BIOGRAPHICAL FACTORS AND MOTIVATION TO CHANGE AS PREDICTORS OF THE TREATMENT OUTCOMES FOR ALCOHOL USE DISORDER

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ABSTRACT

The aim of this study was (i) to explore the biographical (age, race, level of education and marital status) predictors of treatment outcomes for alcohol use disorder and (ii) to investigate the role of motivation to change as a predictor of treatment outcomes for this disorder. The participants consisted of 100 males (50 from each race group – black and white). A biographical questionnaire and the Self-Regulation Questionnaire (SRQ) were employed as measuring instruments. This study demonstrates that a significant relationship exists between age, motivational aspects (introjection and amotivation) and treatment outcomes. These findings should have profound implications for the development of treatment plans and intervention strategies for alcohol use disorder, leading to an improved quality of life in South African communities.

Key words: self-determination theory, motivation to change, biographical factors, alcohol use disorder, treatment outcomes

INTRODUCTION

Alcohol abuse severely affects the homes, health services, economy, education system and industry of our country and is one of the largest contributing factors to the spreading of AIDS, causes of injuries and premature deaths. Its influence knows no boundaries and reaches across social barriers, race, culture, language, religion and gender. The abuse of alcohol, directly or indirectly, affects everyone (Department of Social Development (DSD), 2013).

According to Matzopoulos, Truen, Bowman and Corrigall (2014), the combined tangible and intangible costs of harmful alcohol use to the South African economy was estimated at R300 billion in 2009. Statistics quoted by the South African Department of Trade and Industry (DTI) (2015) suggest that between 20 to 30 percent of hospital admissions are related directly or indirectly to alcohol use and that half of all non-natural deaths in South Africa reflect blood alcohol levels above the legal limit for motorists.

The use of alcohol is recognised as one of the most significant public health concerns facing South Africa (DTI, 2015). The private health sector in South Africa has often been criticised for the lack of skills in dealing with the cultural, social and language context of previously disadvantaged communities, serving mainly the white communities and being located in urban areas, resulting in inaccessibility for the majority of the population (Myers and Parry, 2005). Saloner and Cook (2013) explain that studies evaluating the experience of African-American and Hispanic outpatients have shown those in the racial minority to be less likely to seek treatment, less likely to complete treatment and less likely to achieve recovery. Longer stays in treatment centres of individuals within the racial majority of their geographic area may be due to the tendency of being more comfortable with the members of one's own racial group (Saloner, Carson and Cook, 2014; Delphin-Rittmon, Andres-Hyman, Flanagan, Ortiz, Amer and Davidson, 2012). Understanding the needs of diverse cultures can therefore aid in treatment outcomes.

According to the National Drug Master Plan 2013-2017 (DSD, 2013), further research is needed to better match individuals with substance use disorders (SUD) and treatment programmes, by considering factors such as age, culture, gender, socio-economic status, level of education and geographic location. Various international studies indicate that cultural barriers inhibit the success of conventional treatments (Saloner and Cook, 2013). In South Africa, the importance of understanding cultural factors and alcohol use

disorder (AUD) treatment is increasingly being recognised. Although a number of researchers suggest that there is no substantial difference in the drinking *behaviours* of different racial groups for males, a range of differences can be expected in the perceptions and experiences of the different subgroups (e.g. culture, ethnicity, gender, religion, social class, age) in factors such as sources of stress, coping mechanisms, social support and beliefs. This results in different models of intervention being required to effectively target the addiction problems of the different cultures and other subgroups (Mulvaney-Day, DeAngelo, Chen, Cook and Alegria, 2012; Pasche and Myers, 2012; Straussner, 2012). Mulvaney-Day et al. (2012) also stated that there are few areas in mental health where the relationship between a diagnosis of AUD and cultural perceptions of that diagnosis are as important. It is unknown why the various dimensions of culture have not received the necessary consideration and attention in the development of the treatment plans for AUD. A culture's view of the use of alcohol and other drugs also impacts the ability of individuals to identify their drinking problem, seek help or treatment and maintain a change in behaviour.

Age and level of education have been identified as important variables concerning length of stay in a treatment programme and recovery. It has been shown that the best predictor of retention in treatment centres, from demographic items, was age. This may be due to older people being more aware of the consequences of relapse (Filho and Baltieri, 2012; Gerdner and Holmberg, 2000). South African studies (Peltzer and Ramlagen, 2009) have shown that the risky drinking habits of the youth differ only slightly from those of adults. However, young people need to be targeted with specific treatment programmes, as their needs differ from those of adults. According to Chi, Weisner, Grella, Hser, Moore and Mertens (2014), Stone, Becker, Huber and Catalano (2012), as well as Philpot, Badanich and Kirstein (2003), individuals who begin using alcohol during their adolescent years are more likely to experience lifetime problems with addiction to alcohol when compared to those individuals who initiate alcohol use during their adult years. These results, however, are not in agreement with the findings of Matzger, Delucchi, Weisner and Ammon (2004) or those of Saban, Morojele and Tredoux (2001), who state that age is not a reliable predictor of AUD or completion of treatment.

In addition to age, it was found by Obadeji, Oluwole, Dada and Ajiboye (2015), Reddy, Babu, Pathak and Venkateshwarlu (2014), as well as Greenfield, Sugarman, Muenz, Patterson and Weiss (2003), that lower education attainment has been associated with a higher consumption of

alcohol among males. This has also been identified as being a significant predictor of relapse (Greenfield et al., 2003).

It has been established by Matzger et al. (2004) and Saban et al. (2001) that married individuals tend to have far fewer alcohol-related problems than do divorced, separated or single individuals. This finding is supported by the result of a 2015 study done by Schellekens, De Jong, Buitelaar and Verkes (2015) and another by Sugarman, Kaufman, Trucco, Brown and Greenfield (2014).

Motivation is considered to be a crucial factor in the user deciding on seeking, commencing with, and participating in treatment, as well as achieving positive post-treatment outcomes (Philips and Wennberg, 2014). Cook, Heather and McCambridge (2014) as well as Kennedy and Gregoire (2009) indicate that a lack of motivation in substance and alcohol users is one of the main reasons for dropout and relapse.

Motivation can be defined as an internal force (considerations, reasons and intentions) that moves individuals to engage in, or perform certain behaviours (DiClemente, 2007; Drieschner, Lammers and Van der Staak, 2004). Motivation is not a static trait of a patient - it is dynamic and fluctuating and can be affected by the environment (Miller and Rollnick, 2013).

Vansteenkiste, Soenens and Vandereycken (2005) note that motivation to change (as opposed to motivation for treatment) may play a pivotal role in translating undertaken action into maintained change for the alcohol user. Researchers have found that there is a direct correlation between motivation to change and entry into treatment, compliance, and successful self-change (Freyer, Tonigan, Keller, John, Rumpf and Hapke, 2004; Tonigan, Sobell and Sobell, 2003). Many individuals may enter treatment because of external pressures (e.g. being compelled by others) and even though they may attend treatment, this does not necessarily imply that they are motivated to change their behaviour (De Leon, 2000). The motivation to change should be owned by each individual in order to be integrated into the life of the individual and contribute to treatment success. Research shows that there is an ever-increasing interest among researchers and practitioners in motivation to change and that which drives substance and alcohol users to seek treatment and be motivated to initialise a change in behaviour (Miller and Rollnick, 2013; DiClemente, 2007; Vansteenkiste et al., 2005; Battjes, Gordon, O'Grady, Kinlock and Carswell, 2003).

According to researchers, the concept of 'readiness to change' recognises that individuals with an addictive disorder who seek or participate in treatment, differ significantly in their levels of motivation to change their problem behaviour. There is also substantial evidence that readiness to change is positively related to actual change (Bauer, Strik and Moggi, 2014; Philips and Wennberg, 2014; Penberthy, Hook, Vaughan, Davis, Wagley, DiClemente and Johnson, 2011; DiClemente, Schlundt and Gemmell, 2004). Alcohol users can be classified into different "stages of change" in terms of their readiness to abstain from drinking. A popular perspective used in under-standing the process of changing addictive behaviours is the transtheoretical model proposed by Norcross, Krebs and Prochaska (2011). This model deduces behaviour change to be a process that unfolds over a period and involves a progression through a series of stages. Maintenance is a life-long process which begins after behaviour has been sustained for six months (Norcross et al., 2011). The process of change is not a single sequential transition; it is a movement through the stages marked by regression, relapse and recycling before recovery is reached (DiClemente, 2007). The process of change model also indicates that individuals can either be in a higher or lower stage of motivation to change, rather than the previously held dichotomy of motivated versus unmotivated individuals (Monti, Kadden, Rohsenow, Cooney and Abrams, 2002).

The Self-Determination Theory (SDT) conceptualises the nature of optimal motivation and the broad spectrum of conditions that sustain or destabilise this specific motivation (Vansteenkiste and Sheldon, 2006). This theory has identified three significant issues in the conceptualisation of motivation. Authors Deci and Ryan (2002a) consider *motivation to change* as: (a) the quality of motivation; (b) the degree to which the change represents a true expression of personal values; and (c) the quantity of motivation to change.

Focusing primarily on the quality of motivation, SDT distinguishes between two different types of high quality motivation, namely intrinsic motivation and internalised extrinsic motivation. *Intrinsic motivation* implies engaging in an activity for the purpose of deriving pleasure and satisfaction and is viewed as self-determined (Ryan and Deci, 2000a). *Extrinsic motivation* is defined as the motivation to engage in activities to obtain an external reward, meet external expectations, or avoid punishment. The regulation of the behaviour has not been internalised and is regarded as non-self-determined (Ryan and Deci, 2000b).

SDT suggests that an important determinant of participation and per-severance in treatment concerns is whether individuals feel autonomous

versus controlled in the treatment setting (Wild, Cunningham and Ryan, 2006). To be autonomous is to act out of a sense of choice and desire and originates from an integrated sense of self. Controlled behaviour, in contrast, means to act out of feelings of pressure, either due to external demands or intrapsychic pressures and standards (Deci and Ryan, 2002a). Autonomy versus control, however, is not all or none. It is possible for an individual to have diverse motives. Research shows that most individuals report varied motivation levels that fall along a continuum from more controlled to more autonomous (Zeldman, Ryan and Fiscella, 2004).

Although behaviour is initiated from within a person, rather than by external forces, not all internal motivation can be experienced as autonomous. *Introjected regulation* represents the first stage of the internalisation process. However, it is not self-determined as it deals with past external contingencies that have been internalised within the person. The individual is motivated by obligations and inner pressures such as guilt, anxiety and shame (Deci and Ryan, 2002a; Vansteenkiste and Sheldon, 2006). Next on the continuum of the internalisation process is *identified regulation*. The individual internalises the reasons to engage in the specific activity, as it is judged valuable by the person and will be performed with a sense of choice. The person is now said to be relatively self-determined. Finally, *integrated regulation* is reached when the choice underlying the behaviour is coherent with the other self-structures (what the individual deems as valuable and important to the self) (Deci and Ryan, 2002b; Eccles and Wigfield, 2002).

In addition to the quality of motivation, SDT proposes that it is of crucial importance that the quantity of motivation be considered. When an individual displays an absence of motivation, the concept of *amotivation* is introduced. Amotivated people feel discouraged and helpless as far as their behaviour is concerned. Feelings of amotivation arise when individuals feel incompetent, do not perceive a contingency between their behaviour and outcomes and do not act with an intent to an outcome. Amotivation is regarded as highly non-self-determined (Deci and Ryan, 2002a; Ryan and Deci, 2000a; Vansteenkiste et al., 2005).

SDT supports the notion that it is improbable for external motivation to produce lasting effects in change. SDT also claims that it is of crucial importance that the type of internal motivation be considered, as initiation to change by clients does not always imply a full internalisation of the change. This can be noted in the case of introjected motivation, where internal pressures (guilt, shame and anxiety) are the forces behind the patient being pushed into action. Although controlled motivation may be an influential

type of internal regulation, it is highly improbable that it will result in maintained changes. Effective and lasting change will only be obtained if the decision to enter treatment is autonomously motivated. Thus, it is probable that autonomous, identified reasons for a change in behaviour are stronger predictors of maintained change than controlled, introjected reasons (Vansteenkiste et al., 2005).

Based on the review of the literature, the objectives of this study were (i) to explore biographical (age, race, level of education and marital status) predictors of treatment outcomes for alcohol use disorder and (ii) to investigate the role of motivation to change as a predictor of treatment outcomes for this disorder.

METHOD

Participants

The study was conducted at a prominent alcohol and drug treatment centre in central South Africa. The sample was drawn on a volunteer basis from an inpatient programme. The participants consisted of 100 male inpatients (50 from each race – black and white).

Procedure

Permission to conduct this study was obtained from the treatment centre concerned and participation was voluntary. The interviews were conducted and questionnaires administered by postgraduate psychology students over a six-month period. Initial assessments were done after admission to the treatment centre, but before the commencement of treatment. Due to the inclusion of follow-up interviews, participants were asked to identify themselves but were assured that all information would be treated as confidential. Permission was also obtained from each participant to seek information from a collateral source. A follow-up interview was conducted with each participant, as well as a collateral person (family member/ employer) after a period of six months, from the time of discharge, in order to gain feedback on whether the individual maintained his abstinence, or whether relapse had occurred.

Measuring instruments

Two measuring instruments were used in this study. These pertained to a self-designed biographical questionnaire and the Self-Regulation Question-naire (SRQ-Adapted Form) (Vansteenkiste et al., 2005). Two telephonic

follow-up interviews (participant and a collateral source) were conducted to obtain information regarding the behaviour changes after a six-month period.

Biographical questionnaire

This self-designed questionnaire was used to obtain information relating to the following demographic factors: age (years), number of years completed in formal education and current marital status (married and unmarried). For the purpose of telephonic follow-up interviews, identifying particulars and contact details related to participants and collateral sources were also included.

Self-regulation questionnaire (SRQ – Adapted Form)

The Self-Regulation Questionnaire (Vansteenkiste et al., 2005) was adapted and used to measure 'motivation to change'. The questionnaire required participants to indicate the reasons that they might have for dealing with their alcohol problem in a responsible manner. The reasons were rated on a 5-point Likert scale ranging from 'completely disagree' to 'completely agree'. The scale consists of five subscales, namely: amotivation (e.g. actually, I feel sort of helpless concerning my alcohol problem), external regulation (e.g. because I am forced by others to do something about my alcohol problem), introjection (e.g. because I should come to a better understanding of my own situation), identification (e.g. because I feel that I want to take responsibility for my health) and integration (e.g. because it is consistent with my life goals).

The internal reliability of this instrument was found to be satisfactory for a group of 71 participants with an eating disorder in Belgium, with alpha coefficients above 0.60 for each of the five subscales (Vansteenkiste et al., 2005).

Hypothesis

Based on the objectives of the study, the following research hypothesis was formulated:

Biographical factors and motivation to change can predict group membership (relapsed/maintained) for males with alcohol use disorder.

Statistical procedures

Given that the dependent variable (criterion) was dichotomous and the independent variables (predictors) both categorical (race and marital status)

and continuous (motivation to change, age and years of education), a logistic regression was indicated (Howell, 2012).

RESULTS AND DISCUSSION

Biographical variables

The descriptive statistics (frequencies for categorical variables and means and standard deviations for continuous variables) which form part of the predictor variables of the two groups are given in the next tables (codes given in brackets indicate the values that were assigned to each category during the logistic regression analysis). In order to determine whether significant differences occur between the two groups (relapsed/maintained), statistical tests (χ^2-test in the case of categorical variables and t-tests in the case of continuous variables) were conducted.

Table 1: Frequency distribution of the research group according to race

Race	Relapsed		Maintained		Total	
	N	%	N	%	N	%
Black (0)	29	58.0	21	42.0	50	50.0
White (1)	33	66.0	17	34.0	50	50.0
Total	62	62.0	38	38.0	100	100.0
χ^2-value	0.6791					
Degrees of freedom	1					
p-value	0.4099					

The two racial groups were evenly distributed. Considerably more males relapsed (62.0%) than those who maintained sobriety (38.0%). It has been stated by many professionals in the field that relapse is a common occurrence and is often viewed as an integral part of the treatment and recovery process. More black males maintained sobriety than white males. When considering Mulvaney-Day et al.'s (2012) observation that a culture's view of the use of alcohol and substances impacts the ability of individuals in seeking help and maintaining a change in behaviour, this result warrants further investigation. However, the χ^2-test indicates that this difference is not statistically significant.

Table 2: Frequency distribution of the research group according to marital status

Marital Status	Relapsed		Maintained		Total	
	N	%	N	%	N	%
Married (0)	26	55.3	21	44.7	47	47.0
Unmarried (1)	36	67.9	17	32.1	53	53.0
Total	62	62.0	38	38.0	100	100.0
χ²-value	1.680					
Degrees of freedom	1					
p-value	0.195					

This sample was relatively evenly distributed with respect to the marital status categories (married and unmarried). It should be noted that the group of unmarried males in this category is a combination of divorced, widowed and never married males (N=53). Despite the fact that the χ²-test indicates no significant difference with respect to marital status, a higher proportion of unmarried men (67.9%) than married men (55.3%) relapsed. This finding would appear to concur with the opinions of Matzger et al. (2004), Schellekens et al. (2015), as well as Sugarman et al. (2014), who established that married individuals tend to experience far less alcohol-related problems than divorced or single individuals.

The following two biographical variables (age and years of education) were measured on the interval scale and therefore, the means and standard deviations were calculated and are indicated in Table 3.

Table 3: Means, standard deviations and *t*-values of the biographical variables of respondents who relapsed/maintained

Biographi-cal variables	Relapsed			Maintained			t	p
	N	$\overline{X}$	sd	N	$\overline{X}$	sd		
Age (years)	62	40.74	9.45	38	44.95	8.43	-2.25	0.0268
Years completed (education)	62	11.4	2.89	38	11.3	2.27	0.15	0.8830

The mean age of those who relapsed (40.74 years) is significantly lower (at the 5% level) than those who maintained (44.95 years). This result supports the findings of Battjes, Gordon, O'Grady, Kinlock, Katz and Sears (2004)

and Gerdner and Holmberg (2000), who state that older age has been shown to be the best predictor of a longer length of residence in treatment centres. As mentioned, this may be due to older people being more aware of the consequences of relapse. No significant differences occurred between the two groups regarding their years of education.

Motivation to change

The descriptive statistics (means and standard deviations) with respect to the motivation to change scales (amotivation, external motivation, integration, introjection and identification) are provided in Table 4.

Table 4: Means, standard deviations and *t*-values of the motivation to change scales of respondents who relapsed/maintained

Scales	Relapsed			Maintained			*t*	*p*
	N	$\overline{X}$	sd	N	$\overline{X}$	sd		
Amotivation	62	13.42	3.39	38	11.61	3.89	2.45	0.0159
External	62	18.15	5.15	38	16.34	4.09	1.83	0.0700
Integration	62	18.31	2.46	38	17.87	2.09	0.91	0.3635
Introjection	62	17.86	2.33	38	15.97	3.18	3.41	0.0010
Identification	62	22.81	2.78	38	23.08	2.06	-0.52	0.6026

Significant differences in means occur for *amotivation* (at the 5%-level) and *introjection* (at the 1%-level) between the two groups (relapsed/maintained). In both cases the men who relapsed, in comparison with those who maintained, obtained a higher mean score. This indicates that these men were non-self-determined. Individuals who are amotivated feel incompetent, do not perceive a contingency between their behaviour and outcomes and do not act with an intent to an outcome. Although introjected regulation represents the first stage of the internalisation process it is not self-determined, as the individual is motivated by obligations and inner pressures such as guilt, anxiety and shame (Vansteenkiste and Sheldon, 2006; Deci and Ryan, 2002a). This once again substantiates the findings of De Leon (2000), that motivation for treatment is not synonymous with motivation to change and that many individuals enter treatment because of external pressures and not because they are motivated or prepared to change their behaviour.

Stepwise regression analysis

Logistic regression is applicable when the dependent (criterion) variable is dichotomous. In this study the dependent variable is group membership (relapsed/maintained), and for the purpose of the study, a code of 0 was assigned to an alcohol user who relapsed, while a code of 1 was assigned to an alcohol user who maintained.

The biographical variables (race, age, years of education and marital status) together with the motivation to change scales (amotivation, external motivation, integration, introjection and identification) were used as independent variables in a stepwise regression analysis. The results are given in Table 5.

Table 5: Results of the stepwise logistic regression analysis

Step	Variable	χ^2 - test for the fit of the model			ν	P
		Without predictors	**With predictors**	**Difference**		
One	Intro-jection	132.813	122.031	10.782	1	0.0010
Two	Age	132.813	113.324	19.489	2	0.0001
Three	Amotiv-ation	132.813	106.500	26.313	3	0.0001

During the first step of the analysis, the variable *introjection* was added to the logistic regression equation. A χ^2-value of 10.782 was obtained when it was investigated whether the fit of the model with predictors was significantly better than the fit of the model without predictors (132.813 – 122.031 = 10.782). The decrease in the χ^2-value indicates that the predictor (intro-jection) does indeed make a significant contribution (p = 0.0010) to the prediction of group membership of alcohol users' relapse.

During step two, the predictor *age* of the individual was added to the equation. At this stage the decrease in the χ^2-value is greater (132.813 – 113.324 = 19.489) than in the case where only one predictor was included in the model. The decrease in the χ^2-value indicates that both predictors make a significant contribution (p = 0.0001) to the prediction of group membership of alcohol users' relapse.

Step three entailed the addition of the variable *amotivation* to the equation. After the addition of these three predictors to the model, the decrease in the χ^2-value is 132.813 – 106.5 = 26.313. This implies that the three predictors

forming part of the regression model at this stage, did indeed make a significant ($p = 0.0001$) contribution to the prediction of group membership of alcohol users' relapse.

In order to test each predictor's contribution to the logistic regression model, an analysis of maximum likelihood estimates was performed. The results are given in Table 6.

Table 6: Results concerning the maximum likelihood estimates

Variable	Coefficient	Standard error	Wald χ²	P
Intercept	-3.1152	1.8442	2.853	0.0912
Introjection	0.3005	0.0939	10.242	0.0014
Amotivation	0.1810	0.0732	6.109	0.0135
Age	-0.0073	0.0024	9.565	0.0020

From Table 6, it is clear that the optimal logistic regression equation is as follows:

Log odds = 0.3005 *introjection* + 0.181 *amotivation* – 0.0073 *age* – 3.1152

The regression coefficients of the three predictors indicate that:

a) An increase of one point in *introjection* will <u>increase</u> the log odds of **relapse** by 0.3005 points. In order to work with odds we simply exponentiate the coefficient. In this case $e^{0.3005} = 1.3505$, which implies that an increase of 1 point in introjection multiplies the odds of relapse by approximately 1.35. Thus, an alcohol user who obtained a high score on introjection is 1.35 times more likely to relapse than to maintain.

b) An increase of one point in *amotivation* will <u>increase</u> the log odds of **relapse** by 0.181 points. In this case $e^{0.181} = 1.198$, which implies that an increase of 1 point in amotivation multiplies the odds of relapse by approximately 1.2. Thus, an alcohol user who obtained a high score on amotivation is 1.2 times more likely to relapse than to maintain.

c) An increase of one point in *age* will <u>reduce</u> the log odds of **relapse** by 0.0073 points. In this case $e^{-0.0073} = 0.9927$, which implies that an increase of 1 point in age (older group) multiplies the odds of relapse by approximately 1.0, thus reducing it. Thus, an older alcohol user is 1.0 time more likely to maintain than to relapse.

The findings on the previous page concur with the opinions supported by the SDT theory that controlled motivation (external motivation and introjection)

is highly unlikely to result in maintained changes. In addition, amotivation (a lack of intention and motivation) stands in contrast to both autonomous and controlled motivation, both of which involve intention and motivation. Individuals tend to be amotivated for a behaviour if they believe the behaviour will not yield desired outcomes. Amotivation is also claimed by SDT to be highly non-self-determined.

As far as the factor of age is concerned, the results indicate that it is an important variable concerning recovery. Although studies conducted by Battjes et al. (2004) and Gerdner and Holmberg (2000) show age to be the best predictor of length of residence in treatment centres, this study did not explore the length or completion of treatment but rather the role that age plays in maintaining a behaviour change. Matzger et al. (2004) and Saban et al. (2001), however, state that age is not a reliable predictor of AUD or completion of treatment.

In conclusion, the association between the predicted probabilities and the actual responses can also be indicated. Table 7 provides information concerning the association between the predicted probabilities of group membership and the actual group membership (relapsed) of the alcohol users, after the addition of the three variables to the logistic regression equation.

Table 7: Association of predicted probabilities and observed responses

Association	%
Concordant	78.3%
Discordant	21.5%
Tied	0.2%

Thus, with the use of the three predictor variables (introjection, age and amotivation) it was possible to successfully predict the same outcome (relapsed) in 78.3% of the cases as was actually attained.

SUMMARY OF MAIN FINDINGS

The aim of this study was (i) to explore the biographical (age, race, level of education and marital status) predictors of treatment outcomes for alcohol use disorder and (ii) to investigate the role of motivation to change as a predictor of treatment outcomes for this disorder. Statistical tests (χ^2-test in the case of categorical variables and t-tests in the case of continuous variables) were conducted. Results indicate that more males relapsed than maintained. As far as the factor of race is concerned, more black males maintained than white males. However, the χ^2-test indicates that this difference is not statistically

significant. There were considerably more married males than unmarried males involved in the treatment process, although a higher proportion of unmarried males relapsed. Again, the χ²-test indicates this difference to be statistically insignificant. The difference in age proved to be significant, with the younger males being more likely to relapse than older males. No significant difference occurred between the two groups regarding their educational levels.

In investigating the role of motivation to change as a predictor of treatment outcomes in AUD, it was found that a significant difference occurred in the means for *amotivation* and *introjection*. In both cases the males who relapsed obtained a higher mean score on each scale.

The stepwise regression analysis results indicate that a male with AUD who:

a) obtained a high score on the scale of introjection is more likely to relapse than to maintain.
b) obtained a high score on amotivation is more likely to relapse than to maintain.
c) is older, is more likely to maintain than to relapse.

Thus, with the use of the three predictor variables (introjection, age and amotivation) it was possible to successfully predict relapse in 78.3% of the cases.

An important finding that emerged during this study was the significant representation of South African Police Services (SAPS) members in the research sample. Forty-four percent (44%) of the black participants and 8% of the white participants were employees of this government organisation. This raises the question of whether the various stressors experienced by the SAPS members, including those of being the lowest paid public servants, facing great physical danger, being understaffed and not being acknowledged for their performance, are contributing to the high rates of alcohol use among the members (SAPS, 2014).

In addition to the above finding, it was also noted that only 2% of the black participants were unemployed, whilst the unemployment rate amongst the white participants was 32%. This calls for an exploration of the possible role that unemployment plays in the treatment outcomes.

A significant limitation of this study constitutes the small sample size. In this study, statistical procedures were selected in accordance with the sample size.

Future research foci could include:

- Extended follow-up measures
- Exploration of treatment programmes – content and process
- The role of work-related stressors (for example, SAPS) in the prediction of treatment outcomes
- The role of unemployment in the prediction of treatment outcomes
- All these research questions could be examined with respect to biographical factors (race, age, gender).

CONCLUSION

Few would dispute the fact that problem drinking in South Africa is escalating. The demand for treatment and rehabilitation is growing and, as a result, the limited available resources are heading for saturation. This study demonstrates that a significant relationship has been found to exist between certain biographical factors (age), motivational aspects (introjection and amotivation) and treatment outcomes. These findings should have profound implications for the development of treatment plans and intervention strategies for alcohol use disorder, leading to an improvement of the quality of life in South African communities. It would be beneficial to our society, both socially and economically, to identify individuals who are possibly at high risk for treatment dropout and to structure their management to encourage treatment completion, thereby increasing their chances of success-ful treatment outcomes. The high-risk groups that emerged from this study appeared to be the younger individuals suffering from AUD and those individuals who were unmotivated (*amotivation*), or were motivated through obligations and inner pressures (*introjection*). Intervention programmes therefore need to target this younger age group and the identified motivational stances.

Although research indicates that motivation-based approaches can increase the individuals' motivation and improve treatment outcomes, researchers and clinicians still have much to learn about how to encourage the individuals' motivation. The following few years should see a dramatic advance in the understanding of the role of motivation and its importance in alcohol use disorder treatment and recovery. This understanding will facilitate the promotion of more efficient interventions in order to reach and inspire current substance and alcohol users, regardless of which stage they are at in the process of change.

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