Alcohol expectancies pre-and post-alcohol use disorder treatment: Clinical implications

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HIGHLIGHTS

- Changes in alcohol outcome expectations (AOEs) among patients treated for Alcohol Use Disorder were assessed.
- Expectations that alcohol would positively affect assertiveness, tension reduction, and cognition were lower post-treatment.
- Expectations that alcohol would negatively affect mood were more strongly endorsed post treatment.
- Higher percentage of drinking days over treatment was associated with less change in expectation of negative effects on mood.
- Higher tension reduction scores were related to more drinking behaviour over the course of treatment.

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ABSTRACT

Background and aims: Modification of elevated positive expectations of alcohol consumption (alcohol outcome expectancies; AOE) is a key feature of Cognitive Behaviour Therapy (CBT) approaches to Alcohol Use Disorders (AUDs). Despite extensive research supporting the efficacy of CBT for AUD, few studies have examined AOE change. This study aimed to assess AOE change following completion of CBT for AUD and its association with drinking behaviour.

Method: One-hundred and seventy-five patients who completed a 12-week CBT program for AUD were administered the Drinking Expectancy Questionnaire (DEQ) at pre-treatment assessment and upon completion of treatment. Abstinence was achieved by 108 (61.7%) of completing patients. For patients who lapsed, the mean proportion of abstinent days was 93%.

Results: DEQ scales assessing expectations of positive alcohol effects on tension reduction, assertiveness, and cognitive enhancement were significantly lower post-treatment (\(p<0.001\)). Expectations of negative effects on mood were higher post-treatment (\(p<0.001\)). The largest AOE change occurred on the tension reduction scale. Greater percentage of abstinent days over treatment was associated with lower pre-and post-treatment tension reduction expectancy scores (\(p<0.05\)). Drinking during treatment was associated with smaller changes in expectations of negative effects of alcohol on mood (\(p<0.05\)).

Conclusions: Individuals who completed CBT treatment for AUD showed significant AOE change. Tension reduction and affective change expectancies may be particularly important for abstinence and useful markers of lapse risk.

1. Introduction

Cognitive-Behaviour Therapy (CBT) is effective in the treatment of Alcohol Use Disorder (AUDs; Connor, Haber, & Hall, 2016; Haber, Lintzeris, Proude, & Lopatko, 2009). Central to CBT for AUDs are cognitive constructs associated with the patient's beliefs about the effects of alcohol (Beck, Wright, Newman, & Liese, 1993; Marlatt & Gordon, 1985; Witkiewitz & Marlatt, 2004). Motivation to drink among...
AUD populations is informed by positively biased cognitions regarding the effects of alcohol (Bandura, 1999; Beck et al., 1992). Social-cognitive theory refers to these cognitive mechanisms as Alcohol Outcome Expectancies (AOEs; Bandura, 1977). AOE change was found to be associated with better treatment outcomes (Brown, 1985; Brown, Carrello, Vik, & Porter, 1998; Connors, Tarbox, and Faillace, 1993; Jones, Corbin, & Fromme, 2001; Monk & Heim, 2013; Young & Oei, 1993). However, few studies have examined AOE change in treatment settings.

Social-cognitive theory proposes that human behaviour is determined by two core cognitive constructs, beliefs regarding the outcome of a behaviour or event (outcome expectancies) and a person’s confidence in their ability to complete a certain behaviour (self-efficacy; Bandura, 1977, 1986). AOE may be positive, for example ‘drinking alcohol helps me relax’, or negative, ‘I become aggressive when I drink’. While positive AOE inform motivation to drink, negative AOE align with motivation to restrain from drinking (McMahon & Jones, 1993). Positive AOE have been suggested to prompt onset of drinking, while the salience of negative expectancies mediates progression to alcohol misuse (Lee, Greely, & Oei, 1999). Experimental designs have shown it is possible to manipulate AOE to decrease (Darkest & Goldman, 1993) or increase drinking (Roehrich & Goldman, 1995), supporting the efficacy of targeting AOE within treatment. Cognitive Therapy of Substance Use Disorders considers two forms of AOE, ‘anticipatory’ and ‘relief’ oriented (Beck et al., 1993). Anticipatory beliefs, refer to expectations of positive reinforcement. The most widely identified anticipatory beliefs within AOE assessments include: improved social assertiveness, enhancement of sexual confidence and enjoyment, and enhancement of cognitive function (Brown, Christiansen, & Goldman, 1987; Nicolai, Demmel, & Moshagen, 2010; Young & Oei, 1996). Relief-oriented beliefs are expectations of negative-reinforcement, such as drinking alcohol to relieve tension or emotional distress. AOE measures commonly capture relief oriented beliefs within a factor reflecting tension reduction (Brown et al., 1987; Nicolai et al., 2010; Young & Oei, 1996). Positive AOE are targeted within CBT by assessing addiction-related beliefs, challenging the accuracy of maladaptive beliefs, developing alternative control beliefs, and examining their advantages and disadvantages (Beck et al., 1993; Carroll, 2008; McCrady, 2014). Negative AOE are commonly addressed by motivational interviewing (MI) techniques. Within MI, negative outcomes of drinking are selectively attended to in order to resolve ambivalence by developing discrepancy between the perceived benefits and consequences of drinking (Miller & Rollnick, 2012). Successful alteration of unhelpful AOE is proposed to reduce motivation to drink and enhance drinking refusal self-efficacy (Bandura, 1999; Gullo, Dawe, Kambouropoulos, Staiger, & Jackson, 2010; Young & Oei, 1993).

Despite the position of AOE within cognitive conceptualisations of AUD, there is limited evidence supporting their role in treatment response (Jones et al., 2001; Kouimitsidis, Stahl, West, & Drummond, 2014). While several studies have found lower positive AOE to be predictive of better treatment outcomes (Brown, 1985; Brown, Carrello, Vik, & Porter, 1998; Connors, Tarbox, and Faillace, 1993), this finding is not consistently replicated (Solomon & Annis, 1990; Young, Connor, & Feeney, 2011). Jones and McMahon found stronger delayed negative AOE, but not immediate negative or positive AOE, were predictive of improved treatment outcomes (Jones & McMahon, 1996, 1994). Crucial to the validity of targeting AOE within treatment is demonstrating expectancy change, however, AOE change and its relationship with treatment response is rarely assessed. The majority of research examining AOE change has used convenience samples of non-alcohol dependent college students. In these studies, behavioural and cognitive paradigms have demonstrated efficacy in changing AOE and reducing consumption; though these effects are typically not maintained beyond four weeks (Scott-Sheldon, Terry, Carey, Garey, & Carey, 2012).

With respect to clinical settings, Brown et al. (1998) examined AOE change of 101 patients across a four week abstinence oriented AUD treatment program. Small, statistically significant changes were observed on social assertiveness and tension reduction AOE, but not on sexual enhancement, social and physical pleasure, or arousal and power. Among 63 problem drinkers Connors et al. (1993) found no change in positive AOE following an 8-week behavioural treatment for alcohol misuse. However, a significant relationship between reduction in positive AOE (social assertiveness and tension reduction) and reduced drinking behaviour was observed at 18-month follow up. Young et al. (2011) found reductions in social assertiveness, tension reduction, cognitive improvement, and sexual enhancement AOE among 164 patients following a 12-week CBT program for AUD. Negative expectancies of affective change were more strongly endorsed post-treatment. No significant differences in AOE change were observed between patients who completed treatment abstinent and those who lapsed; though trends toward significance of lower social assertion and sexual enhancement scores among abstinent patients were reported. Jones and McMahon (1996) followed 151 patients who attended a 2-week residential detoxification programme, conducting monthly assessments for 12-months. Although detoxification was not intended to address AOE directly, reductions were observed on the positive AOE physical and social pleasure and social assertiveness, but not sexual enhancement, tension reduction, or negative AOE. When pre-treatment negative AOE were controlled within the analysis, greater increase in distal negative AOE was associated with longer maintenance of abstinence.

These studies provide some support for the hypothesis that AOE change with treatment, and mixed evidence for the role of expectancy change in treatment response. Interpretation of these findings is complicated by variations in treatment approach, sample characteristics, and substantial methodological and statistical limitations. Widely recognised covariates of AOE such as dependence severity (Connor, Gudgeon, Young, & Saunders, 2007), age (Monk & Heim, 2013; Mooney, Fromme, Kivlahan, & Marlatt, 1987), and gender (Mooney et al., 1987; Read, Wood, Lejuez, Palfai, & Slack, 2004) were not controlled within any of the studies, with the exception of Jones and McMahon (1996). Drinking behaviors were either not reported (Brown et al., 1998), or collapsed within less sensitive categorical variables (Connors et al., 1993; Jones & McMahon, 1996; Young et al., 2011). As the intention of all treatments was to help patients abstain from alcohol, the relationship between drinking behaviour and AOE change is important to the interpretation of results. For example, social-cognitive theory predicts that as AOE become less positive, or more alcohol averse, drinking behaviour declines (Bandura, 1999; Wiers et al., 2003). Alternatively, positive experiences with reduced drinking behaviour may serve as naturalistic behavioural experiments which challenge long-held biased AOE (Wiers et al., 2003). More sensitive measures of drinking behaviors are required to examine these potential relationships.

### 1. Aim and hypotheses

AOE change is hypothesised to be an important component of successful AUD treatment. This study examined AOE change after completion of CBT for AUD (Young et al., 2011). Positive AOE were predicted to significantly reduce over treatment. The largest change was expected on the Tension Reduction and Assertiveness measures (Brown et al., 1998; Young et al., 2011). Negative AOE were expected to be more strongly endorsed post-treatment (Young et al., 2011). Greater AOE change was predicted to be associated with more abstinent days over treatment.

### 2. Method

#### 2.1. Participants and procedures

Data were available from 445 patients who began a 12-week abstinence-oriented CBT program for AUD. Of these, 175 (39.3%)
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