

Alcohol Dependence and Psychological Sense of Control: Refining the Links

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Issues of psychological control feature prominently in the area of alcohol dependence (AD) and its treatment, yet the reliance on 'locus of control' (LOC) as the most common depiction of control in such research is problematic. Using a multidimensional measure to overcome such problems, this study investigates the relationship between sense of control and clinical features of AD in 50 people presenting for treatment. Severity of dependence was associated with a reduced overall sense of control. Measures of day-to-day drinking problems were significantly associated with an adverse control profile consisting of a reduced sense of control in both general and specific domains, along with reliance on negative means of gaining control. Multidimensional control inventories enable a more sophisticated functional analysis of the relationship between psychological control and features of AD, and this holds greater promise for understanding and specifying the mechanisms of action in treatments such as cognitive-behavioural therapy which explicitly employ control constructs.

Few psychological constructs have been so diversely applied to the study of health and illness as the construct of control (Lefcourt, 1992), and the area of alcohol dependence (AD) is no exception. Like other health fields where control constructs have been employed, there is considerable variability in the way in which these concepts have been applied in AD and conflicting empirical support for such applications.

Alcohol is the most commonly used recreational drug in New Zealand (Ministry of Health, 2004), and over half of clients presenting to alcohol and drug services have AD (Adamson et al., 2006). Issues of psychological control are thought to be important in AD at a number of functional and clinical levels. First and most obviously, the diagnosis of the AD syndrome itself directly implicates issues of impaired

control. In turn, the notion of 'loss of control' has been adopted extensively in self-regulation and self-efficacy models of alcohol abuse/dependence (Kahler, Epstein, & McCrady, 1995; Wills, Windle, & Cleary, 1998). Stemming from such models, control psychopathology often forms part of the wider psychological depiction of those with AD, including the characterization of such people as having 'double loss of control' (Room & Leigh, 1992) involving lost control over drinking and wider life functioning. Typically then, people with alcohol abuse/dependence have been reported as exhibiting a greater external locus of control (LOC, Rotter, 1966) than other 'normal' populations (Naditch, 1975; Nowicki & Hopper, 1974; Obitz & Swanson, 1976; Poikolainen, 1997). However this is not a uniform finding as many studies have failed to find any, or at best a partial,

functional relationship between AD and LOC (Dielman, Campanelli, Shope, & Butchart, 1987; Goss & Morosko, 1970; Marchiori, Loschi, Marconi, Mioni, & Pavan, 1999).

Second, issues of control are differentially embedded in the majority of AD treatment modalities and approaches. For example, as the "dominant paradigm for treating AD" (Morgenstern & Longabaugh, 2000 p.1746), one of the hypothesised mechanisms of action of cognitive-behavioural treatments (CBT) is that of mobilising self-efficacy and self-control. Though attention to control issues is commonplace in CBT, it is noteworthy that other popular treatment models imply different intentions, at least initially, with respect to psychological control. For example, motivational enhancement therapy (Miller, 1996), a widely applied treatment approach in New Zealand (ALAC, 1999), encourages clients to develop an *internal* LOC ("a 'can do' belief in one's ability", Yehne & Miller, 1999). By way of contrast, the disease model of Alcoholics Anonymous incorporates an explicit assumption of AD being beyond the control of the individual. Here the first goal of this treatment for the drinker is to admit powerlessness over one's situation – that is, to adopt an *external* LOC with respect to the AD (Sheehen & Owen, 1999).

Third, aspects of control have been examined as both a predictor (independent variable) and outcome (dependent variable) of treatment programmes (Dean & Edwards, 1990;

Figurelli, Hartman, & Kowalski, 1994; Johnson, Nora, Tan, & Bustos, 1991). In this respect, an outcome of increased internal LOC has been viewed as both desirable and evidence of greater self-responsibility for health and general well being. As such, a primary intent of treatment is to increase internality (Oziel & Obitz, 1975). Supporting this assumption, those unimproved or less improved by treatment, or who drop out of treatment, have been found to be more external in their orientation (Canton et al., 1988; Koski-Jannes, 1994; Prasadarao & Mishra, 1992).

Less commonly, studies have looked at the relationship between aspects of psychological control and other clinical phenomena of AD. In this respect, several authors have suggested investigating the relationship between control constructs and the different issues embedded in severity and dependence (Bennett, Norman, Murphy, Moore, & Tudor-Smith, 1998; Hirsh, McCrady, & Epstein, 1997). The finding that LOC explains little in the variability of consumption levels of drinking (Bennett et al., 1998) illustrates the need to reevaluate what is often simply assumed as a straightforward relationship between control constructs (usually assumed as LOC) and all aspects of AD. In short, issues of physiological *dependence* have received substantial research attention at the expense of empirical interest in other equally important symptoms of alcohol-related physical and/or psychological *problems* (Drummond, 1990; Morey, Skinner, & Blashfield, 1984) such as self-neglect, debt, and drink-driving. While undoubtedly there is a strongly positive relationship between dependence and problems, they are not the same thing, and it is therefore important to consider them as separate entities in any functional reanalysis of the relationship between psychological control and AD.

In summary, although alcohol-related problems, severity of drinking, and levels of dependence are all commonly considered in clinical research and practice, the empirical literature evaluating assumptions about the relationship between such domains of AD and psychological control is far from conclusive or adequate. Indeed, by its primary reliance on variants of LOC

as the common depiction of 'control', the field of AD remains vulnerable to the same criticisms of all research analysing control merely at the level of internality-externality dichotomies. These criticisms are reviewed in an earlier paper (Surgenor, Horn, Hudson, Lunt, & Tennent, 2000), and are briefly described as follows. First, in the same way that CBT models differentiate between cognitive, behavioural, and emotional components, it is equally important to differentiate between the expressions, meanings, and understandings people have about psychological control. That is, expressions, meanings, and understandings of control also extend beyond simplistic causal beliefs about action-outcome contingencies (Haidt & Rodin, 1999; Skinner, 1985). For example, there are important distinctions between *agents* of control (those who exert control), *means* of control (the pathways through which control is exerted), and the *ends* of control (the outcomes over which control is exerted) (Skinner, 1985). Second, there are important differences between *beliefs* about control, *experiences* of control, and *objective* control conditions. While at first glance these differences appear subtle, they represent potentially important clinical and functional distinctions between "I can do it", "I am making it happen", and accurate recognition of actual control conditions (Chanowitz & Langer, 1980).

Multidimensional control measures have been developed in response to these criticisms, and when applied to other control-compromised populations, have enabled a far more complex appraisal of psychological control in relation to health and psychopathology (Surgenor, Horn, & Hudson, 2003; Surgenor et al., 2000). One such measure is the Shapiro Control Inventory (SCI) (Shapiro, 1994). Such measures have been applied to the study of other health conditions (Shapiro, 1994; Shapiro & Astin, 1998), but despite the declared dissatisfaction with LOC in AD research (Collins, Koutsky, & Izzo, 2000; Poikolainen, 1997), these have yet to be utilised in this field. In attempting to address this gap in the literature, the purpose of this study was to undertake a more detailed analysis of the relationship between multiple "sense of control" variables,

and selected clinical variables in people with AD. The study also serves a second purpose of investigating the utility and client acceptability of the SCI which has yet to be evaluated directly with AD populations.

Method

Participant Recruitment

This study was undertaken at the Community Alcohol and Drug Service (CADS) of the Canterbury District Health Board, in Christchurch, New Zealand. As part of the public health service, this centre employs a range of health professionals who provide free assessment and treatment. A cohort of 50 participants was recruited from attendees of CADS assessed as suitable by the study recruiters (two senior clinicians within the service), and who consented to participate in research.

Prior to commencement, ethical approval had been received from the appropriate statutory organization. Inclusion criteria included the presence of AD as the current and primary psychiatric diagnosis as assessed by the Diagnostic Interview for Genetic Studies (DIGS) (Nurnberger et al., 1994) over the preceding month. Exclusion criteria, the presence of which were assessed by the recruiting clinician, included the following:

- a. Current severe mental illness (e.g., psychosis) rendering any approach for research inappropriate, or discourteous
- b. Known significant cognitive impairment
- c. Deemed to be unsafe (e.g., suicidal) because of mental state
- d. Insufficient English language to complete the questionnaire
- e. Intoxicated at point of recruitment.

Measures

Demographic and clinical status variables

Data regarding age and gender were obtained from the clinical file, while the recruiting clinician completed the Substance Use section of the DIGS to confirm inclusion criteria regarding both the presence and recency of AD. (Ethnicity was not collated for this study). Participants then completed the following widely used and standardised questionnaires to assess the current

status of alcohol dependence and drinking-related problems.

Alcohol Problems Questionnaire (APQ). The APQ (Drummond, 1990; Williams & Drummond, 1994) was used to establish the current status of drinking-related problems. By design, no items make reference to symptoms of dependence. Although a longer 46-item version is available to assess specific problem areas (e.g., friends, money, police etc), in accordance with the authors' warning that these additional items have yet to be adequately validated, only the 23-item 'common score' scale was used. Questions are answered in a dichotomous (yes/no) format, and a total score is summed from items endorsed.

Leeds Dependence Questionnaire (LDQ). The LDQ is a 10-item single scale questionnaire designed to measure severity of substance dependence, particularly alcohol and opiates over the previous week (Raistrick et al., 1994). All items are scored on a range 0-3. A variety of data regarding reliability and validity are reported by the authors attesting to its suitability across wide ranges of dependence levels. More recently the LDQ has been validated for use with New Zealand clients in mainstream alcohol and drug settings (Paton-Simpson & MacKinnon, 1999).

Obsessive-Compulsive Drinking Scale (OCDS). The OCDS is a 14-item questionnaire derived from the Yale-Brown Obsessive-Compulsive Scale for heavy drinking (YBOC-hd). Each item is scored on a five-point response scale (0-4), and higher scores indicate greater psychopathology regarding alcohol use. While total score is also used in many studies, the OCDS was originally assumed to consist of two factors: obsessions and compulsions (Anton, Moak, & Latham, 1996). Subsequent studies have reviewed the factor structure of the OCDS (Bohn, Barton, & Barron, 1996; Kranzler, Mulgrew, Modesto-Lowe, & Bureson, 1999). The three-factor solution reported by Roberts et al (1999) was used in this study as this solution was based on subjects most closely resembling the participants in the current study, that is, exclusively outpatients essentially free from other

major polysubstance abuse, seeking free treatment from a community-based treatment centre. The first factor, 'resistance/control impairment', assesses inability to resist and control thoughts and behaviours related to drinking. The second factor entitled 'obsession' measures the frequency and impact of drinking-related thoughts and drives. A third factor, 'interference', assesses how drinking-related thoughts and behaviours interfere with the functional aspects of one's life.

Measure of psychological control

Participants then completed the **Shapiro Control Inventory (SCI)** (Shapiro, 1994). The SCI is a nine-scale, 187-item inventory developed to "categorize, refine, and articulate a person's state of consciousness regarding control" (Shapiro, 1994, p.7). Scores derived from this measure reflect three components described as follows:

As the first and most general component, *Sense of Control* "measures a person's view that s/he has control, as well as the belief that s/he can gain control if desired" (Shapiro, 1994, p.7). The overall score (Scale 1) gives the broadest view of the respondent's sense of control, and is further analysed with respect to its constituent parts: *positive sense of control* (Scale 2) which assesses belief in the ability to attain future control, ability to utilize positive modes of control, and current level of self-control; *negative sense of control* (Scale 3) which assesses the sense of loss of control in areas previously experienced as controlled, aspects of inadequate self-control or environmental control, and feelings of helplessness and passivity. *Sense of control* is also examined with respect to domains in which such control is experienced - either as an overall score (Scale 4) or by each of seven specific domain scores (*body, mind, relationships, self, career, environment, or impulse control*). In this way, the extent to which loss of control in one domain is also experienced in another can be examined.

Second, *Mode of Control* assesses the means by which an individual attempts to attain and maintain a sense of control. Distinctions are made

across the two dimensions of assertive-yielding and positive-negative, thus giving four scales. *Positive-assertive* (Scale 5) measures the perceived ability to use an active, altering mode of control, and includes descriptors such as 'decisive', 'leading', and 'communicating needs'. *Positive-yielding* (Scale 6) measures sense of control through means of letting go of active control. Descriptors include 'patient' and 'accepting'. *Negative-assertive* (Scale 7) measures too much active control ('manipulating', 'dogmatic') while *negative-yielding* (Scale 8) measures aspects of too little control, with descriptors such as "indecisive" and 'manipulated'.

Third, *Motivation for Control* (Scale 9) measures the desire for psychological control over oneself, others, and the environment. Components of desire include the perceived importance of being in control, efforts to achieve control, and fear of losing control.

In addition to these main scales, a further scale (unnumbered) is available to determine *Agency of Control* - the source from which one's sense of control emanates (self and/or others). Of all the SCI component scores, it is this aspect alone that is closely affiliated with LOC (Shapiro & Astin, 1998).

Studies undertaken to determine the reliability of the SCI reveal a high level of internal consistency ($r = .70-.89$) and test-retest consistency ($r = .67-.93$) over a 5-week period. Twelve studies presented by the inventory author attest to criterion and construct validity, and these conclusions are supported by independent reviews (Sime, 1998; Wright, 1998). The SCI has been used to investigate issues within and across a wide range of psychiatric and medical populations.

Data Analysis

All statistical analyses were completed using SPSS (Version 10). The relationship between aspects of psychological control and facets of AD was investigated by means of correlation analysis (continuous variables) and t-tests or ANOVA (categorical variables).

Results

Profile of Participants

Demographic and clinical characteristics of the sample are summarised in Table 1. Typical of attendees at outpatient centres in this country and others (Adamson et al., 2000; Ryan, Plant, & O'Malley, 1995), the majority of participants were male (68%), aged in their thirties, with mild to moderately severe AD (as assessed by the LDQ), and with multiple life problems arising from their alcohol use (as assessed by APQ and OCDS). Age and gender were not significantly associated with any SCI scale score.

Relationship between psychological sense of control and aspects of AD

The questions regarding the relationship between psychological control issues (SCI scores) and aspects of alcohol dependence and drinking-related problems (APQ, LDQ, and the three OCDS subscale scores) were initially addressed using correlation analysis (see Table 2). A statistically significant relationship was found between APQ scores (severity of alcohol-related problems) and all four Sense of Control scales (Scales 1-4), along with all four modes of gaining control (Scales 5-8). That is, those participants endorsing more problems reported a profile consisting of reduced overall control (Scale 1), a reduced positive sense of control (Scale 2), an increased negative sense of control (Scale 3), and a reduced overall domain sense of control (Scale 4). As gaining control in one domain may be offset by fear of or loss of control in another domain, a further correlation analysis investigated the significance of the seven domains embedded in Scale 4. This revealed a significant relationship between alcohol problems and the domains of mind, relationships, self, and environment – all in the direction of more problems being associated with less control in these domains. Those endorsing more problems were significantly less likely to utilise positive-

Table 1: Demographic and clinical characteristics of the sample studied

Variable	
Age in years	36.9 (11.2)
Male	68%
Leeds Dependence Scale	11.9 (6.4)
Alcohol Problems Questionnaire	7.8 (4.5)
Obsessive-Compulsive Drinking Scale	
- Resistance/control impairment	10.6 (4.7)
- Obsession	5.7 (3.4)
- Interference	2.8 (2.5)

Data expressed as mean (SD) unless otherwise indicated

assertive or positive-yielding modes of control (Scales 5-6), and significantly more likely to utilise negative-assertive and negative-yielding modes of control (Scales 7-8). No significant association was found between the extent of alcohol-related problems and desire for control (Scale 9) or agency of control (unnumbered scale).

Self-reported severity of dependence (LDQ), specifically focusing on the previous week, was significantly associated with overall sense of control (Scale 1) (see Table 2). Those with more

severe dependence reported a lower overall sense of psychological control. Neither levels of obsessions about drinking ('obsession') nor control over drinking-related thoughts or impulses ('resistance/control impairment') were associated with SCI scores. However, drinking-related activities directly interfering with functional aspects of one's life ('interference') were significantly associated with sense of control. Those experiencing more interference reported a significantly lower overall sense of control (Scale 1),

Table 2. Significant Pearson correlation coefficients between Shapiro Control Inventory and aspects of Alcohol Dependence (n = 50)

SCI Scales	Alcohol Problems Questionnaire	Leeds Severity of Dependence	Obsessive Compulsive Drinking Scale		
			Resistance/control impairment	Obsession	Interference
<i>Sense of Control</i>					
Overall sense of control	-.58**	-.31*			-.36*
Positive sense of control	-.56**				
Negative sense of control	.41**				.38**
Overall domain sense of control	-.51**				-.32*
- Body	-				
- Mind	-.37**				
- Relationships	-.39**				
- Self	-.39**				-.33*
- Career	-				
- Environment	-.34*				
- Other (Impulse control)	-				
<i>Mode of control</i>					
Positive assertive mode	-.48**				
Positive yielding mode	-.31*				
Negative assertive mode	.32*				
Negative yielding mode	.33*				
<i>Motivation for control</i>					
Desire for control					
<i>Agency of control</i>					
Self					
Others					

* p < .05; ** p < .01

a heightened negative sense of control (Scale 3), and reduced overall domain sense of control (Scale 4). A further analysis of the seven domains embedded within this scale indicated that degree of interference was associated with reduced control only in the domain of 'self'. That is, those experiencing more interference reported significantly reduced control over the way they feel about themselves.

Discussion

Historically, LOC has been the construct typically used when investigating the presumed strong and multiple ways in which psychological control functions as an antecedent or consequence of AD. However, like all other areas where LOC has been vigorously employed (Leone & Burns, 2000) the existing literature is of limited utility because of serious limitations of the LOC construct itself. Use of unidimensional measures to assess complex phenomena may be one of many reasons why past research has been unable to establish what mechanisms within CBT make this an effective treatment for AD (Morgenstern & Longabaugh, 2000). Employing a multidimensional measure designed to overcome historically narrow perspectives about control, this study was able to conduct a closer analysis of which control issues are salient.

First, it would seem that specific control issues are closely affiliated with the direct day-to-day problems and practical inconveniences stemming from alcohol use. Both measures assessing these aspects (APQ and OCDS Interference) showed a similar pattern of association in this respect. That is, those participants with more alcohol-related problems reported a control profile marked by a lower overall sense of control, a heightened sense of losing control in areas previously under control (negative sense of control), and a reduced sense of control across multiple domains, especially in the domain of self. With its particular focus on problems, the APQ also suggests that this relationship between alcohol-related problems and psychological control includes the issue of how individuals exert control (SCI modes). Those with more

problems experience too much active control (negative-assertive) and feel helpless and unable to change this (negative-yielding), while concurrently experiencing themselves as less able to use strategies involving flexibility or socially appropriate assertiveness (positive-yielding; positive-assertive). This pattern of responding to control-based issues is diametrically opposed to the pattern most considered to be 'healthy' (Shapiro & Astin, 1998).

In contrast, severity of dependence seems to be related to psychological control only at the most general level. While the notion of denial is a possible explanation for the failure of severity of dependence to link strongly with *specific* aspects of control, this general level finding raises the issue of how those with AD experience their AD-related difficulties. It is possible that they are more reactive to the explicit realm of 'problems' that it causes them, and that the notion of 'dependence' is a construct that is more relevant to clinicians.

Issues of psychological control seem unrelated to other psychological features of AD such as drinking-related obsessions, preoccupations, and compulsions (OCDS scales of resistance and obsessions). Possibly these psychological dimensions relate to issues of dependence rather than issues of control. Alternatively, if denial had been an issue, participants simply may not have recognised or acknowledged these as undesirable psychological features of AD.

This study is limited in its generalisability by including only active attendees to an alcohol and drug service with generally mild to moderate levels of dependency, and on average, slightly fewer alcohol-related problems than some other studies (Drummond, 1990). Active attendees may be biased towards wanting more control or may be biased towards those with an elevated interest in their well being, and as such, are in the position to acknowledge greater alcohol-related problems. Finally, control profiles described by this group may be influenced by the ideologies carried over from earlier treatment experiences. Nevertheless, it is attendees at services such as this who are the recipients of the treatments

incorporating control-based constructs. Furthermore, those with more severe dependence or who need inpatient treatment may have been less able to articulate the subtleties of control issues examined by the SCI. The design of this study precludes the investigation of the temporal relationship underlying this association, and this is an area for future research. Clearly a reduced sense of control may induce further life problems; just as likely, accumulating life problems may engender a sense of less control, and a sense of helplessness regarding one's ability to effect a change in this. For example, reduced income or employment capacity would hinder choice and a sense of control in any population.

Limitations aside, results of this study do provide more detail and specificity regarding the functional relationship between control issues and AD than has previously been reported. This may provide important insights for understanding mechanisms of treatment, and where best to address control issues in bringing about change. It would seem that control constructs may have particular relevance and applicability in addressing alcohol-induced problems rather than the more subtle psychological phenomena of AD (resistance, compulsions, and obsessions), or even AD severity. In other words, treatments focusing on control issues may have particular impact with respect to the more pragmatic and immediate life problems engendered by the dependence. If this is the case, ironically those with significant inability to resist drinking or control thoughts and behaviours around drinking, but with few or no alcohol-related problems, may experience treatments heavily utilising control constructs as less relevant.

Whatever the case, multidimensional measures of psychological control may help to formulate individual treatment plans more clearly by identifying specific domains of poor control, problematic styles of responding to control-based issues, and matters such as motivation for control. For example, if CBT were to be formulated for an individual based on these results, a clinician not only would need to consider overall

issues of control, but also would need to turn attention to helping the client develop alternative control styles, incorporating decisiveness and the ability to let go of such active control in certain circumstances (i.e., positive assertive and positive yielding modes). While a distorted LOC has formed part of traditional explanations of AD, it is significant in this study that the SCI construct most affiliated with LOC (agency of control) had no relationship with the significant clinical features of AD. Yet when other aspects of psychological control were inspected, important patterns of association were revealed.

'Matching' between client control orientations and treatment has been argued for some time now (Foon, 1987; Li, Feifer, & Strohm, 2000), as has the need to identify the active components of CBT (Kadden, 2001). Researchers can only draw comfort from the "ascendancy of CBT as the dominant paradigm for treating AD" (Morgenstern & Longabaugh, 2000, p.1476) once something of the mechanisms of action are also known. This is one of the first studies to provide a sufficiently detailed means by which to approach 'matching' in regard to psychological control. The study supports the contention that a subtle appraisal of the relationship between psychological control and AD is both possible and can contribute to a clinically meaningful formulation of a person's difficulties. In this respect, future studies are also called for to further evaluate the conceptual and theoretical utility of multidimensional measures of control in this population, especially over the course of treatment.

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