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Hope and Abstinence Self-Efficacy: Positive Predictors of Negative Affect in Substance Abuse Recovery

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Abstract

Goal-oriented thinking, including hope and self-efficacy, might play a constructive and integral role in the substance abuse recovery process, although such an effect may differ by race. The current study investigated hope and self-efficacy, specifically abstinence self-efficacy, as predictors of negative affect (i.e. depression and anxiety) in a longitudinal sample of men and women in substance abuse recovery who lived in sober living homes. We found hope agency and self-efficacy were related but not identical constructs; hope agency and self-efficacy predicted depressive and anxiety symptoms for individuals in recovery, yet these relationships were moderated by race. Theoretical and clinical implications for promoting positive affect among individuals in substance abuse recovery are discussed.

Keywords

Hope; Self-efficacy; Abstinence; Race; Sober living homes

Introduction

Positive individual characteristics may influence depression and anxiety among individuals in substance abuse recovery. Estimates show that mood and/or anxiety disorders co-occur in up to half of people who have sought treatment for substance abuse problems (Langås et al. 2011; Urbanoski et al. 2015). Two constructs, specifically, *hope* and *abstinence self-efficacy*, are both related to goal pursuit and, thus, may have important affective consequences (Arnau et al. 2007; Scott and Dearing 2012).

Hope is an individual's potential to develop routes to desired goals and encourage oneself to use those paths (Snyder 2002). Hope consists of two components: pathways and agency (Snyder 2002). *Pathways* refers to an individual's ability to generate a plausible route or alternative path to achieve a goal (way power), while *agency* is using one's pathway to reach

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a desired goal (will power; Snyder et al. 1991). Hope theory posits that an individual's perception of success influences ones' emotions, and these emotions reflect the person's past and present progress in achieving goals (Snyder 2002). Empirical research has supported the relationship between hope and negative affect over time. For example, Arnau et al. (2007) observed that high levels of agency predicted lower depression and anxiety scores across a one month time period. Additional research has found that *agency* is more important than *pathways* in predicting behavioral (Dekhtyar et al. 2012) and affective outcomes (Arnau et al. 2007; Magaletta and Oliver 1999; Range and Penton 1994).

Self-efficacy is also a predictor of positive outcomes (Geiger 2012). Self-efficacy involves goal-related thinking (Snyder et al. 1991; Snyder 2002) and has been defined as a person's perceived ability to complete certain activities or engage in certain behaviors (Bandura 1977). In general, self-efficacy is an important predictor of depression and well-being (Chang et al. 2011). In this context, individuals may experience depression when they doubt their ability to perform actions that are necessary for valued outcomes (Ahrens 1987; Scott and Dearing 2012). Although hope and self-efficacy are related constructs (Ferrari et al. 2012), research has supported a theoretical and empirical distinction between the two (Hartley et al. 2008; Magaletta and Oliver 1999).

Research on hope and self-efficacy in substance abuse recovery has not yet examined their relationship to depression and anxiety symptoms. However, existing literature supports the idea that hope and self-efficacy are important characteristics that can help individuals overcome recovery-related challenges. For example, Mathis et al. (2009) found that hope agency and hope pathways scores predicted drug abstinence at an 8 months follow-up. Furthermore, abstinence self-efficacy, or ones' confidence in remaining abstinent from drug and/or alcohol use, has been found to increase abstinence over time (Jason et al. 2007).

Importantly, the effects of both hope and self-efficacy on behavior may differ by race (Hirsch et al. 2012; Schunk and Meece 2006). For instance, Hirsch et al. (2012) found that hope buffered the relationship between depressive symptoms and suicidal behavior for Caucasians but not for African Americans. However, more research is needed to understand the relationship between race, hope, self-efficacy, and affective outcomes (Hirsch et al. 2012; Kim 2012). Therefore, the present study examined hope and abstinence- self-efficacy as predictors of future depressive and anxiety symptoms among men and women residing in sober-living home settings for addiction recovery, as well as the moderating role of race. We believed that individuals who had higher hope agency scores and higher self-efficacy scores would experience fewer depressive and anxiety symptoms 4 months later, after accounting for baseline levels of hope agency, self-efficacy, and negative affect. Due to the limited literature examining the role of race in hope and self-efficacy, we explored race as a moderator of the relationships among hope, self-efficacy, and negative affect.

Methods

Participants

The current study focused on residents of substance abuse sober-living homes called *Oxford House*. Oxford House is one type of recovery residence that range in their structure (i.e.

staffed to no staff) and function (i.e. providing treatment to no treatment provided) but share a similar mission (National Association on Recovery Residences [NARR] 2012). Oxford House is a network of democratically run, self-governed recovery homes with no staff (Jason and Ferrari 2010a, b). The mission of Oxford House is to provide communal living accommodations for same-sex adults recovering from substance abuse in an affordable, sober, and mutually-supportive environment (Jason et al. 2007). As such, Oxford House may promote hope in individuals with addictions by providing a plan for recovery (Oxford House, Inc. 2011) and encouraging residents to hold positions within their houses and engage with their communities (Jason et al. 2008). Presently, there are over 1500 Oxford Houses located in the United States, each housing 6–10 residents.

The present study analyzed data from a large national study on Oxford House residents across the United States who completed four waves of data collection over a span of 1 year. Initially, the sample consisted of 897 current Oxford House residents (604 men, 292 women), who lived in one of 156 Oxford Houses in 89 different U.S. cities. Only participants who completed both Wave 3 (8 months) and Wave 4 (12 months) were included in the present study (n = 507, 346 men, 151 women). The average age of the current sample was 39 years (SD = 9.40), and the average education level was 12.69 years (SD = 1.93). The breakdown of race was as follows: 58.4 % Caucasian, 34.7 % African American, 3.2 % Latino, and 3.7 % other. The majority of the sample was single/never married (51.7 %) and employed full-time (69.4 %). On average, their length of stay at Oxford House was 12.7 months (SD = 16.45).

Procedure

Residents of Oxford Houses were recruited either by an announcement published in the monthly Oxford House newsletter distributed to all Oxford Houses (88.9 %) or at an annual Oxford House convention. Participants lived in Oxford House when they were recruited into the study. Surveys were administered in person, via phone, or via mail, and participants were compensated after completing each wave of data collection. Of the original sample, 578 participants completed a subsequent wave of data collection 8 months later, indicating a 65 % retention rate, and differences among those participants who remained in Oxford House and those who left have been reported elsewhere (Jason et al. 2007).

Measures

Demographic Information—Demographic information was gathered via the 5th Edition of the Addiction Severity Index-Lite (ASI; McLellan et al. 1992) at the baseline interview. The present study included age, sex, race, and length of time living in an Oxford House. For the purpose of statistical analyses, race was dummy coded 0 for Caucasian and 1 for Racial/Ethnic Minority given the large number of Caucasian participants in the sample (58.4 %). Sex was coded 0 for male and 1 for female.

Hope—At baseline and Wave 3 participants completed the 12-item *Adult Dispositional Hope Scale*, a self-report measure of hope (Snyder et al. 1991). The measure includes a 4-item agency subscale (e.g. *I energetically pursue my goals; M* = 22.61, *SD* = 5.09 at baseline; *M* = 23.12, *SD* = 5.55 at Wave 3), a 4-item pathways subscale (e.g. *There are lots*

of ways around any problem; M = 23.76, *SD* = 4.80 at baseline; *M* = 23.81, *SD* = 5.06 at Wave 3), and four distraction items, with each item endorsed on an 8-point Likert scale (1 = *definitely false* to 8 = *definitely true*). For the Wave 3 survey, the internal consistency for both agency (a = .79) and pathways (a = .69) were adequate.

Abstinence Self-Efficacy—Participants completed both the *Alcohol Abstinence Self-Efficacy Scale* and the *Drug Abstinence Self-Efficacy Scale* (AASE; DASE; DiClemente et al. 1994) at baseline and Wave 3. The AASE and DASE are self-report measures informed by Bandura's (1986) cognitive-behavioral self-efficacy theory and based on empirical studies of high risk situations for relapse (DiClemente et al. 1995). For the AASE, respondents are asked to imagine themselves in each of 20 situations (e.g. *When I am being offered a drink in a social situation*) and report their level of confidence that they would not drink alcohol on a 5-point Likert Scale (1 = *not at all confident*, 5 = *extremely confident)*, with scores ranging from 20 to 100 (*M* = 82.28, *SD* = 20.26 at baseline; *M* = 79.02, *SD* = 25.61 at Wave 3). The DASE (*M* = 82.25, *SD* = 21.45 at baseline; *M* = 80.73, *SD* = 25.67 at Wave 3) is identical to the AASE, but the words "drink alcohol" are replaced with "use drugs." In this sample, Cronbach's alpha was .99 for both the AASE and the DASE for the Wave 3 survey. For the purpose of this study, the lower score of the two measures was used for each participant. We chose to use the lower score because Oxford House residents are required to abstain from all types of drugs and alcohol, and whichever domain is the weakest link in abstinence self-efficacy is the domain most likely to lead to relapse (Chavarria et al. 2012).

Depressive and Anxiety Symptoms—The *Global Appraisal of Individual Needs—Quick Screen* (GAINS-QS; Titus et al. 2008) was completed at baseline and Wave 4. The GAIN-QS is a self-report clinical screening tool that was created for adolescents and adults to examine mental health and substance use issues (Dennis 1999). The scale is not meant to be diagnostic, but the mental health questions are similar to DSM-IV criteria (Titus et al. 2008). The subscale used in the present study was the Internal Behavior Scale, which includes a Depression Symptom Index of 5 items (e.g. *Having no energy and losing interest in work, school, friends, sex, or other things you cared about?; M* = 2.32, *SD* = 1.86 at baseline; *M* = 1.49, *SD* = 1.63 at Wave 3) and an Anxiety-Trauma Index of 7 items (e.g. *Trembling, having your heart race or feeling so restless that you could not sit still?*, *M* = 3.38, *SD* = 2.35 at baseline*; M* = 2.18, *SD* = 2.18). Each item is a forced choice *yes* or *no* answer to reflect whether this symptom has occurred in the past 12 months. Cronbach's alpha was .77 for the Depression Symptom Index and .83 for the Anxiety Symptom Index from the Wave 4 survey.

Results

Preliminary analyses examined the distributions of variables and the relationships between variables. Prior to the main analyses, bivariate correlations of all study variables were calculated. Hierarchical linear regressions were performed to test the relationship of hope and abstinence self-efficacy with depressive and anxiety symptoms after controlling for related demographic variables and baseline hope, self-efficacy and affect. Separate regression models were created for depressive and anxiety symptoms. In the analyses,

demographic variables and baseline measures of pathways, agency, self-efficacy, and negative affect were entered into Step 1. Wave 3 measures of pathways, agency, and self-efficacy were entered in Step 2. To test for the effect of race on agency and self-efficacy, interactions between race, agency and self-efficacy were entered into Step 3 of each model.

Depressive symptoms were negatively associated with length of stay ($r = -.13$; $p \leq .01$); age ($r = -.10$; $p \leq .01$); race ($r = -.13$; $p \leq .01$); agency ($r = -.21$; $p \leq .01$); and self-efficacy ($r = -.15$; $p \leq .01$). Anxiety symptoms were also negatively related to length of stay ($r = -.20$; $p \leq .01$); age ($r = -.16$; $p \leq .01$); race ($r = -.10$; $p \leq .01$); agency ($r = -.23$; $p \leq .01$); self-efficacy ($r = -.16$; $p \leq .01$); and were positively associated with depressive symptoms ($r = .70$; $p \leq .01$). Consequently, we examined predictors of depression and then anxiety.

Depression

To test the hypothesis that hope and self-efficacy longitudinally predicted depressive symptoms, demographic variables of sex, age, length of stay at Oxford House, and race, as well as baseline measures of pathways, agency, self-efficacy, and depression were entered into Step 1 of the regression model, which was significant, $R^2 = .23$, $F(8, 501) = 18.36$, $p < .001$. Step 2, which included Wave 3 measures of agency, pathways, and abstinence self-efficacy, was also significant overall, $\Delta R^2 = .017$, $\Delta F(11, 501) = 3.64$, $p < .05$. Step 3 of the model included the interaction terms of agency × race and self-efficacy × race and was also significant, $\Delta R^2 = .01$, $\Delta F(13, 501) = 2.85$, $p < .05$.

Several main effects on depression were noted. First, race was a significant predictor of depression, as racial minorities scored 1.46 points lower than Caucasians on the depressive symptom measure ($b = -1.46$; $SE = -.44$; 95 % CI = −2.73 to −.19), $t(501) = -2.73$, $p < .05$). Higher levels of abstinence self-efficacy at Wave 3 predicted lower depression scores at Wave 4, such that a one point increase in self-efficacy was associated with a .01 point decrease in depression ($b = -.01$; $SE = -.19$; 95 % CI = −.02 to .00), $t(501) = -3.22$, $p < .001$). Agency at Wave 3 was a marginally significant predictor of depression, such that a one point increase in agency was associated with a .03 decrease in depression ($b = -.03$; $SE = -.11$; 95 % CI = −.07 to .01), $t(501) = -1.70$, $p < .10$). Race was found to moderate the relationship of abstinence self-efficacy and depression, as indicated by the significant interaction of race*self-efficacy ($b = .011$; $SE = .01$; 95 % CI = .00–.02), $t(501) = 2.15$, $p \leq .001$). Higher self-efficacy was related to lower levels of depressive symptoms among Caucasians only.

Anxiety

For the anxiety model, demographic variables of sex, age, length of stay at Oxford House, and race as well as baseline measures of pathways, agency, self-efficacy, and anxiety were entered into Step 1 of the model, which was significant, $R^2 = .21$, $F(8, 499) = 16.20$, $p < .001$. Step 2 of the model included Wave 3 measures of agency, pathways, and abstinence self-efficacy, and was also significant, $\Delta R^2 = .04$, $\Delta F(7, 499) = 8.60$, $p < .001$. Step 3 of the model was also significant, $\Delta R^2 = .02$, $\Delta F(10, 499) = 4.92$, $p < .01$, and included the interaction terms of agency*race as well as self-efficacy*race.

As with the depression model, race was a significant predictor of anxiety, as racial minorities scored 2.69 points lower than Caucasian individuals on the anxiety symptom measure ($b = -2.69$; $SE = -.61$; CI = −4.39 to −.99), $t(499) = -3.11$, $p < .01$). Higher levels of agency at Wave 3 predicted lower anxiety scores, such that a one point increase in agency was associated with a .10 point decrease in anxiety ($b = -.10$; $SE = -.21$; CI = −.15 to −.05), $t(499) = -3.69$, $p < .001$). Higher levels of abstinence self-efficacy at Wave 3 also predicted fewer anxiety symptoms, such that a one point increase in self-efficacy was associated with a .02 point decrease in anxiety ($b = -.02$; $SE = -.21$; CI = −.03 to −.01), $t(499) = -3.50$, $p \leq .001$)., Race was also found to moderate the relationship of abstinence self-efficacy and anxiety, as indicated by the significant interaction of race*self-efficacy ($b = .02$; $SE = .01$; CI = .00–.03), $t(499) = 2.40$, $p < .05$). Higher self-efficacy was related to lower levels of anxiety symptoms only among Caucasians.

Discussion

A large proportion of individuals with substance abuse disorders also have a co-occurring anxiety or mood disorder (Merikangas et al. 1998). The present study supports the relationship between hope, self-efficacy, and affective symptoms in a longitudinal analysis of individuals in substance abuse recovery. Overall, findings of this study suggest that both hope and abstinence self-efficacy predict negative affect, specifically depressive and anxiety symptoms.

In support of our hypotheses, agency was a marginally significant predictor of lower depression and a significant predictor of lower anxiety scores over time. Increasing hope, particularly agentic thinking, may be beneficial to recovery outcomes, especially for those with a comorbid mood or anxiety disorder. Pathways was not related to negative affect, which is closely aligned with the current research on hope. It is possible that pathways thinking does not play a role in affective outcomes but does play a role in the relationship of hope to other outcomes, such as health behaviors or the decision to seek treatment. Future research should continue to examine both agency and pathways to better understand the relationship between agency and pathways in addition to both components of hope on broader measures of well-being. Additionally, it could be useful for practitioners to focus on increasing consumers' sense of agency to promote mental health and recovery.

As expected, abstinence self-efficacy significantly predicted lower negative affect scores. While self-efficacy has been shown to be related to affect across a variety of domains (Barlow et al. 2002; Faure and Loxton 2003; Novy et al. 2002), there is less research on self-efficacy and negative affect in the context of substance use recovery. This finding adds support to the notion that increasing abstinence self-efficacy is beneficial to individuals in recovery and predicts unique variance in affect beyond that predicted by hope. Future research should continue to examine abstinence-specific self-efficacy in relation to abstinence outcomes. Practical implications for self-efficacy include abstinence self-efficacy skill building among individuals in substance abuse treatment in order to reduce relapse rates.

Interestingly, race moderated the relationships between self-efficacy and depression, and self-efficacy and anxiety. A marginally significant moderating effect of race was found for agency and anxiety. These interactions suggest that self-efficacy and possibly agency are stronger predictors of negative affect for Caucasians than for ethnic minorities. This finding is consistent with past research that showed that hope buffered the relationship between depression with suicidal behaviors for Caucasians but not for African Americans (Hirsch et al. 2012). African Americans may rely more on social networks than Caucasians (Nobles 2004) and may also be higher in religiosity than Caucasians (Lo et al. 2012). Thus, social networks and religion may serve as protective factors for ethnic minorities more so than Caucasians. In addition, Caucasian's recovery outcomes may be more dependent on individual versus collective characteristics such as hopeful thinking and self-efficacy than African Americans. Finally, it is also possible that hope theory may be more applicable to Caucasians than racial minorities. Therefore, it is important for practitioners to be mindful of the role of race in affective symptoms. Future work in this area could more rigorously examine racial differences in hope and self-efficacy and their impact on abstinence outcomes for individuals in substance abuse recovery.

There were several limitations in this study. Given a 65 % retention rate between baseline and the third wave of data collection, there were differences between participants who dropped out and retained (Jason et al. 2007). Additionally, the residents' length of stay in Oxford House was variable at the baseline interview. Although we controlled for length of stay in the analyses, it is possible that hope, self-efficacy and affect differ for new and veteran residents. Importantly, because Oxford House is only one type of recovery residence, more research is needed to be able to generalize these findings to other individuals who live in other types of recovery residence (NARR 2012). It is also important to note that the measures used to assess depressive and anxiety symptoms are not diagnostic indicators of a mental health disorder. Therefore, more research is needed to understand the relationship between positive characteristics, such as hope and self-efficacy, and depressive and anxiety disorders over time.

The present study suggests that hope and self-efficacy can serve as important cognitive resources for individuals in substance abuse recovery. Practitioners may find it useful to focus on building consumer skills sets related to hope agency and self-efficacy, as these factors may reduce affective symptoms. However, because the utility of these skills differ by race, practitioners need to be aware that the outcomes of specific types of interventions, i.e. individual versus collective, may differ across racial and ethnic groups. Future research should continue to examine the relationships between hope, self-efficacy and affect among individuals in substance abuse recovery. In addition, it may be important for additional studies to explore the impact of context on the relationships between hope, self-efficacy and affective symptoms (Stevens et al., 2014) as it may improve treatment retention and recovery outcomes. Our findings also support the importance of recognizing racial differences in hope and self-efficacy on affective outcomes. Future research is needed to better understand how race impacts hope and self-efficacy among individuals in substance abuse recovery.

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