



## Problem solving styles among people who use alcohol and other drugs in South Africa



Katherine Sorsdahl <sup>a,\*</sup>, Dan J. Stein <sup>a</sup>, Henri Carrara <sup>b</sup>, Bronwyn Myers <sup>a,c</sup>

<sup>a</sup> Department of Psychiatry & Mental Health, University of Cape Town, South Africa

<sup>b</sup> School of Public Health & Family Medicine, University of Cape Town, South Africa

<sup>c</sup> Alcohol and Drug Abuse Research Unit, Medical Research Council, Tygerberg, South Africa

### HIGHLIGHTS

- We examined the relationship between problem-solving styles and substance use.
- Participants who adopt an avoidance style of coping were more likely to use substances.
- Participants who met criteria for psychological distress were more likely to use substances.

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### ABSTRACT

The present study examines the relationship between problem-solving styles, socio-demographic variables and risk of alcohol and other drug (AOD)-related problems among a South African population. The Social Problem-Solving Inventory–Revised, Center for Epidemiologic Studies Depression Scale (CES-D) and the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) were administered to a convenience sample of 1000 respondents. According to the ASSIST, 32% and 49% of respondents met criteria for moderate to high risk of alcohol use and illicit drug use respectively. After adjusting for the effects of other variables in the model, respondents who were of “Coloured” ancestry (PR = 1.20, 95% CI 1.0–1.4), male (PR = 1.19, 95% CI 1.04–1.37), older (PR = 1.01, 95% CI 1.00–1.02), who adopted an avoidance style of coping with problems (PR = 1.03, 95% CI 1.01–1.05) and who met criteria for depression (PR = 1.42, 95% CI 1.12–1.79) were more likely to be classified as having risky AOD use. This suggests that interventions to improve problem solving and provide people with cognitive strategies to cope better with their problems may hold promise for reducing risky AOD use.

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### 1. Introduction

Alcohol and other drug (AOD) use represent a major public health problem, both globally and in South Africa. Data from a recent, nationally representative community sample, the South African Stress & Health Study (SASH) indicate a high lifetime prevalence (13.3%) and early onset (21 years) of AOD use disorders (Stein et al., 2008); particularly in the Western Cape province where the prevalence of these disorders as well as the social and health problems associated with AOD use is significantly higher than the national average (Peltzer & Ramlagan, 2009).

In South Africa, existing AOD services are almost entirely located at a tertiary specialized level of care (for example, within psychiatric hospitals). As these specialty services are costly to provide, their availability is limited. In addition, the specialized AOD treatment sector is difficult to navigate, and people are often unaware of

when, where or how to access services (Myers, Louw, & Pasche, 2010). An unintended consequence of the province's reliance on this “high threshold” system of care is that people with substance use disorders tend to wait until problems are very severe before they attempt to access services. Together these findings point to the urgent need for developing evidence-based interventions to address problematic AOD use among at-risk populations in the region.

Cognitive-behavioural interventions that decrease risks for the continued use of AODs hold promise for reducing problematic use (Magill & Ray, 2009). A number of mutable cognitive risk factors for AOD use have been identified in the literature, including poor problem solving ability (D’Zurilla & Nezu, 2007). According to D’Zurilla, Nezu, and Maydeu-Olivares’s (2002) understanding of social problem solving, individuals can be classified according to whether they have a positive or negative orientation towards problems and by their dominant problem solving style, with the three most common problem-solving styles being a rational approach to problems, an impulsive-careless style, or problem avoidance. Maladaptive problem solving exists when individuals have a negative problem orientation and an impulsive-careless or avoidant style of problem-solving.

\* Corresponding author at: Department of Psychiatry & Mental Health, University of Cape Town, J2 Groote Schuur Hospital, Observatory, 7925, South Africa.  
E-mail address: Katherine.sorsdahl@uct.ac.za (K. Sorsdahl).

Such maladaptive social problem solving has been associated with a number of psychological, behavioural, and health disorders (Malouff, Thorsteinsson, & Shutte, 2007), including mood (Bell, 2009; Cuipers, van Straten, & Warmerdam, 2007; Dowrick et al., 2000) and anxiety disorders (den Boer, Wiersma, & van den Bosch, 2004). In addition, there is some empirical support for an association between maladaptive problem solving and AOD-related problems in clinical samples of substance dependent individuals (Appel & Kaestner, 1979; Dishion, Loeber, Stouthamer-Loeber, & Patterson, 1984; Intagliata, 1978; McKay, Maisto, & O'Farrell, 1996; Tucker et al., 2005). For example, several studies conducted in the United States have identified significant relationships between impulsive/careless and avoidant problem solving styles and AOD use among high school and college students (Jaffee & D'Zurilla, 2003; Jaffee & D'Zurilla, 2009).

Despite this emerging evidence on the association between AOD use and problem solving, research on this topic has been largely limited to adolescent or young adult populations. This limits our understanding of the relationship between AOD use and problem solving as these findings may have been confounded by high levels of impulsivity that are common during this stage of development (Schneider, Peters, Bromberg, et al., 2012). In addition, the few studies that have examined associations between problem solving ability and AOD use have all been conducted in developed country settings and it is unclear whether these findings are relevant or can be extrapolated to a low and middle income countries (LMIC) such as South Africa. Compared to countries such as the USA, the general population in South Africa (as in many other LMIC) has fewer years of formal education which may influence how people respond on problem-solving measures. These limitations are problematic as they potentially impede the development of culturally appropriate interventions to reduce AOD use among at-risk populations.

This paper begins to address the gaps in earlier research through exploring the relationship between problem-solving styles and risky AOD use among a South African population.

## 2. Methods

### 2.1. Participants

Participants were members of the general South African public. A convenience sample of 1000 participants was obtained through street-intercept survey procedures. Two regions (the Northern and Central suburbs) in the Cape Town metropole were chosen for recruitment so as to ensure a sample broadly representative of the demographics of the Western Cape. The only inclusion criterion for participation was that respondents had to be over 18 years of age.

### 2.2. Procedure

In each location, men and women were approached while in public areas (such as the train station, busy street junctions, and shopping malls) and asked to complete a brief anonymous questionnaire. Potential participants were informed about the confidentiality and anonymity of the process and that participation was voluntary. Consent was then obtained for participation in the study. Questionnaires were administered by teams of fieldworkers who were trained in research methods and the study protocol. The study was approved by the University of Cape Town's Health Research Ethics Committee.

### 2.3. Measures

In addition to a number of socio-demographic variables (such as gender, age, education, employment, race and marital status), the following scales were included in the questionnaire.

#### 2.3.1. Risk of AOD-related problems

The criterion variable of interest was risk of AOD-related problems. This was assessed using the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST; WHO Assist Working Group, 2002). ASSIST scores of 10 or less for alcohol or three or less for illicit drugs indicate that the participant is at low risk for AOD-related health and social problems. In contrast, individuals scoring between 11 and 26 for alcohol or 4 and 26 for illicit drugs is at moderate risk for problems associated with their current pattern of AOD use whereas persons with ASSIST scores greater or equal to 27 are at high risk for AOD-related problems.

#### 2.3.2. Social problem solving

Social problem solving was assessed using the Social Problem-Solving Inventory Revised (SPSI-R:SF, D'Zurilla et al., 2002). The SPSI-R is a 25 item self-report questionnaire, with five subscales that assess functional and dysfunctional approaches toward problem solving. Scores on these subscales range from 0 to 4. These subscales include the five-item Positive Problem Orientation (PPO) scale, with items such as "Whenever I have a problem, I believe it can be solved."; the five-item Negative Problem Orientation (NPO) scale which includes items like "When my first efforts to solve a problem fail, I get very frustrated."; the five-item Rational Problem-Solving (RPS) scale, the five-item Impulsivity-Carelessness Style (ICS); and the five-item Avoidant Style (AS) scale. Higher scores on the NPO, ICS, and AS scales reflect a more maladaptive approach to problem-solving, whereas higher scores on the PPO and RPS subscales indicate a more functional approach to problem solving.

#### 2.3.3. Depression

Depressive symptoms were assessed using the Center for Epidemiologic Studies Depression Scale (CES-D), a 20-item questionnaire designed to assess the intensity of depressive symptoms (Radloff, 1977). The cut-off score for the CES-D is 16. The CES-D has been used previously in Africa but has not been validated in this context (Hamad, Fernald, Karlan, & Zinman, 2008). In the current study, Cronbach's  $\alpha$  for the total CES-D score was 0.86.

### 2.4. Statistical analysis

Data were analysed using Stata version 12.1 (StataCorp LP). As we were interested in participants with more than low levels of risk for AOD-related problems, moderate and high risk participants were first grouped into a single category ("risky AOD use") and compared against low-risk users ("no risk"). Since the prevalence of risky AOD use was not rare (less than 10%), prevalence ratios rather than odds ratios were used to estimate the association between problem solving and risk for AOD-related problems (Thompson, Myers, & Kriebel, 1998). Three models were developed to examine the association between problem solving and risky AOD use. These models adjusted for the influence of socio-demographic variables, problem solving styles and depression. The first model examined the relationship between problem solving dimensions and risky AOD use (considering alcohol and other drug use together), while the remaining two models examined associations between problem solving dimensions and risky alcohol use (model 2) and illicit drug use (model 3) separately. Further analyses were then conducted to examine differences in problem solving styles between participants at low and participants at high risk for alcohol and drug-related problems. Statistical significance was based on 2-sided tests and set at  $\alpha = 0.05$ .

## 3. Results

### 3.1. Sample description

Details of the demographic characteristics of the sample are provided in Table 1. Males and females were almost equally represented in the sample. Race was assessed using the historical race groups defined by

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