

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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TABLE OF CONTENTS	PAGE
EXECUTIVE SUMMARY	ii
MAIN RECOMMENDATIONS	v
ACKNOWLEDGEMENTS	vi
CONTRIBUTION OF TEAM MEMBERS	vii
TABLE OF CONTENTS	viii
LIST OF FIGURES	xiii
LIST OF TABLES	xiii
GLOSSARY	xv
1.0 INTRODUCTION	1
1.1 Prevalence of substance use	1
1.2 Factors associated with substance use	1
1.3 Effects of substance use	2
1.3.1 Effects of alcohol use	2
1.3.2 Effects of cannabis use	2
1.4 Screening tools for substance use	2
1.4.1 Screening tools for alcohol dependence	2
1.4.2 Screening tools for cannabis use	3
1.5 Measures for control of substance use among mine workers	4
1.6 Motivation for this study	5
1.7 Study aim and objectives	5
1.7.1 Overall Aim	5
1.7.2 Specific objectives	5
2.0 METHODS	6
2.1 Study design	6
2.2 Study site description	6
2.2.1 Selection of study sites	6
2.2.2 Background information on study mines	7
2.2.3 Substance use policies of study mines	7
2.2.3.1 Mine P1	7
2.2.3.2 Mine P2	8
2.2.3.3 Mine G1	8
2.2.3.4 Mine G2	8
2.2.3.5 Mine D1	9
2.2.3.6 Mine C1	9
2.2.3.7 Mine O1	10
2.3 Sampling	10
2.3.1 Sample size calculation	10
2.3.2 Selection of subjects	11
2.3.3 Inclusion / exclusion criteria and replacement technique	12
2.4 Instruments of Measurement	12
2.4.1 Questionnaire	12
2.4.2 Breathalyser testing for alcohol	12
2.4.3 Urine cannabis testing	12

2.5	Pilot study	13
2.6	Data collection	13
2.6.1	Accessing of employees	13
2.6.1.1	Accessing of workers at mines with electronic access gates	14
2.6.1.2	Accessing of workers at mines without electronic access gates	14
2.6.2	Timing of data collection	14
2.6.2.1	Timing of data collection at surface mines	14
2.6.2.2	Timing of data collection at underground mines	15
2.6.3	Challenges encountered	15
2.6.3.1	Lengthy consultation process	15
2.6.3.2	Logistics of accessing employees	15
2.6.3.3	Unavailability of urine sample at time of interview	16
2.6.4	Facilitating factors	16
2.6.4.1	Cooperation of stakeholders	16
2.6.4.2	Masking of results on breathalyser Screen	16
2.6.4.3	Non-invasive nature of requested tests	16
2.6.4.4	Experience gained by research team from mine to mine	16
2.7	Quality assurance	17
2.7.1	Breathalyser testing	17
2.7.1.1	High repeatability of tests	17
2.7.1.2	Calibration of breathalyser	17
2.7.1.3	Pre-test mini questionnaire	17
2.7.2	Urine testing	17
2.7.2.1	Selection of urine testing method	17
2.7.2.2	Collection of urine specimen	17
2.7.2.3	Storage of urine samples	17
2.8	Data analysis	18
2.9	Possible limitations	18
3.0	RESULTS OF BREATHALYSER AND URINE TESTING	19
3.1	Response rate	19
3.2	Breathalyser results	19
3.2.1	Breathalyser results for mine P1	20
3.2.2	Breathalyser results for mine P2	20
3.2.3	Breathalyser results for mine G1	21
3.2.4	Breathalyser results for mine G2	21
3.2.5	Breathalysers results for mine D1	22
3.2.6	Breathalyser results for mine C1	22
3.2.7	Breathalyser results for mine O1	23
3.2.8	Summary of breathalyser results of all study mines	24
3.3	Results of urine cannabis testing	25

4.0	RESULTS OF STRUCTURED INTERVIEWS	26
4.1	Socio-demographic profile of all participants	26
4.1.1	Age	26
4.1.2	Sex	27
4.1.3	Country of origin	28
4.1.4	Main languages spoken	29
4.1.5	Marital status	30
4.1.6	Type of accommodation	31
4.1.7	Cohabitation status of participants with family members	32
4.1.8	Level of education	32
4.1.9	Nature of employment	33
4.1.10	Job category of participants	34
4.1.11	Location of participants' workstations	35
4.1.12	Participants' perception of level of danger associated with their jobs	35
4.2	Results of alcohol use-related variables	36
4.2.1	Classification of participants according to reported alcohol use status	36
4.2.1.1	Identification of never-users, ever-users current users, and ex-users of alcohol in study population	36
4.2.1.2	Reported alcohol use status of respondents' fellow workers	37
4.2.1.3	Participants who display signs suggestive of alcohol dependence	38
4.2.2	Profiling of participants according to alcohol dependence status	39
4.2.2.1	Socio-demographic profile of participants who may be dependent on alcohol	39
4.2.3	Practice of alcohol use	42
4.2.3.1	Drinking partners of current users of alcohol	42
4.2.3.2	Frequency of alcohol consumption by current users	43
4.2.4	Knowledge of hazards of alcohol use in the workplace	44
4.2.4.1	Participants' awareness of relationship between alcohol consumption and mine accidents	44
4.2.5	Perceptions of participants about alcohol use	44
4.2.5.1	Participants' perceptions of reasons why mineworkers drink alcohol	44
4.2.5.2	Participants' perceptions of how to control alcohol use among mineworkers	45
4.3	Results of cannabis use related variables	47
4.3.1	Classification of participants according to reported cannabis use status	47

4.3.1.1	Identification of ever-users, never-users, current users, and ex-users of cannabis in study population	47
4.3.1.2	Reported cannabis use status of respondents' fellow workers	48
4.3.1.3	Comparison of proportion of self-reported cannabis users and urine positive cannabis users	49
4.3.2	Profiling of participants according to cannabis use status	50
4.3.2.1	Socio-demographic profile of cannabis users	50
4.3.3	Practice of cannabis use	52
4.3.3.1	Frequency of cannabis use by current users	52
4.3.4	Knowledge of hazards of cannabis use in the workplace	53
4.3.4.1	Participants' awareness of relationship between cannabis use and accidents	53
4.3.5	Participants' perceptions about cannabis use	53
4.3.5.1	Participants' perceptions of reasons why mine workers use cannabis	53
5.0	DISCUSSION	55
5.1	Prevalence of substance use	55
5.1.1	Prevalence of alcohol use	55
5.1.1.1	Level of sobriety of respondents on duty	56
5.1.2	Prevalence of cannabis use	56
5.1.3	Comparison of possible influence of substance use policies on prevalence of substance use in study mines	56
5.2	Socio-demographic profile of users	57
5.3	Reasons why mineworkers use substances	58
5.3.1	Reasons for alcohol use	58
5.3.2	Reasons for cannabis use	58
5.4	Knowledge and practice of substance use	59
5.5	Participants' recommendations for controlling substance use	60
6.0	CONCLUSIONS	61
7.0	TECHNOLOGY TRANSFER	62
7.1	Training of research assistants	62
7.2	Training of postgraduate students	62
7.3	Provision of background information on alcohol and cannabis use among mine workers in South Africa	62
7.4	Provision of information on planning future research	62
7.5	Dissemination of information on resource centers dealing with substance-related issues	62
7.6	Determination of validity of rapid test kit for cannabis testing	62

8.0	RECOMMENDATIONS	63
8.1	Early involvement of stakeholders	64
8.2	Gathering of information about substance use	64
8.3	Awareness programs	64
8.4	Protocols for substance use testing	64
8.5	Disciplinary procedures	65
8.6	Employee Assistance Programs	65
8.7	Leisure activities	65
8.8	Monitoring and evaluation of programs	65
8.9	Compilation of policy document and dissemination of information	66
APPENDICES		
Appendix 1	Sample size calculation table	67
Appendix 2A	Obtaining collective consent from mine management and Union representatives	68
Appendix 2B	Introductory remarks for research assistants	70
Appendix 3	Information to facilitate planning of data collection	71
Appendix 4	Subject information sheet and consent form	73
Appendix 5	Questionnaire for structured interviews	75
Appendix 6	Mini questionnaire for breathalyser testing	82
9.0	REFERENCES	83

LIST OF FIGURES

Figure	Page
4.1 Alcohol dependence status of participants by mine	39

LIST OF TABLES

Table	Page
2.1 Summary of background information on study mines	7
2.2 Summary of sample size of study mines	11
3.1 Response rate by mine	19
3.2 Positive breathalyser result for mine P1	20
3.3 Positive breathalyser results for mine P2	20
3.4 Positive breathalyser results for mine G1	21
3.5 Positive breathalyser results for mine G2	21
3.6 Positive breathalyser results for mine D1	22
3.7 Positive breathalyser results for mine C1	22
3.8 Positive breathalyser results for mine O1	23
3.9 Summary of breathalyser results by mine	24
3.10 Summary of urine test results by mine	24
3.11 Comparison of proportion of cannabis positive urine samples between commodity mines	25
4.1 Age distribution of participants by mine	26
4.2 Mean age of participants by mine	27
4.3 Sex of participants by mine	27
4.4 Country of origin of participants by mine	28
4.5 Participants' main language by mine	29
4.6 Marital status of participants by mine	30
4.7 Type of participants' accommodation by mine	31
4.8 Cohabitation status of participants with family members by mine	32
4.9 Level of education of participants by mine	32
4.10 Nature of employment of participants by mine	33
4.11 Job category of participants by mine	34
4.12 Location of participants' workstations	35
4.13 Participants' perception of level of danger associated with their jobs	35
4.14 Never-users and ever-users of alcohol by mine	36
4.15 Current users, ex-users, and never-users of alcohol by mine	37
4.16 Reported alcohol use status of respondents' fellow workers	37
4.17 Participants who display signs suggestive of alcohol dependence by mine, with regard to the CAGE criteria	38
4.18 Comparison of proportion of estimated alcohol dependent respondents between commodity mines	38
4.19 Alcohol dependence status of participants by mine	39
4.20 P-values of socio-demographic variables in relation to alcohol misuse	41
4.21 Drinking partners of current users of alcohol	42
4.22 Frequency of current users' alcohol consumption by mine	43

4.23	Participants' awareness of relationship between alcohol consumption and mine accidents	44
4.24	Participants' perceptions of reasons why mineworkers drink alcohol	45
4.25	Participants' recommendations for control of alcohol use by mine	46
4.26	Never-users and ever-users of cannabis by study mine	47
4.27	Current users, ex-users, and never users of cannabis by mine	48
4.28	Reported cannabis use status of respondents' fellow workers	48
4.29	Self-reported cannabis users and urine positive cannabis users	49
4.30	Cannabis use status of participants by sex	50
4.31	P-values of socio-demographic variables in relation to cannabis use	51
4.32	Frequency of cannabis use by current users	52
4.32	Participants' awareness of relationship between cannabis use and accidents	53
4.33	Participants' perceptions of reasons why mine workers take cannabis	54

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.