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Experimental modification of perspective on thoughts and metacognitive beliefs in alcohol use disorder

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ABSTRACT

Metacognitive therapy is designed to impact directly on cognitive monitoring and control processes such that individuals can develop alternative ways of experiencing and regulating thoughts. One technique used for this purpose is 'detached mindfulness' which promotes a decentred perspective to thoughts and decouples repetitive thinking and coping from their occurrence. This study set out to test the effects of detached mindfulness against a control condition, a brief exposure to alcohol-related thoughts. Eight patients diagnosed with alcohol use disorder in an abstinence regime were exposed to detached mindfulness versus brief exposure in a counterbalanced repeated-measures design. Results showed that detached mindfulness led to significantly greater decreases in meta-appraisal and metacognitive beliefs about alcohol-related thoughts compared to a brief exposure. Significantly greater decreases in distress and urge to use alcohol were also observed in detached mindfulness. The clinical implications are discussed.

1. Introduction

Metacognition can be defined as knowledge and cognitive processes that are involved in the appraisal, control and monitoring of thinking (Wells, 2000). In the last twenty five years metacognition has been applied to the conceptualization and treatment of anxiety disorders and depression with notable results (Normann et al., 2014; Wells, 2009). The metacognitive model of psychopathology emphasises the importance of the processes which generate, monitor and maintain intrusive cognitive experiences, rather than focusing upon the content of such experiences (Wells, 2009). From this perspective, psychological distress is maintained by the activation of the Cognitive Attentional Syndrome (CAS), which consists of perseverative thinking, thought suppression, threat monitoring and avoidance. Once activated, the CAS focuses attention towards distress congruent information, locking the individual into a vicious cycle appraised as distressing but where a successful resolution fails to be achieved. The maintenance of the CAS is influenced by metacognitive knowledge. Metacognitive knowledge is conceptualised as beliefs about cognition that are positive and negative in content (e.g. "Worrying will help me cope" and "Some thoughts are dangerous") and generic plans for guiding cognition and behaviour. Recently, it has been proposed that the metacognitive model can be applied to alcohol use disorder (AUD; Spada and Wells, 2005, 2006; Spada et al., 2013, 2015). According to this formulation metacognitive beliefs can lead to the activation of CAS components associated with AUD such as rumination and worry about alcohol-related intrusions, the monitoring of alcohol-related cues, and the suppression of alcohol-related thoughts. Consistent with such an application metacognitive beliefs identified in AUD include beliefs about the dangerousness and need to control alcohol-related thoughts (Spada and Wells, 2005; 2006; Spada et al., 2009, 2013) e.g. *"Thoughts about drinking are dangerous and should always be avoided"*. Metacognitive beliefs may have an impact on AUD by increasing levels of distress and craving through the activation and persistence of maladaptive modes of information processing (the CAS) based on worry, rumination, and thought suppression. More adaptive metacognitive beliefs like *"Thoughts are not facts"* or *"My worry is controllable"* can result in acquiring a metacognitive mode capable of inhibiting the CAS.

Empirical support for the general role of metacognitive beliefs in AUD has been steadily accumulating. For example metacognitive beliefs have been found to: (1) predict the severity of alcohol

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use in clinical and non-clinical samples (Clark et al., 2012; Spada and Wells, 2009, 2010); (2) be elevated across drinking behaviour (Spada and Wells, 2005; Spada et al., 2007a, 2007b); and (3) predict drinking behaviour independently of alcohol outcome expectancies in non-clinical samples (Spada et al., 2007a, 2007b). Metacognitive beliefs have also been found to play a role in the escalation of craving in both AUD patients and non-clinical populations (Caselli and Spada, 2010, 2013, 2015). Spada et al. (2009) have also shown that high levels of beliefs about needing to control thoughts prospectively predict relapse and high levels of alcohol intake at 3, 6 and 12 months follow-up in outpatients in an abstinence regime.

Whilst these data are indicative of an involvement of specific metacognitive beliefs in alcohol use disorder, there have been no attempts to examine the effects of directly manipulating metacognitive processing of cognitive content in this disorder.

Detached mindfulness is a technique which is aimed at achieving a direct modification of reactions to thoughts in order to modify metacognitive knowledge. It is characterised by meta-awareness and distancing in the absence of effortful processing or coping (Wells, 2005). Detached Mindfulness requires the recognition and suspension of conceptual analysis or thought suppression efforts. Three earlier studies have examined the effects of using Detached Mindfulness to manipulate metacognitive processing. Gkika and Wells (2015) have demonstrated that Detached Mindfulness produces wider-ranging effects than thought challenging in reducing speech anxiety. Wells and Roussis (2014) have shown that Detached Mindfulness is effective in reducing intrusions immediately after stress-exposure, and Ludvik and Boschen (2015) have demonstrated that Detached Mindfulness has wider-ranging ameliorative effects on the negative consequences of repeated checking when compared with cognitive restructuring in a non clinical sample. The application of Detached Mindfulness in AUD would require the patient to purposefully step back from their alcohol-related thoughts and see them as passing events that do not require a response. This process should facilitate the discovery that alcohol-related thoughts are not dangerous, do not need further processing, and do not necessary lead to uncontrolled behaviour. This metacognitive approach would differ markedly from traditional cue-exposure because the latter posits that the repeated presentation of a cue should result in a decreasing reaction (habituation) to the elicited response (Monti and Rohsenow, 1999). Detached Mindfulness, on the other hand, would be aimed at helping the patient shift to metacognitive processing to disrupt perseverative thinking, modifying an individual"s perspective on thoughts and testing the validity of their maladaptive metacognitive beliefs.

In the present study we tested whether a brief Detached Mindfulness technique would be more effective than a control condition (brief exposure) in reducing negative meta-appraisal of alcohol-related thoughts and conviction in maladaptive metacognitive beliefs. We also tested the association between this change with reduction in distress levels and urge to drink.

2. Method

2.1. Design

A counterbalanced repeated measures design was used. All participants were exposed to both experimental conditions. Order effects were controlled for by counterbalancing the sequence of conditions (with brief interventions reducing some carry-over effect) and by a randomized allocation to the two potential sequences. The independent variable was the task (Detached Mindfulness or Brief Exposure) given to the participants. The effects of the two tasks were examined on six visual analogue scales (dependent variables). Two scales assessed levels of distress and actual urge to drink. Two scales evaluated negative meta-appraisals of alcohol-related thoughts. The remaining two scales measured metacognitive beliefs about: (1) the need to control alcohol-related thoughts; and (2) the negative impact of alcohol-related thoughts on behaviour, a form of thought-action fusion belief (Shafran et al., 1999).

2.2. Participants

Eight patients (four female) referred to the Addiction Centre, Gruppo CEIS, Modena, Italy, were included in the study. All potential participants were assessed clinically with respect to their appropriateness for inclusion in the study. Inclusion criteria were: (1) age of 18 or above; (2) understanding of written and spoken Italian; (3) absence of co-occurring substance use disorder over the previous 12 months (with the exception of tobacco use disorder); (4) absence of cognitive deficits or Intellectual Developmental Disorder; (5) diagnosis of Alcohol Use Disorder (according to DSM-5 criteria, APA, 2013); (6) medication free or stable on medication; (7) abstinent regime.

The mean age of the sample was 42.0 years (SD=4.1 years, range=35–50) and the average years of education were 10.9 (SD=2.7). The participants' mean scores on the Alcohol Use Disorders Identification Test (AUDIT; Babor et al., 1992) were 28.5 (SD=3.9). The average duration of alcohol-related problems was 12.1 years (SD=3.8 years). The average abstinence period was 8.3 months (SD=5.8). Four participants were specified as in early remission, four participants were specified as in sustained remission. None of the participants were in a controlled environment. Four participants were medication free. Four participants were stable on medication, one was using an antidepressant and three were using an atypical antipsychotic. The criterion A4 of DSM-5 (APA, 2013) "Craving, or a strong desire or urge to use alcohol was met for all participants. The sample was entirely Caucasian.

2.3. Dependent measures

Six visual analogue scales were constructed to assess the dependent variables. Each scale was administered at 1, 3 and 5 min during behavioural assessment test and during the two experimental conditions. Each scale was rated on a 0–100 range. Two items referred respectively to (1) intensity of distress ("*How much do you feel stressed now? "*, from "*Not at all*" to "*The most distressed I have ever been*"); (2) intensity of urge to drink ("*How strong is your urge to drink now? "*, from "*I do not feel the urge to drink at all*" to "*My urge to drink cannot be any stronger*"); (3) fear of alcohol-related thoughts ("*How much do you fear drinking thoughts now? "*, from *"Not at all"* to *"The most fear I have ever feel"*); (4) perceived uncontrollability ("*How much do you feel in control right now?"*, from *"Completely under control"* to *"Completely out of control"*). Two items were associated to different metacognitive beliefs: (1) the need to control alcohol-related thoughts ("*Drinking thoughts are dangerous and need to be controlled"*); and (2) the impact of alcohol-related thoughts on behaviour ("*Thinking about drinking can make me drink*"). These items were rated on a 0–100 scale with 0 labelled as "*I do not believe at all*" and 100 labelled "*I am completely convinced that it is true*".

2.4. Procedure

Ethics approval for the study was obtained from the Studi Cognitivi Research Institute Ethics Committee. All potential participants were following an out-patient programme aimed at achieving abstinence which included psychoeducational and