen & Scannapieco, 1999). Thus, this is one potential reason that could explain why the gender difference in these schemas was present. Future research should examine whether the schemas of mistrust/abuse and abandonment are one mechanism through which childhood abuse is related

to substance use. Still, these findings speak to the importance of treatment programs for opioid dependence to determine whether there are unique issues present for female and male users, as these problems may need special attention during treatment and could be tailored specifically for each gender (discussed in greater detail below).

It is also interesting to note that females scored higher than males on 11 of the 18 early maladaptive schemas. This finding is consistent with research conducted on adult male and female alcohol-dependent patients, which showed that females scored higher on 14 of the 18 early maladaptive schemas (Shorey et al., in press). Thus, it is possible that female substance users have a predisposition to develop early maladaptive schemas to a degree that is greater than their male counterparts. In addition, and as mentioned above, research indicates that females experience more childhood abuse, particularly sexual abuse (Bolen & Scannapieco, 1999), which has been speculated to be a cause of schemas, particularly mistrust/abuse and abandonment (Young et al., 2003), schemas rated higher by females in this study. The gender difference findings could also be interpreted as consistent with research that shows that female substance users often enter treatment with more comorbid psychiatric problems than males (Foster, Peters, & Marshall, 2000; Walitzer & Dearing, 2006). Thus, it is possible that this robust gender difference in early maladaptive schemas is due to females in treatment having more Axis I and Axis II conditions than males. Future research would benefit from examining if Axis I and/or Axis II conditions can account for the gender differences observed in the present study.

4.1. Treatment implications

Although preliminary, findings from the current study may have important implications for the assessment and treatment of opioid dependence in young adults. Because it is theorized that early maladaptive schemas may underlie and maintain substance use and other Axis I and Axis II disorders (Young et al., 2003), it may be important for treatment providers to assess for early maladaptive schemas and determine whether they are contributing to substance use. Because there is mounting evidence that early maladaptive schemas are prevalent in substance-using populations (Ball, 2007; Shorey et al., in press), and even more prevalent than in non-substance-using populations (Brotchie et al., 2004; Roper et al., 2010), it is likely that schemas are contributing to substance use. Assessment of these schemas, and the coping responses individuals use to help cope with their schemas (e.g., avoidance in the form of substance use), could aid in the case conceptualization of individual patients and in treatment planning.

Researchers have also discussed the importance of targeting comorbid Axis I and Axis II conditions in opioid-dependent patients, as these problems are overrepresented in this population (Veilleux et al., 2010). Because early maladaptive schemas may underlie these conditions,

including substance use, targeting early maladaptive schemas when treating opioid dependence may produce beneficial outcomes in the form of reduced opioid use and comorbid Axis I and Axis II symptomatology/conditions. As outlined by Ball (1998, 2007), DFST may be one such approach that could be used when treating young adult opioid-dependent patients. Using techniques drawn from schema therapy (Young et al., 2003), practitioners could employ cognitive, behavioral, and experiential techniques that are designed to challenge and change patients' distorted beliefs and dysfunctional behaviors associated with their early maladaptive schemas. Although early maladaptive schemas are highly stable across time (e.g., Riso et al., 2006), research has shown that brief residential treatment for substance use results in reduced early maladaptive schemas (Roper et al., 2010), suggesting that schemas may be malleable after interventions. Because findings from the current study suggest that patients could have any of the 18 early maladaptive schemas, treatment could be tailored for each individual schema (Young et al., 2003), as the focus of therapy will be qualitatively different depending on which schema is relevant for each patient. Furthermore, because early maladaptive schemas appear to be more prevalent in female opioid-dependent patients, females may benefit more than males from a focus on their schemas. Of course, all of these are empirical questions that could be addressed in future research.

4.2. Limitations

The limitations of the current study should be considered when interpreting the findings obtained. The sample consisted of primarily non-Hispanic Caucasian patients, which limits the generalizability of findings to more diverse populations. In addition, because in patients with only opioid dependence were used in the current study the generalizability of findings is limited to this specific substance use diagnosis. The cross-sectional nature of the current study precludes the determination of whether early maladaptive schemas were present prior to the initiation of opioid use, despite theory to suggest that schemas were likely present prior to substance use initiation. Longitudinal investigations are needed to determine whether early maladaptive schemas contribute to the initiation of substance use. We also did not employ a control group of non-opioid-dependent young adults, which precludes the determination of whether early maladaptive schemas were more prevalent in this substance-using population compared to a non-substance-using population. Future research would benefit from including a non-substance-use control group.

In addition, no measure of severity of opioid use, or which specific opioid was used, was available, and results may have varied depending on these factors. Standardized measures that assess severity of opioid use should be employed in future research. Furthermore, standardized diagnostic interviews were not conducted with patients, hindering our ability to

know whether the dependence diagnoses were accurate. Information about comorbid mental health diagnoses were also not available (e.g., depression, anxiety disorders, personality disorders), and future research should determine whether elevated rates of early maladaptive schemas among substance users is a result of comorbid mental health problems, as there is a wealth of research demonstrating strong associations between mental health problems other than substance use and schemas (e.g., Cockram et al., 2010; Riso et al., 2006; Young et al., 2003). As with most self-report measures, social desirability must be taken into consideration, which was not controlled for in the current study. Because it is believed that certain schemas are viewed as more desirable than others (e.g., self-sacrifice; Young et al., 2003), it is possible that this may have affected reports on the YSQ-L3. Future research should examine this possibility.

In sum, this was the first known study to examine the early maladaptive schemas of young adult opioid users, a substance that has become increasingly prevalent among young adults in recent years (SAMSHA, 2010). Findings from the current study showed that all 18 early maladaptive schemas are present in young adult opioid users, with certain schemas being more or less common than others. In addition, females scored significantly higher than males on the majority of early maladaptive schemas, indicating that schemas may be more of a problem for females. Pending replication and extension, these results suggest that young adults in treatment for opioid dependence may benefit from the assessment and modification of early maladaptive schemas.

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