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ALCOHOL AND CANNABIS USE AMONG MINEWORKERS IN SOUTH AFRICA

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A thesis submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in fulfilment of requirements for the degree of Doctor of Philosophy

Johannesburg, 2010

DECLARATION

I, Adenike Frances Yejide Ajani declare that this thesis is my own work. Although the structured interviews aspect of this study formed a single project carried out for the Safety in Mines Research Advisory Committee (SIMRAC) through the Wits School of Public Health, the seven mines involved were distributed between different researchers. The author who was the principal investigator, was allocated two mines for this aspect of the study (mines P1 & P2), and the other five mines (mines G1, G2, D1, C1 & O1) were distributed between three students at the University of the Witwatersrand and have been submitted for the purpose of Master of Public Health degrees. The other aspects of this study, including the focus group discussions, record review, and comparison of the findings of all study mines were however for the sole purpose of this PhD.

This thesis is being submitted in fulfilment of the degree of PhD in Public Health at the University of the Witwatersrand, Johannesburg.

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18th day of October 2010

Dedicated to my husband, Olufemi, and my children, Daniel and Anne.

Thanks for your support.

ABSTRACT

Substance use is associated with mining accidents, increased health care utilisation, and economic loss. Although South Africa is a major mining country, paucity of data exists on substance use among mineworkers. To determine the prevalence of alcohol and cannabis use among mineworkers, the prevalence of accidents associated with substance use, and factors influencing substance use among this population, structured interviews of 1571 participants (involving breathalyser tests for alcohol and urine tests for cannabis), focus group discussions, and a record review of post-accident substance tests were carried out in seven mines. While structured interviews were carried out between March & October 2002, focus group discussions were carried out between May & June 2003, and record review was done between March & September 2004.

Between 10.7% to 24.4% of participants across study mines, with a mean of 15.3%, are likely to be dependent on alcohol, while 4.6% to 21.5% of participants, with a mean of 9.1%, use cannabis. Between 0% and 5.9% of all breath samples, with a mean of 1.9%, contained alcohol $\geq$ 0.10mg/1000ml of breath, the legal limit for professional drivers. However, the majority of positive samples were collected on a Monday and day of sample collection was found to be a confounding factor. In mine P1 in 2003, 1% of samples tested in cases of accidents were positive for alcohol, and in 2002 and 2003, cannabis tests were positive in 4.9% and 3.9% of accident cases tested, respectively.

Low levels of education (p=0.020), low job categories (p=0.004) and lack of awareness of link between cannabis use and accidents (p=0.0001) were found to be positively associated with cannabis use. Being a full-time worker compared to a contract worker (p=0.004) was protective from cannabis use. While being married (p=0.001) was protective from alcohol use, there was no significant difference in the alcohol and cannabis use status of those who were married and lived with their wives at the mines and those who didn't live with their wives but visited them periodically.

Findings of this study where alcohol use for fun (p=0.046) and relaxation (p=0.018) were associated with alcohol dependence, and where misconceptions about the energy-boosting attribute of cannabis, and perception that work is 'most-times to always dangerous' (p=0.012) were associated with cannabis use and alcohol dependence, suggest the use of substances as a coping mechanism and highlight the link between social factors and substance use.

Industry regulations employing a holistic approach and incorporating essential components, such as clear written individual mine policy, health promotion, monitoring and surveillance, Employee Assistance Programmes, disciplinary procedures and wellness programmes, can contribute towards substance use control among this population.

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GLOSSARY

Never user:	One who has never used alcohol/cannabis before.
Current user:	One who currently uses alcohol/cannabis.
Ex-user:	One who has stopped using alcohol/cannabis.
Ever-user:	One who has used alcohol/cannabis before. This category includes current users and ex-users.
CAGE positive respondents:	Respondents who are likely to be dependent on alcohol.
CAGE negative respondents:	Respondents other than those who are CAGE positive.
Urine positive respondents:	Respondents who tested positive for cannabis.
Urine negative respondents:	Respondents who tested negative for cannabis.