

# PREVALENCE AND KNOWLEDGE OF CHRONIC DISEASES OF LIFESTYLE RISK FACTORS AMONGST HIGH SCHOOL LEARNERS IN THE NORTHERN CAPE

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## Abstract

**Introduction:** Studies have indicated that learners engage in harmful lifestyle behaviours which result in risk factors for chronic diseases of lifestyle. Before an intervention can be implemented to decrease chronic diseases of lifestyle, identification of the risk factors are necessary.

### Materials and Methods:

A cross-sectional descriptive study incorporating 197 grade 10 learners at three schools within in the Northern Cape was conducted. Data was collected using two reliable and valid questionnaires which assessed knowledge and health risk behaviour with regards to chronic diseases of lifestyle. Collected data was analysed using SPSS.

**Results:** Only 123 participants completed the health risk behaviour questionnaire, 70% consumed alcohol. One hundred and fifty six participants completed the knowledge questionnaire and 59.2% participants were classified having poor knowledge.

**Discussion:** There is an increase in harmful lifestyle behaviours among learners. It is evident among this study's population that they have limited knowledge regarding risk factors for chronic diseases of lifestyle and they actively engage in these harmful lifestyle behaviours.

## INTRODUCTION

Chronic diseases of lifestyle are a growing cause of death and disability in South Africa. An estimated 29% of South Africans die from conditions linked to chronic diseases of lifestyle (CDLs), which include cardiovascular disease, diabetes, a range of respiratory diseases, and some cancers (WHO, 2011). Most CDLs have the same preventable behavioural risk factors, including unhealthy diets, alcohol use, tobacco smoking and physical inactivity

(WHO, 2011). More than 10 years ago, it was predicted for the period 1990 to 2020 CDLs deaths will increase by 77% globally (Murray & Lopez, 1996). Over a period of nine years, several studies have been conducted in South Africa on health risk behaviour (also referred to as harmful lifestyle behaviours in this article) among high school learners (Reddy et al., 2003; Frantz, 2006; Chutergon, 2010; Reddy et al., 2010; Pharaoh, Frantz & Smith, 2011). A summary of the findings are presented in the table below.

**Table 1: Summary of harmful lifestyle behaviours among youth in SA**

Reference	Population	Smoking	Drinking	Physical inactivity
Youth Risk Behaviour Survey (YRBS), 2002	N=10699 youth in SA	31%	41%	38%
Frantz, 2006	N = 951 high school learners in the Western Cape	31%	21%	32%
YRBS, 2008	N=10270 youth in SA	30%	50%	42%
Chutergon,2010	N=240 high school learners in KZN	60%	67%	33%
Pharaoh et al. 2011	N=1027 high school learners in the Western Cape	64%	99%	39%

From the evidence, it is clear that South African learners engage in behavioural risk factors that may increase their risk for CDLs. These lifestyle behaviours, fostered in adolescence, are usually continued into adult life (Reddy et al., 2010). Before a successful integrated intervention is implemented to decrease the burden of CDLs, early identification of CDL risk factors are necessary (MRC, 2006). Table 1 indicates a trend where engagement in risk factors is increasing among high school learners with respect to smoking and alcohol use. This trend is a concern for health professionals as these risk factors contribute to cardiovascular disease and cancer, which has a debilitating impact on health (WHO, 2011). There is therefore a need for health promotion and education interventions that address these risk factors.

According to the WHO (2006:4), "health promotion in schools can improve children's health and well-being. Among the most effective programmes are those that promote mental health, healthy eating and physical activity". In order to implement effective health promotion strategies, one needs to have an understanding of the targeted populations' knowledge about the phenomena to be addressed. Health education is an important factor in the development of an individual or group to improve their health knowledge. The purpose of health education is to positively influence the health behaviour of individuals and communities. Associated with the introduction of health education

programmes is the challenge of how knowledge translates into behavioural change. Blum (1998) emphasizes that this process of informing and educating the public is our advocacy function. However, the challenge is whether to stop at the information and education stage or attempt to influence actual behavioural change.

The aim of this article was to report on the prevalence of engagement in identified lifestyle behaviours among youth at three schools in the Northern Cape and to determine their knowledge as how these lifestyle behaviours contribute to chronic diseases of lifestyle. This baseline information will assist in identifying the intervention strategies that needs to be implemented among learners in the Northern Cape.

## **MATERIALS AND METHODS**

### **Research Design**

A cross-sectional descriptive study design using surveys was implemented to determine the participation of learners in modifiable lifestyle behaviours and to determine the knowledge of the participants regarding risk factors for CDL.

### **Population and sample**

The population consisted of grade 10 high school learners (N=197) in the Hantam municipality, Namaqua district, Northern Cape, South Africa. The municipality has four high schools, of which three high schools within this municipality agreed to

participate in the study. All grade 10 learners from the three high schools were invited to participate in the study (N=197).

### **Instruments**

Data were collected by means of two valid and reliable questionnaires. An independent translator translated the questionnaires from English to Afrikaans and the questionnaires were translated back into English by another translator. The health risk behaviour survey used in the study was based on the Youth Risk Behaviour Survey used in South Africa (Reddy et al., 2008). For the purpose of this study, only the learners' engagement in smoking, alcohol consumption and physical activity levels are reported on. The knowledge questionnaire assessed the knowledge of the learners with regards to four sections that included: general knowledge, diabetes, hypertension and stroke risk factors. Sections contained questions related to predisposing factors, signs and symptoms. The knowledge questionnaire was designed and tested for validity and reliability by Frantz (2008).

### **Procedure**

Ethical clearance for the study was obtained from the University of the Western Cape Ethics Committee (registration no: 12/3/13), and permission to conduct the study was obtained from the Northern Cape Department of Education, circuit leader of Hantam municipality Education Department and principals of the participating schools. Written informed consent was obtained from the parents and assent from each pupil who participated in the study. The questionnaires were administered in class by either the researcher or educators who were trained in the administration of the questionnaires. The face-to-face administration of the instrument allowed learners to ask questions for clarification and reduced errors resulting from respondents not understanding the instructions.

### **Data Analysis**

Data were coded and entered into Microsoft Office Excel 2007 and then imported into Statistical Package for the Social Sciences (SPSS) version 20. Descriptive statistics, specifically frequencies and percentages were used to summarise demographic data and engagement in harmful lifestyle behaviours. Knowledge scores were categorized into three sections, poor knowledge (score <50%); average knowledge (score 51-70%) and good knowledge (score >70%) (Frantz, 2011). Data was also analysed descriptively using cross tabulations. Inferential statistics were reported using Chi-square with  $p < 0.05$ .

### **RESULTS**

A total of 197 grade 10 learners were invited to participate in the study. The results are classified according to risk behaviour and knowledge questionnaires.

#### **Health Risk Behaviour Questionnaire**

Of the 197 high school learners, 123 learners completed the risk behaviour questionnaire, resulting in a response rate of 62%. Ages ranged from 15 – 19 years with the mean age being 16.1 years (SD=1.7). More males completed the risk behaviour questionnaire than females, 70 (56.9%) and 53 (43.1%), respectively. Most (70%) of the participants indicated to have consumed alcohol, 46% indicated having smoked, 27% were physically inactive. Table 2 presents the harmful lifestyle behaviours that the high school learners engage in, according to gender. Using the Pearson chi-square test there was no significant association between male and female smoking and alcohol consumption. There was however a significant association between male and female physically active levels.

**Table 2: Health risk behaviour according to gender**

	Male	Female	P-values Pearson Chi-Square
Smoking			0.061
• Yes	37/56 (66%)	19/56 (34%)	
• No	33/67 (49%)	34/67 (51%)	
Drink Alcohol			0.982
• Yes	49/86 (57%)	37/86 (43%)	
• No	21/37 (57%)	16/37 (43%)	
Physically active			<b>0.018*</b>
• Yes	57/90 (63%)	33/90 (37%)	
• No	13/33 (39%)	20/33 (61%)	

**\*significant**

Most of the learners (35.1%) who smoked, started smoking between the ages of 14-15 years and the majority of them were social smokers (79.6%). Social smokers in this study are defined as smoking while socialising (Waters, Harris, Hall, Nazir & Waigandt 2006). Similarly, the majority of those who drank alcohol (40.7%) started drinking when they were older than 15 years old. Most (98.8%) of those who consume alcohol, were social drinkers. Similarly social drinkers were defined as learners drinking while socializing. A higher percentage of males than females consumed alcohol, smoked and were more physically active.

**Knowledge questionnaire of CDL risk factors**

A total of 157 learners completed the knowledge questionnaire, hence a response rate of 80%. Percentages of participants who score poor knowledge (score < 50%) for stroke, hypertension and diabetes sections were 39.5%, 57.3% and 74.5%, respectively. More than half (59.2%) of the participants scored less than 50% for the total knowledge questionnaire score. One hundred and three (65,6%) participants reported that they were not taught about CDL and risk factors at school.

**Table 3: Summary of information on the knowledge questionnaire (N=157)**

Question	Response	Frequency (%)
Ever heard of CDL	Yes	60 (38.2%)
	No	97 (61.8%)
Factors that contribute to CDL	Smoking	123 (78.3%)
	Physical activity	11 (7.0%)
	Loud music	19 (12.1%)
	Obesity	85 (54.1)
	Balance diet	19 (12.1%)
	Alcohol	119 (75.8%)
	Stress	109 (69.4%)
	Medication	13 (8.3%)
<b>Final overall knowledge scores achieved</b>		
Poor knowledge < 50% (0-12/26)		<b>59.2 %</b>
Average knowledge 51-70% (13-18/26)		<b>35.0 %</b>
Good knowledge > 70% (19-26/26)		<b>5.6 %</b>

With reference to the individual sections of the questionnaire, a mean score of 2.29 (1.13) was obtained for the hypertension section, 4.32 (2.00) for the diabetes section and 4.97 (2.46) for the stroke section. With regards to the grand-total score for the knowledge questionnaire the mean score was found to be 11.59 (4.49).

## DISCUSSION

The study was designed to determine the modifiable lifestyle behaviours as well as the knowledge of grade 10 learners with regards to CDL risk factors. Harmful lifestyle behaviours formed during childhood years may carry into adult life (DeGenna, 2005). A habit like tobacco smoking that commenced in childhood can become addictive before adulthood. The findings indicated that 45.5% of learners smoked and 69.9% of learners consumed alcohol. Comparing the current findings to the YRBS results of 2008, there is evidence of an increase in the number of learners who consume alcohol and smoke. In the 2008 YRBS report, the Northern Cape results found that 33.8% of learners smoked and 57.2% learners consumed alcohol. Physical inactivity levels have decreased, this study found that 26.8% of the learners were physically inactive whereas 2008 YRBS study reported a physical inactivity level of 48.6%. Similarly, the 2002 YRBS report found that 31% of young people smoked, 41% consumed alcohol and 38% of learners were physically inactive in the Northern Cape sample. Thus there is evidence of an increase in the participation of harmful lifestyle behaviours by high school learners of the Northern Cape.

The Health Belief Model (HBM) suggests that knowledge is one of the modifiable factors as it can affect the perceived threat to contract a disease (Hayden, 2009). An individual experiences a perceived threat to develop a disease when s/he believes that the disease is serious and more susceptible to develop the disease (Hayden, 2009). It has been found that a perceived threat has led to behavioural change to reduce the risk of developing the disease (Hayden, 2009). Almost 60% of participants in the study had inadequate knowledge related to the risk factors for chronic diseases of lifestyle. It is therefore possible that these learners are unaware of the perceived threat, resulting in their high levels of participation in modifiable lifestyle behaviours. This lack of knowledge may be related to

the fact that approximately 66% of participants indicated that they were not taught about CDLs at school. A study conducted by Siapush et al. (2005) highlighted that the majority of people are aware of the association between engaging in behaviour and the possible disease consequence. However, awareness that smoking causes other conditions such as stroke is not commonly reported. In the current study, some of the participants were aware that alcohol, obesity, smoking and stress were risk factors for CDLs; yet they still engaged in behaviours like smoking and drinking. It may be evident that these high school learners lack the ability to comprehend the lasting effects of the harmful lifestyle behaviours they indulge in. Hence an intervention educating learners about the effects of the harmful lifestyle disease are necessary.

In 2011, Frantz found similar knowledge results amongst youth (mean knowledge score =  $13.08 \pm 3.48$ ) in the Western Cape prior to an intervention. Chutergon (2010) conducted a similar study at a school in Kwazulu-Zulu Natal and reported a mean knowledge score of  $12.8 \pm 4.3$ . The current knowledge score is low  $11.59 \pm 4.49$ . It is therefore evident that among youth in schools in this study, there is limited knowledge regarding risk factors for chronic disease of lifestyle.

Currently the public health burden linked to CDL lies upon the individual, family, community and country. According to the WHO (2005), disability a result of CDL robs individuals of healthy years of living. CDL deaths are usually assumed to be only prevalent amongst the elderly, but CDL deaths occur at younger ages in low to middle socio-economic countries (WHO, 2005). The increase in CDL can contribute to the economic burden of a country. Interventions are needed to avoid negative effects on economical development (WHO, 2005). Interventions earlier in life might have a long lasting effect allowing for the possibility to decrease chronic disease of lifestyle pandemic.

The results confirm that modifiable risk factor behaviours for CDLs are increasing among South African youth; thus highlighting the need for prevention interventions. Health education programmes at schools can be an efficient means of decreasing health risk behaviour among high school learners by aiming to educate them on the effects of

harmful lifestyle behaviours. This is supported by the fact that schools are identified as suitable health promoting settings.

## CONCLUSION

This study highlights the continuing need for information regarding chronic diseases of lifestyle in order to improve knowledge among high school learners. It also emphasises that health education and promotion is needed. This would require the school to take a leading role and supply guidance and knowledge in the area of risk factors related to chronic diseases of lifestyle.

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