

# Health-Promoting Lifestyle Behaviours Among Primary Healthcare Professional Nurses in Eastern Cape Province, South Africa

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## Abstract

Nurses play significant roles in health promotion and health education about healthy lifestyle practices and are considered role models of healthy lifestyle behaviours. It is unclear if their knowledge of healthy lifestyle choices translate to practice. This study assessed the lifestyle behaviours of primary healthcare professional nurses in the Eastern Cape Province, South Africa. This descriptive, cross-sectional study involved 203 purposively selected primary healthcare nurses in Eastern Cape Province, South Africa. We utilised the WHO STEPwise questionnaire to assess the lifestyle behaviour (smoking, alcohol use and physical activity) of the nurses. Descriptive and inferential statistics were carried out at a significance level of  $p < 0.05$ . The participants' mean age was 45.17 (Standard Deviation  $\pm 11.26$ ) years. Of all the participants, 27% had ever taken alcohol, and 18% currently use alcohol. Only 8% had ever smoked and of these, 3% currently smoke. Of all the participants, 33% do not engage in physical activities, and only 29% of them met the WHO recommendation for being active. Most of them were aware of the benefits of physical activities. Majority of the participants cited lack of time (74%) and lack of commitment (63%) as barriers to physical activity and few of them cited health challenges (3.9%). Among the primary health care professional nurses in this setting, we found a high prevalence of alcohol use and low prevalence of smoking and physical activity among primary health care nurses in this setting. There is a need to implement effective workplace strategies and wellness programmes that will foster healthy lifestyle practices among the nurses.

**Keywords:** nurses, lifestyle behaviour, primary healthcare, Eastern Cape, South Africa

## List of abbreviations

NCDS: Non-communicable diseases

PHC: Primary Health Care

WHO: World Health Organisation

SD: Standard Deviation

EC: Eastern Cape

BCMM: Buffalo City Metropolitan Municipality

## 1. Introduction

Non-communicable diseases (NCDs) are significant public health, developmental, social and economic concerns, and are the foremost causes of morbidity and mortality worldwide (WHO, 2017). Various modifiable factors like smoking inadequate physical activity, poor dietary practices, harmful alcohol use, overweight and obesity are majorly responsible for the increase in the burden of NCDs (WHO, 2017). Irrespective of the gruesome burden associated with non-communicable diseases, they are largely preventable through the prevention of the associated risk factors.

While the focus of policy makers and researchers regarding the burden of non-communicable diseases has been on the general population, little attention is paid to the burden among health care workers. This might be as a result of the general belief that healthcare workers are more knowledgeable about NCDs and associated lifestyle behaviours (Blake & Harrison, 2013; Skaal & Pengpid, 2011). However, their knowledge might not necessarily translate to

practice as high prevalence of unhealthy behaviours, overweight and obesity has been reported among nurses (Blake, Mo, Lee, & Batt, 2012; Blake, Goon et al., 2013; Malik, Blake, & Batt, 2011; Mo, Blake, & Batt, 2011; Phiri, Draper, Lambert, & Kolbe-Alexander, 2014; Skaal & Pengpid, 2011; Stanulewicz, & Griffiths, 2017).

Worryingly, this occupational group are at a very high risk as some of the non-communicable disease have been linked to working conditions such as long duration of work, high job expectations and rotational shifts which characterise the healthcare system (De Bacquer et al., 2009; LdCÁo, 2010; Morikawa et al., 2008; Zhao & Turner, 2008; Zhao et al., 2011). These factors put the nurses under stress and afford them little opportunities to engage in activities that promote health such as physical and recreational activities (Blake & Harrison, 2013; Blake et al., 2011; Melnyk, Hrabe, Szalacha, 2013; Naidoo & Coopoo, 2007). Nurses are reported to engage in ineffective coping mechanisms and unhealthy practices such as alcohol and substance abuse, smoking, and consumption of unhealthy diet which further increase their risk (Malik, Blake, Batt, 2011; Hensel, 2011).

Several studies conducted among nurses in various countries have highlighted a high burden of NCDs, overweight, obesity and unhealthy lifestyle behaviours such as alcohol use, smoking, physical inactivity and poor dietary practices among them (Blake & Harrison, 2013; Kurnat-Thoma, EL-Banna, Oakcrum, & Tyroler, 2017; Miller, Alpert & Cross, 2008; Naidoo & Coopoo, 2007; Phiri et al., 2014; Skaal & Pengpid, 2011). Generally, high burden of obesity, non-communicable diseases such as obesity (Adeniyi, Longo-Mbenza, & Goon, 2015; Owolabi, Goon, Adeniyi, Adedokun, & Seekoe, 2017a), diabetes (Adeniyi, Yogeswaren, Lonog-Mbenza, Goon, & Ajayi, 2016; Owolabi, Goon, Adeniyi, & Seekoe, 2016), hypertension (Day et al., 2015; Owolabi, Goon, Adeniyi, & Seekoe, 2016; Peer, Steyn, Lombard, Gwebushe, & Levitt, 2013) and their associated factors have been documented among South African adults, including nurses (Goon et al., 2013; Naidoo & Coopoo, 2007; Skaal & Pengpid, 2011; Van den Berg, Okeyo, Danhausser, & Mariette, 2012).

Health promotion and preventative measures, both formal and informal, are considered core components of nursing care (Blake, Malik, Mo, Pisano, 2011; Miller, Alpert, & Cross, 2008). Unhealthy lifestyle behaviours among nurses and other health workers have a two-fold impact; aside the detrimental effect on the health of the nurses, it could also impede the reception of lifestyle modification counsels given to the patients and the community by such nurses. Nurses' direct contact with patients, families and communities offer them the opportunity to influence changes in health behaviours among the general population (Blaber, 2005). These roles could be threatened by a high burden of NCDs among nurses (Blake et al., 2012; Bogossian et al., 2012). High burden of NCDs and unhealthy lifestyle practices among nurses could constitute significant threat to the individual and the healthcare system and adversely affect practice (Blake et al., 2012; Melynck, Hrabe, & Szalacha, 2013; South African Department of Health, 2012). Also, nurses with poor health behaviour may have a lesser likelihood of offering advice on the benefits of healthy lifestyle behaviours (Seir & Osler, 2002; South African Department of Health, 2012). Likewise, it may be unrealistic to expect patients and communities to be committed to plans on living a healthy lifestyle when the health educator advocating such behaviours does not model it (Miller, Alpert, & Cross, 2008). Finally, high burden of NCDs and unhealthy lifestyle practices among nurses and other health workers could impact on the healthcare workforce, in terms of reduced productivity and increased absenteeism at work (Bogossian et al., 2012; Skaal & Pengpid, 2011).

Although some studies have evaluated the burden of non-communicable disease, overweight and obesity among nurses and nurses in training in South Africa (Goon et al., 2013; Naidoo & Coopoo, 2007; Skaal & Pengpid, 2011; Van den Berg, Okeyo, Danhausser, & Mariette, 2012), only a few assessed their lifestyle behaviours such as tobacco use, alcohol use, dietary practices as well as engagement in physical activities, which are major contributors to the growing burden of NCDs. The few studies that assessed their lifestyle behaviours focused on their dietary and physical activity patterns (Phiri et al., 2014; Van den Berg et al., 2012), neglecting two other important factors; smoking and alcohol use. These previous studies have both documented poor dietary practices and physical inactivity among nurses in South Africa. Also, such previous studies considered only nurses in secondary and tertiary level of healthcare, neglecting nurses at the primary healthcare level who are mostly involved in primary healthcare which include health promotion and preventive activities. Therefore, the objective of this study is to assess the lifestyle behaviours (smoking, alcohol use, physical activities pattern) of primary health care professional nurses in an economically disadvantaged province of Eastern Cape, South Africa. In this setting, primary healthcare professional nurses are nurses who have undergone at least four years of formal training as a nurse, with an additional specialisation experience in primary health care/clinical health assessment and licensed to assess patients, diagnose and prescribe. The primary health health professional nurses are also the nurses who run the primary health care and community health care facilities. The findings of this study will help to determine how much the primary healthcare nurses in this setting model the lifestyle behaviours they advocate for. Also, such information is essential in designing appropriate workplace interventions targeted towards promotion

of healthy lifestyle behaviour and reduction of the burden of NCDs among health workers.

## 2. Methodology

### 2.1 Study Area and Design

A quantitative approach with a descriptive, cross-sectional research design was used to screen for the prevalence of overweight and obesity among professional primary health care nurses, working across 41 primary healthcare (PHC) facilities in Eastern Cape. The Eastern Cape forms part of the nine provinces of South Africa. Its capital is in Bisho. Eastern Cape Province was created in 1994 from the Xhosa homelands of Transkei and Ciskei along with the eastern segment of the Cape Province. It forms a base for the Xhosa people. The province has two metropolitan municipalities; Buffalo City Metropolitan Municipality (BCMM), Nelson Mandela Metropolitan Municipality and six districts; Amathole, Joe Gqabi, O.R Tambo, Sarah Bartman, Chris Hani and Alfred Ndzo.

### 2.2 Sampling

A purposive sampling was used to select primary health care nurses from four randomly selected districts. First, four of the six districts and two metropolises of the Eastern Cape Province were randomly selected using simple randomization, namely, Buffalo City Metropolitan Municipality, O.R Tambo, Chris Hani, and Sarah Baartman Districts. The randomization was done by assigning numbers to the eight districts and these numbers were wrapped up by someone not involved in the study. After this, the researcher blindly selected four. From the four randomly selected districts/municipalities, 41 primary health care centres were then selected using convenience sampling.

There are approximately 880 nurses in the selected districts (OR Tambo = 250, Chris Hani = 230, Sarah Baartman = 100, and BCMM=300). At a confidence level of 95%, a sample size of 268 nurses would have been required. However, only 203 (76%) primary health professional nurses (PNs) were accessible and included in the study due to shortage of staff in PHC facilities, especially in rural districts like OR Tambo. The study was conducted between February and May, 2017.

### 2.3 Eligibility Criteria

Participants were included in the study if they were PHC professional nurses, aged 18 years and above, practicing in the PHC facilities, on duty and willing to participate in the study during the day of data collection. Exclusion criteria included pregnancy or any form of debilitation in such a manner that affects taking anthropometric measurement.

### 2.4 Data Collection Instrument

The modified WHO STEPwise questionnaire with three major sections; demographic data, behavioral variables and anthropometric data was used for data collection. In order to determine suitability of the instrument, a pilot study was conducted among 20 PHC professional nurses at Mnquma sub district, under Amathole district.

### 2.5 Data Collection

Face-to-face interview was used to obtain demographic and behavioural characteristics to ensure completeness of information. Sex, age, marital status, level of education, employment status, duration of practice and average monthly income were the demographic variables. Lifetime and current alcohol use was assessed by self-reporting of alcohol use using the questions; "have you ever taken any alcoholic drink?", "do you currently take alcohol?" "In the past 30 days, have you taken any alcoholic drink?", "In the past 30 days, how often did you take alcohol?", How many standard bottles of alcohol (containing 10g of ethanol) do you take at a sitting?".

Regarding tobacco use, lifetime and current tobacco use were also assessed. The questions asked were: "have you ever smoked or use any tobacco products?" "In the last 30 days, have you used any tobacco product?" "What type of tobacco product do you use?" and "how many sticks do you use on an average daily?".

Physical activity pattern was assessed with the following questions: Do you engage in any form of physical activity? How many days do you engage in moderate/vigorous activities? How many minutes do you spend on each day? The overall activity pattern was accessed using the WHO recommendation for physical activity; 150 minutes per week for moderate-intensity activities or 70 minutes per week of vigorous-intensity activity per week. Participants were categorised as either active or not active based on the Yes/No answer. Those who reported engaging in activities were then further categorised into those who met the recommended minutes and those who does not. The perceived benefits of physical activity and barriers were assessed. Data collection took place between February and May 2017.

### 2.6 Ethical Consideration

The ethical clearance was obtained from the Research and Ethics Committee of the University of Hare (Reference number; EC-2015RP10-426) which followed the Helsinki Declaration. Permission to carry out the study was obtained from the Eastern Cape Department of Health (ECDoH), district managers, sub district managers and facility managers. We obtained written informed consent to participate in this study from all participants. We ensured anonymity and confidentiality throughout the study.

### 2.7 Data Analysis

Data were analysed using SPSS version 23 for windows (SPSS Inc., Chicago, IL, USA). We expressed data as mean values  $\pm$  standard deviations (SD) for continuous variables. Counts (frequency = n) and proportions (%) were reported for categorical variables. Percentages were compared using chi-square test. Descriptive and inferential statistics were used for determining the prevalence and determinants of overweight and obesity among the study participants. All the variables which were significantly associated in the bivariate analysis were included in the logistic regression model analysis. An unadjusted regression analysis was done by computing models for each of the independent variables while the adjusted regression analysis included a model containing all the independent variables which was then adjusted for confounder, smoking. A p-value of  $< 0.05$  was considered statistically significant.

### 3. Results

The demographic characteristics of participants are shown in Table 1. The mean age of the study participants was 45.17 (SD $\pm$ 11.26) years. The average duration of practice was 15.98 (SD $\pm$ 11.07) years. Almost half of the participants were married (49.8%) and majority (65%) have a diploma certificate in nursing earning more than R15,000 (60.6%).

Table 1. Socio-demographic characteristics of participants by gender

Variables	All	Female	Male
Age (years)			
21 to 30	26(12.8)	19(10.6)	7(29.2)
31 to 40	50(24.6)	41(22.9)	9(37.5)
41 to 50	42(20.7)	39(21.8)	3(12.5)
51 to 60	74(36.5)	69(38.5)	5(20.8)
61 to 70	11(5.4)	11(6.1)	0(0.0)
Marital Status			
Single	83(40.9)	71(39.7)	12(50.0)
Married	101(49.8)	90(50.3)	11(45.8)
Divorced	9(4.4)	9(5.0)	0(0.0)
Separated	1(0.5)	1(0.6)	0(0.0)
Widow/Widower	9(4.4)	8(4.5)	1(4.2)
Number of Children			
1	37(20.4)	33(20.4)	4(21.1)
2	61(33.7)	58(35.8)	3(15.8)
3	58(32.0)	49(30.2)	9(47.4)
4	18(9.9)	16(9.9)	2(10.5)
5	5(2.8)	5(3.1)	0(0.0)
6	1(0.6)	1(0.6)	0(0.0)
7	1(0.6)	0(0.0)	1(5.3)

<b>Level of Education</b>			
Diploma (Three-year nursing programme)	132(65.0)	117(65.4)	15(62.5)
Degree	67(33.0)	58(32.4)	9(37.5)
Post-graduate Diploma	3(1.5)	3(1.7)	0(0.0)
Masters	1(0.5)	1(0.6)	0(0.0)
<b>Race</b>			
Black	195(96.1)	171(95.5)	24(100.0)
Coloured	8(3.9)	8(4.5)	0(0.0)
<b>Duration of Practice</b>			
1 to 10 years	72(40.7)	59(38.1)	13(59.1)
11 to 20 years	41(23.2)	37(23.9)	4(18.2)
21 to 30 years	44(24.9)	41(26.5)	3(13.6)
31 and above	20(11.3)	18(11.6)	2(9.1)
<b>Income</b>			
10000 to 15000	65(39.4)	55(38.5)	10(45.5)
Above 15000	100(60.6)	88(61.5)	12(54.5)

Of all the participants, 27% had ever taken alcohol, while 67% of those who reported ever consuming alcohol (18 percent of the entire participants) still currently consume it.

### 3.1 Binge Drinking

The mean number of standard bottles of alcohol taken by the nurses was 4.31 bottles (SD±3.2), with a higher mean among males (5.62) compared to females (3.55).

Of all the socio-demographic characteristics, only male sex, never married, younger age were significantly associated with ever using alcohol among the study participants.

Table 2. Association of lifetime alcohol consumption with socio-demographic characteristics

Variables	Consume Alcohol	Do Not Consume Alcohol	P-Value
<b>Gender</b>			
Male	18(75.0)	6(25.0)	<0.001
Female	36(20.1)	143(79.9)	
<b>Marital status</b>			
Never married	29(34.9)	54(65.1)	0.019
Ever married	25(20.8)	95(63.8)	
<b>Age (years)</b>			
21 to 30	19(73.1)	7(26.9)	<0.001
31 to 40	18(36.0)	32(64.0)	
41 to 50	10(23.8)	32(78.2)	
51 to 60	7(9.5)	67(90.5)	
61 to 70	0(0.0)	11(100.0)	
<b>Income</b>			
10000 to 15000	23(35.4)	42(64.6)	0.080
Above 15000	24(24.0)	76(76.0)	

### 3.2 Smoking Behaviour Among Nurses

Of the 203 participants, only 8% had ever smoked and of these, 47% (3 percent of the entire participants) currently smoke.

### 3.3 Physical Activity Pattern

Of all the participants, 33% do not engage in physical activities, and of the remaining 67%, only 29% of them met the WHO recommendation for being active.

Of all the participants, 33% do not engage in physical activities, and of the remaining 67%, only 29% of them met the WHO recommendation for being active. Most of them were aware of the benefits of physical activities concerning weight loss (93.1%), better sleep and alertness (95.5%), and for better heart functions (96.5%). The majority of the participants cited lack of time (74.0%) and lack of commitment (63.3%) as barriers to physical activity and few of them cited health challenges (3.9%) (Figure 1).

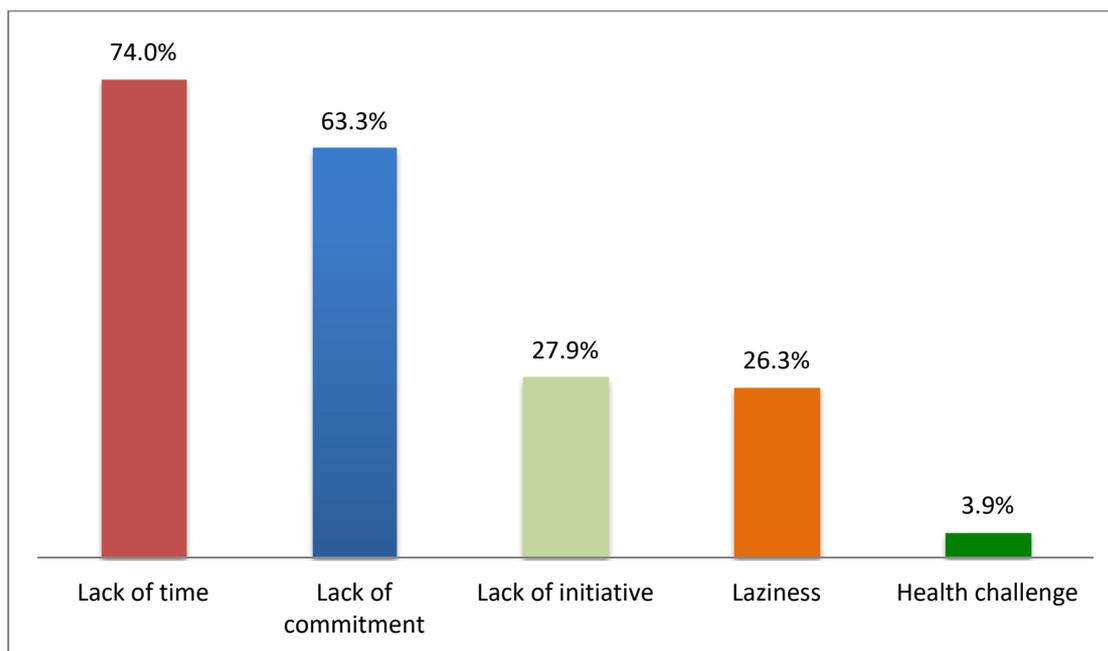


Figure 1. Barriers to physical activity participation

## 4. Discussion

This present study examines the lifestyle behaviours (smoking, alcohol use, and physical activity) of primary healthcare professional nurses in Eastern Cape, South Africa. These factors among others have been identified as the underlying factors responsible for as much as 80% of the burden of non-communicable diseases (WHO, 2011). Of the 203 nurses involved in this study, only eight percent had ever smoked or used any tobacco product and only three percent of the nurses currently smoke. This proportion of nurses who had ever smoked and are current smokers is quite lower than the reported rate among nurses in Turkey (40%) (Adamek et al., 2012) and 45% (Sezer, Guler, & Sezer, 2007), Japan (18.6%) (Ohida, Osaki, Kobayashi, Sekiyama, & Minowa, 1999) and the United States (8%) (Sarna, Bialous, Sinha, Yang, & Wewers, 2010) When compared to the general population, the prevalence reported in this study is lower than the 15% reported among adults in the same setting (Owolabi et al., 2017c). This is commendable as this shows that the nurses in this setting detest smoking and this might have influence on the health education they offer to patients concerning smoking. Also, a decline in the rate of smoking among nurses has been shown to be accompanied by a fall in the prevalence of smoking in the general population (Sarna, Bialous, Sinha, Yang, & Wewers, 2010). Various workplace policies such as prohibition of smoking at workplace, especially at the healthcare settings might have contributed to this. However, there is still a need to further encourage the nurses and assist those who still smoke to quit smoking.

Primary healthcare professional (PHC) nurses play a significant role in health educating patients and communities on harmful alcohol use; however their disposition to alcohol use will significantly influence this role. Twenty

seven percent of the nurses in this study had ever consumed alcohol and only 18% currently consume alcohol. Comparison of alcohol consumption among nurses in South Africa is fraught with difficulty as scant data exist. The prevalence of ever consuming alcohol among these study participants is lower than the reported prevalence among Kenyan nurses (35.8%) (Mokaya et al., 2016). It is however higher than the prevalence reported among nurses in Norway, 0.3% (Edvardsen et al., 2014). The prevalence in this study is comparable to the reported prevalence (22%) among healthcare professionals, including nurses in another province of South Africa (Okeke, Ross, Esterhuizen, & Van Wyk, 2012). Also, it is comparable to the reported prevalence among doctors in Nigeria, 30.3% (Obadeji, Oluwole, Dada, Adegoke, 2015). This evidence further affirms the fact that health workers, including the nurses also participate in unhealthy lifestyle behaviours such as harmful alcohol use, and nurses in this settings are not exempted. Their rate of alcohol consumption is slightly lower than the reported prevalence (32%) among the general population in the same setting (Owolabi et al., 2017d). Considering the important role of nurses, particularly the primary healthcare professional nurses, in the advocacy for healthy lifestyle behaviors, alcohol use among them might impede this role. Alcohol use among nurses might affect the quality of care rendered or even their sense of clinical judgement, although this association was not established in this study. Alcohol use among nurses might constitute a major threat for the healthcare system and even further increase the challenges of high litigations faced by the South African healthcare system. In addition, given that harmful alcohol use predisposes to chronic illnesses, the health of these nurses might be compromised; and this might affect the healthcare workforce. In addition, the mean number of standard alcohol taken by the nurses in this study was 4.31 bottles with a higher mean among men compared to women. These recorded mean values are synonymous to the range for binge drinking (four or more standard drinks among women or five or more standard drinks among men at an occasion). This shows that those who consume alcohol among this cohort engage in binge drinking, a form of hazardous drinking. This will not only result in poor health outcomes such as chronic diseases and injuries but can also affect the quality of life of these nurses (CDC, 2017). This might also affect their work performance and the care rendered to the patients and the communities, which may see them as role models.

Male nurses had a higher prevalence of lifetime alcohol use. This is not surprising as similar findings have been documented among other populations (Owolabi et al., 2017d; Reddy et al., 2010). Alcohol use appears more socially acceptable among men compared to women (Bratberg, 2016). Also, as observed in this study, the use of alcohol decreases with advancing age. This is similar to other studies (Owolabi et al., 2017d; Reddy et al., 2010). As age advances, maturity and more responsibilities sets in. Even in the absence of those, disease conditions might also begin to develop. These could collectively contribute to older adults' decision to either reduce alcohol consumption or abstain from it. This might also be the underlying reason behind the higher prevalence found among the never married participants as they constitute those in the younger age groups. There was no significant difference between various income groups and alcohol. All the participants have a good purchasing power for alcohol as they all earn more than R15000 per month. Aside this, alcohol appears to be relatively cheap and easily accessible in this setting. Thus, irrespective of income, everyone have access to alcohol and can easily purchase it.

Considering the significant health implications of physical inactivity, this study assessed the physical activity pattern of the nurses in this setting. Of all the participants, 33% do not engage in physical activities, and of the remaining 67%, only 29% of them met the WHO recommendation for being active. Overall, as many as 71% were either not active or insufficiently active. When compared to studies outside South Africa, the observed prevalence of physical inactivity in this study is higher than the documented prevalence of physical inactivity among nurses in the United Kingdom (48%) (Blake, Stanulewics, McGill, 2017), United States (68%) (Fitzgerald, 2015) and among nurses in South Africa (Phiri et al., 2014), in which all the nurses were reported to have met the recommended physical activity level. This shows that the nurses in this setting are not modelling the healthy lifestyle in terms of physical activity they advocate for, and as a result of this, they might be at a risk of developing non-communicable diseases. Nurses constitute a larger percentage of the healthcare workforce; as such a high burden of non-communicable diseases among them might paralyse the healthcare system. Even though lack of physical activity might not physically be observable, however, one of its side effects of becoming obese is apparent. As a result of this, patients with similar lifestyle behaviour might find it difficult adhering to advice received from nurses who do not also comply.

When asked about the perceived benefits and barriers, majority of the nurses were aware of the benefits of physical activity. Some highlighted benefits include weight loss (93.1%), better sleep (95.5%) and alertness (96.5%). The listed benefits of physical activity is synonymous to the documented benefits; reduction of the risk of developing heart diseases, diabetes, cancer, injury, better mental health (CDC, 2017; NHLBI, 2016). However, this shows that the nurses' knowledge about the benefits of physical activity do not translate into practice. In spite of being knowledgeable about the various benefits of physical activity, they still do not feel obliged to engage in such

activities. This poor attitude towards physical activity among nurses in this setting warrants intervention. When asked about the perceived barriers to engaging in physical activities, the nurses highlighted lack of time (74.0%), lack of commitment (63.3%) as the major barriers. This is synonymous to the reported barriers among nurses in the UK (Blake, Stanulewicz, & McGill, 2017), and reported evidence in a review study (Troost, Owen, Bauman, Sallis, and Brown (2002). This is worrying as the nurses are knowledgeable and yet are not committed to participate in physical activity because of lack of sufficient time. There is a need to create a work environment which will facilitate exercise at work and implement physical activity promoting initiatives among the nurses. Also, more emphasis should be laid on observing the wellness days at work and physical activity participation should be incorporated in such days. This could motivate the nurses to be active and will promote their health and reduce their risk for developing NCDs, as shown in some interventional studies assessing the effect of physical activity on the health of nurses (Blaber, 2005; Gartshore & Blake, 2014).

#### 4.1 Limitations

The cross-sectional approach and self-reporting of the lifestyle behaviours are obvious limitations of this study. Also, the findings of this study might not be generalizable to the entire South African nurses. However, this study is the first to assess the lifestyle behaviours among nurses in the Eastern Cape Province, South Africa. The findings of this present study provides a snapshot of the healthy lifestyle behaviours of nurses in the study setting.

### 5. Conclusion

The study documented high prevalence of alcohol consumption; commendably, low prevalence of smoking, but low physical activity among PHC professional nurses in Eastern Cape, South Africa. There is a need for the implementation of workplace wellness programmes that will foster healthy lifestyle behaviours among nurses in this setting.

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#### Authors' Contributions

SM, DTG and ES conceptualised and designed the study. EOO engaged in data collection, data analysis and drafting of the paper. All authors read and approved the final manuscript.

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#### Availability of Data

Data from this study will be made available on request.

#### Competing Interests Statement

The authors declare no conflict of interest.

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