

**THE KNOWLEDGE, ATTITUDES, PRACTICES AND  
PREVALENCE OF ALCOHOL AND CANNABIS USE AMONGST  
SOUTH AFRICAN DIAMOND MINERS**

**VICTOR NNANNA ONWUKWE**

**A Research Report submitted to the Faculty of Health Sciences,  
University of the Witwatersrand, Johannesburg, in partial fulfillment of  
the requirements for the Degree of Master of Public Health**

**Johannesburg 2005**

## **DECLARATION**

I, VICTOR NNANNA ONWUKWE declare that this report is my own work. It is being submitted for the Degree of Master of Public Health in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

---

\_\_\_\_\_ day of \_\_\_\_\_, 2005

## **DEDICATION**

To Emman Eke Kalu for giving me the avenue to pursue a lifelong dream.

## **ACKNOWLEDGEMENTS**

The course work and the research aspect of the Masters in Public Health programme was a wonderfully transformative and yet sometimes a very difficult experience for me. A number of people played pivotal roles in making sure that I completed this undertaking.

I wish to acknowledge Emman Eke Kalu who apart from providing the necessary financial backing, gave me the inspiration and courage to pursue my dream.

My thanks also go to Ene Tamunoprime, Benedict Chikezie, Gabriel Onyemaobi and Emmanuel Opara for their support.

My sincerest thanks to Florence Akiiki Bitalabehe for introducing me to this project, to SIMRAC for providing the necessary funds for this project and to Professors William Pick and Mary Ross for their support throughout this research project.

I especially thank my mentor and supervisor, Dr. Shan Naidoo, who has always provided a tremendous positive influence on my life.

To my friends and colleagues, Drs. Onyekwelu Bielu, Rashad Hansia and Frances Ajani, I can never thank you enough for keeping me going even after I had given up.

Thanks to Dr. Simeon Odugwu who has taught me the true meaning of friendship and for his assistance in the statistical analysis.

I wish to acknowledge the assistance and support provided by the employees and staff of both the School of Public Health, University of the Witwatersrand and the mine involved in this study.

To Mr. Johann Schoeman and “my fairy godmother” Anne de Jagger, I say a big thank you.

To my lecturers at the School of Public Health especially Drs. Brendan Girdler Brown, Lucille Bloomberg and Kathy Kahn for their inspirational teachings.

To my classmates and discussion group members, my good friends Dele Oranyeli, Ike Adi and Datonye Douglas. I thank you all for everything.

VICTOR NNANNA ONWUKWE.

## **ABSTRACT**

The causative association between alcohol, cannabis use and accidents in the workplace have been shown in some studies. The adverse effects of these on employee's health, work performance, public and industrial safety have also been researched internationally. But there still remains a paucity of information on the knowledge, attitudes, practices and prevalence of alcohol and cannabis use on diamond mines in South Africa even though anecdotal evidence suggests widespread use that is on the rise.

As a result of this, effective intervention strategies to stem the rise have not been developed.

This study assessed the knowledge, attitudes, practices and prevalence of alcohol and cannabis use amongst South African diamond miners.

It was a cross-sectional analytical study which ascertained the knowledge, attitudes and practices of the miners in relation to alcohol and cannabis use through face to face structured interviews. The prevalence of alcohol was ascertained through breathalyser testing and that of cannabis through urine tests. The study site was a large diamond mine located in the northern part of South Africa.

Individual written informed consent was obtained from each of the participants before questionnaire interviews, breathalyser and urine tests were carried out.

All the interviews and tests were anonymous and unlinked. None of the test methods were invasive. The questionnaire was tested in a pilot survey.

This research was commissioned by the Safety in Mines Research and Advisory Committee (SIMRAC).

The reported prevalence for alcohol was 44% whilst the tested prevalence was 1.4%. For cannabis, the reported prevalence was 2.0% whilst the tested prevalence was 2.8%. The significant factors associated with alcohol use were higher educational qualification and type of work. Full time employees were more likely to have ever used alcohol. Reported users of alcohol and cannabis started before starting work on the mines. An overwhelming majority of the participants reported that alcohol and cannabis use could lead to accidents on the mines. A large majority reported that intervention strategies such as education, regular testing of employees and entertainment will decrease the use of alcohol and cannabis.

Possible explanations for the patterns observed in the use of these substances have been given and suggestions on how to influence the use of these substances have been made.

## TABLE OF CONTENTS

	<u>Page</u>
<b>DECLARATION</b>	ii
<b>DEDICATION</b>	iii
<b>ACKNOWLEDGEMENTS</b>	iv
<b>ABSTRACT</b>	vi
<b>TABLE OF CONTENTS</b>	vi
<b>LIST OF TABLES</b>	xi
<b>CHAPTER 1</b>	
<b>1.0 INTRODUCTION</b>	
1.1 BACKGROUND INFORMATION	1
1.1.1 Alcohol	1
1.1.2 Cannabis	2
1.2 STATEMENT OF THE PROBLEM	2
1.3 JUSTIFICATION FOR THE STUDY	3
1.4 LITERATURE REVIEW	5
1.4.1 Alcohol use	6
1.4.2 Cannabis Use	10
1.5 STUDY AIM AND OBJECTIVES	12
1.5.1 Study Aim	12
1.5.2 Study Objectives	12
<b>CHAPTER 2</b>	
<b>2.0 METHODOLOGY</b>	
2.1 DEFINITION OF TERMS	14

2.2	STUDY DESIGN	15
2.3	STUDY METHODS	15
2.2.1	Study Site Description	15
2.2.2	Alcohol and Drug Testing Policy	16
2.2.3	Testing Procedure	16
2.2.4	Rehabilitation	17
2.4	STUDY POPULATION AND SAMPLING	18
2.4.1	Sample size estimation	18
2.4.2	Sampling Method	19
2.5	DATA COLLECTION METHODS	20
2.5.1	Structured Interviews	20
2.5.1.1	Section 1 of the questionnaire	21
2.5.1.2	Section 2 of the questionnaire	21
2.5.2	Assessments	21
2.5.2.1	Alcohol assessment	22
2.5.2.2	Cannabis assessment	23
2.6	PILOT STUDY	23
2.7	DATA ENTRY, PROCESSING AND ANALYSIS	24
2.8	ETHICAL CONSIDERATIONS	24
2.9	POSSIBLE LIMITATIONS AND STEPS TAKEN TO REDUCE THEM	25
2.9.1	Interviews	25
2.9.2	Underestimation of Reported Prevalence	25
2.9.3	Underestimation of Tested Prevalence	26

2.9.4	Overestimation of Tested Prevalence	26
-------	-------------------------------------	----

### **CHAPTER 3**

#### **3.0 STUDY RESULTS**

3.1	PARTICIPATION RATES	28
-----	---------------------	----

3.2	FACTORS THAT MAY PREDISPOSE MINERS TO ALCOHOL AND CANNABIS USE	29
-----	---	----

3.3	PREVALENCE OF ALCOHOL USE	32
-----	---------------------------	----

3.3.1	Reported Prevalence of Alcohol Use	32
-------	------------------------------------	----

3.3.2	Chronic Alcohol Use	33
-------	---------------------	----

3.3.3	Lifetime Alcohol Use by Demographic Variables	33
-------	---	----

3.3.4	Current Use of Alcohol by Demographic Variables	34
-------	---	----

3.3.5	The Distribution of Drinking Companions	37
-------	---	----

3.3.6	Places of Alcohol Usage	38
-------	-------------------------	----

3.4	PREVALENCE OF CANNABIS USE	39
-----	----------------------------	----

3.4.1	Practice of Lifetime Cannabis Use	40
-------	-----------------------------------	----

3.4.2	Current Cannabis use	41
-------	----------------------	----

3.5	PERCEPTIONS, KNOWLEDGE OF, AND ATTITUDES TOWARDS ALCOHOL	42
-----	---	----

3.6	PERCEPTIONS, KNOWLEDGE OF, AND ATTITUDES TOWARDS CANNABIS	44
-----	--	----

3.7	KNOWLEDGE OF SPORT AND RECREATION	47
-----	-----------------------------------	----

## **CHAPTER 4**

### **4.0 DISCUSSION OF RESULTS**

4.1	ALCOHOL	49
4.1.1	Prevalence of Alcohol Use	50
4.1.2	Pattern of Alcohol Use	52
4.1.3	Knowledge of and Attitudes Towards Alcohol Use	53
4.1.4	Reasons for Alcohol Use	54
4.2	CANNABIS	55
4.2.1	Prevalence of Cannabis Use	55
4.2.1.1	Tested prevalence	55
4.2.1.2	Reported prevalence	56
4.2.2	Practice of cannabis Use	57
4.2.2.1	Ever users of cannabis	57
4.2.2.2	Knowledge of and attitudes towards cannabis use	58

## **CHAPTER 5**

### **5.0 CONCLUSIONS AND RECOMMENDATIONS**

5.1	CONCLUSIONS	
5.2	RECOMMENDATIONS	
5.2.1	MULTISTAKEHOLDER POLICY FORMULATION ON ALCOHOL AND CANNABIS USE	61
5.2.2	REHABILITATION SUPPORT PROGRAMMES FOR USERS	62
5.2.3	HEALTH EDUCATION/PROMOTION ACTIVITIES	63
5.2.4	DISCIPLINARY ACTION	64

5.4.1.1 Sport and recreation Activities	65
<b>6.0 REFERENCES</b>	<b>67</b>

## **APPENDICES**

**APPENDIX A: ALCOHOL AND SUBSTANCE USE QUESTIONNAIRE**

**APPENDIX B: SUBJECT INFORMATION FORM FOR PARTICIPANTS**

**APPENDIX C: CONSENT FORM FOR PARTICIPANTS**

**APPENDIX D: MINI QUESTIONNAIRE FOR BREATH ANALYSER TESTING**

## LIST OF TABLES

Table 3.1	Participation rates	28
Table 3.2	Sociodemographic Profile of Participants	31
Table 3.3	Tested Prevalence of Alcohol Use (Results of Breath analyser Testing)	33
Table 3.4	Lifetime Alcohol Use by Demographic Variables	34
Table 3.5	Current Use of Alcohol by Demographic Variables	35
Table 3.6	Distribution of Drinking Companions	38
Table 3.7	Places of Alcohol Usage	38
Table 3.8	Tested Prevalence of Cannabis Use	40
Table 3.9	Lifetime Cannabis Use by Demographic Variables	41
Table 3.10	Knowledge of danger of alcohol	43
Table 3.11	Methods of Reducing Alcohol Use	44
Table 3.12	Perceptions Regarding Use of Cannabis by Fellow Workers	45
Table 3.1.3	Perceptions of Why Fellow Workers Use Cannabis	45
Table 3.1.4	Opinions on Influencing the Use of Cannabis Amongst Miners	47
Table 3.1.5	Opinions Regarding Facilities	48

