Safety in Mines Research Advisory Committee
Final Report

Prevalence of alcohol and cannabis use and reported knowledge, attitudes, and practice regarding its relationship with health and safety on mines in South Africa

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EXECUTIVE SUMMARY

Alcohol misuse is a major public health concern in South Africa today. Substance use, and its relationship with mining accidents, has been documented worldwide. It can also lead increased sickness, deaths, and health care utilisation, which may translate into heavy financial losses to the mining industry. However despite the fact that South Africa is one of the major mining countries in the world, inadequate information exists about substance use among mineworkers. The objectives of this study include the following:

? To determine the prevalence of alcohol and cannabis use among mine workers in South Africa.

? To determine the knowledge, attitudes, and practice regarding alcohol and cannabis use amongst miners, and its relationship to health and safety.

? To determine factors which influence alcohol and cannabis use.

? To make the findings available to all stakeholders, so that appropriate recommendations can be implemented.

A cross sectional analytic study was undertaken in seven mines across the country including two gold mines, two platinum mines, one diamond mine, one granite mine, and one colliery. 1571 participants including contract workers and administrative staff were randomly selected from employee registers. Consent was obtained from participants and structured interviews were carried out to help determine the prevalence and practice of substance use among mineworkers. Breathalyser testing for alcohol was done, and urine samples were obtained for cannabis testing.

Between 0% and 5.9% of breath samples collected across study mines contained alcohol above the legal driving limit for professional drivers of 0.10mg/1000ml of breath, with a mean of 1.9% for all mines. The prevalence of alcohol use varied across mines between 35.1% and 60.2% with a mean of 46.9%. Between 10.3% and 24.4% of respondents (mean of 15.2% across mines) are likely to be dependent on alcohol according to the CAGE criteria, a screening tool for alcohol dependence. However this may be an underestimation because despite reassurance about anonymity, some employees may not have disclosed that they use alcohol, in which case they would not have been eligible to respond to the CAGE questions, which were used to screen for signs of possible alcohol dependence. The prevalence of cannabis use varied between 4.6% and 21.5% across study mines, with a mean of 9.1%.

Most mines with substance use policies have lower percentages of breathalyser results above the legal limit (0%, 0.9%, and 1.1%), than some mines which abide by a general code of conduct (1.5% and 5.9%). Mines with lower prevalence of positive breathalyser results practice random breathalyser
testing of employees at work, as part of their policies and this among other factors, may influence alcohol misuse in the workplace. There was no clear trend in the prevalence of cannabis use and alcohol dependence among participants in mines with policies and those with codes of conduct, though the highest prevalence of cannabis use (21.5%) and breathalyser results above the legal driving limit (5.9%), occurred at a mine which has a code of conduct but no mechanism in place for implementation. The unavailability of baseline data makes it difficult to determine if the prevalence rates observed in this study are improvements on previous rates. These findings however suggest varying levels of control of substance use achieved by different mines. It also suggests that the existence of a policy, which does not contain essential elements that are effectively implemented, is inadequate to control substance use.

Low levels of education and low job categories were found to be positively associated with alcohol misuse (p=0.028 and p=0.009 respectively) and cannabis use (p=0.0026 and p=0.00002 respectively). Being a contract worker was positively associated with cannabis use (p=0.0006). Employees in lower job categories and lower levels of education are more likely to be in the more physically strenuous jobs and may use substances to cope with stress. These may suggest the need to effectively target these categories of employees, including contract workers who may have a higher turnover rate, in control programs. Working underground and living in hostels, were not found to be positively associated with substance use.

20.5% of respondents said alcohol is used among mineworkers to cope with stresses related to their jobs, finances, and families. Other participants said alcohol is used to relax (16.8%), socialise (15.7%), and relieve boredom (5.7%). These reasons may be interlinked and may suggest the need for Employee Assistance Programs (EAPs) to help workers deal with stresses in their environment, and leisure activities where employees some of whom live apart from their families, can socialise.

14.1% of respondents said cannabis helped cope with stress. Misconceptions seem to exist about the properties of cannabis as some participants (27.8%) said it provides strength, which helps to cope with the physical demands of mine work, while 5.4% felt it helped to think and plan better. This suggests a need to delve further into these misconceptions so that accurate information can be disseminated about effects of cannabis.

Although the majority of respondents were aware of a link between alcohol (97%) and cannabis use (85.6%) and workplace accidents, 12.9% of respondents did not feel cannabis use could lead to workplace accidents suggesting a need to disseminate adequate information to all employees.

Participants felt that alcohol and cannabis use could be controlled among mineworkers through awareness programs (21.2%), substance use testing (17.7%), rehabilitation programs to assist those who use substances (10.6%), disciplinary measures for offenders (7.5%), and recreational facilities to relieve boredom (4.8%). These suggest that a multi-approach system is
necessary to control substance use among mineworkers. Industry regulated guidelines on necessary components of a substance use policy may assist in achieving this objective.
MAIN RECOMMENDATIONS

It is recommended that industry regulated guidelines, which include the following components, be developed for controlling substance use among mineworkers:

- Early involvement of stakeholders in program development
- Information gathering about substance use among mineworkers
- Awareness programs
- Protocols for substance use testing
- Disciplinary procedures
- Employee Assistance Programs
- Leisure activities
- Monitoring and evaluation
- Compilation of policy document and dissemination of information
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CONTRIBUTION OF STUDY TEAM MEMBERS

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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 consists of current users and ex-users.