

On-Site Evaluation of Smoking, Alcohol Consumption and Physical Inactivity Among Commercial Taxi Drivers in Buffalo City Metropolitan Municipality, South Africa

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Abstract

Background: Commercial drivers have been identified as eliciting behaviours that promote non-communicable diseases and road traffic accidents. The aim of the study is to determine the prevalence and pattern of alcohol use, smoking and physical inactivity among commercial taxi drivers in Buffalo City Metropolitan Municipality, South Africa.

Methods: A cross-sectional study was conducted among 403 commercial drivers using the face-to-face interviews method. The WHO STEPwise questionnaire was used to obtain the demographic data, self-reported rate of alcohol consumption, tobacco use and physical inactivity.

Results: The participants' mean age was 43.3 ± 12.5 years. About 30% of the participants were daily smokers, 37% consumed alcohol regularly and only 18% were physically active, whilst 82% were physically inactive.

Conclusion: The prevalence of alcohol use, smoking and physical inactivity is high among commercial drivers in East London. Workplace health education on the health effects of these lifestyles' risky behaviours on individuals and the general public should be given to the drivers.

Keywords: alcohol use, commercial drivers, prevalence, smoking, South Africa, substance use

1. Introduction

Non-communicable diseases (NCDs) plus resultant injuries are serious public health concerns, currently responsible for about 70% of all mortality worldwide, with 80% of these deaths occurring in the low-and middle income countries (World Health Organization [WHO], 2017). Apart from the public health effect of NCDs plus injuries, they also constitute a serious socio-economic threat as NCDs have been generally linked to poverty and they also push people further into poverty (WHO, 2017). Importantly, the majority (80%) of NCDs are caused by preventable lifestyle behaviors such as tobacco use, harmful alcohol use and physical inactivity, which predispose to the development of metabolic disorders such as overweight and obesity, hypertension, hyperglycemia and hyperlipidemia. As such, NCDs plus resultant injuries are highly preventable.

Injuries resulting from road accidents form part of the components of non-communicable diseases and are one of the leading causes of death and disability, both in the developed and developing countries. Both NCDs and road traffic accidents are recognized as significant health challenges which are commonly in disguise (Marquez & Farrington, 2013). Yearly, as many as 1.24 million lives are lost worldwide as a result of road traffic accidents and are projected to be among the five leading causes of death if prompt and appropriate actions are not taken to curb the growing menace (World Health Organization, 2015). While developed countries have already recorded a decline in the rate of road traffic injuries and accidents, the reverse has been the case in developing countries (Asiamah, Mock, & Blantari, 2002). Several underlying factors for road traffic accidents range from biological (poor vision, hearing deficit, illness, age, sex), to behavioural (alcohol and substance abuse, aggressive driving,

fatigue), societal (social pressure to speed, inappropriate enforcement of laws) and structural factors (poor road infrastructures) (Matzopoulos et al., 2014). However, the use of psychoactive substances such as alcohol, cigarettes, kolanut, and central nervous system stimulating drugs like marijuana and amphetamines, have been constantly implicated as one of the leading risk factors associated with the majority of accidents (Asiamah et al., 2002; Matzopoulos et al., 2014; Makanjuola, Aina, & Onigbogi, 2014; B. J. Adekoya, A. O. Adekoya, Adepoju, & Owoeye, 2011).

Commercial taxi driving is an occupation characterized by strenuous activities such as long hours of driving, short duration of sleep and challenges related to getting passengers, among several others. Consequently, in an attempt to reduce or minimize the involved stress, some of the commercial drivers resort to using psychoactive drugs such as alcohol and cigarettes (Makanjuola et al., 2014). Apart from the anticipated benefits of relieving them from the stress involved in their daily activities, they also believe that such substances help them to keep alert and awake for several hours. Unknown to these drivers, the use of such psychoactive substances impair their driving performance, problem solving skills as well as their sense of judgment in the face of an unexpected incidence, thus contributing to accidents (Adekoya et al., 2011; Zhao, Zhang, & Rong, 2014). Likewise, alcohol use, cigarette smoking and other psychoactive substances reduce motor coordination and performance, affect the sense of vision and lead to unruly behaviours such as violence and negative attitudes of drivers (Brumback, Cao, & King, 2007; Hingson et al., 2005). Also, the likelihood of deaths due to accidents increase in the presence of alcohol and other substance misuse (Lillsunde et al., 2012). Crashes do not only endanger the lives of the drivers, but also those of the passengers, passersby and other innocent road users.

South Africa is also experiencing a rise in the burden of road traffic accidents and this has been highlighted as an impediment to socio-economic development in the country and as impacting on the wellbeing of the populace also (Wheel 24, 2017; Taylor, 2016). The use of alcohol and other psychoactive substances have also been implicated as a driving force for the increasing burden of road traffic accidents in South Africa. Although the literature is replete with studies on the prevalence and pattern of psychoactive substance use among drivers in some countries; Nigeria (Makanjuola et al., 2014; Adekoya et al., 2011; Bello, Fatiregun, Ndifon, Oyo-Ita, & Ikpeme, 2011), Iran (Heydari et al., 2016) and Ghana (Asiamah et al., 2002), there is hardly such study of South African commercial taxi drivers. Considering the high prevalence of alcohol, cigarette and other substance abuse in South Africa, such that South Africa is considered a hard-drinking country (World Health Organization, 2017; Owolabi, Goon, Adeniyi, & Seekoe, 2017; Owolabi, Goon, Adeniyi, Seekoe, & Adedokun, 2017), it is imperative that an assessment be made of this health problem among commercial taxi drivers in the South Africa setting. Such information, in the face of scarce available data, will elucidate the burden of these unhealthy lifestyles among this important, but often neglected, high risk group and this might assist in the design of appropriate interventions. This study, therefore, is aimed at determining the prevalence of alcohol use, smoking and physical inactivity among commercial taxi drivers in Buffalo City Municipality.

2. Methods

2.1 Study Design

This cross-sectional study was conducted among 403 commercial taxi driver, aged 20 years and above, recruited from different taxi ranks. Participants were eligible if they were drivers, aged 20 years and above, a member of a recognized taxi association and had been a taxi driver for six months or more at the time of recruitment. The taxis are the most available mode of transportation among the public. Taxi drivers are registered under different associations within the province. Recruitment took place in Buffalo City Metropolitan Municipality (BCMM), East London. This is one of the 8 districts in the Eastern Cape Province, of South Africa. (Main, 2017).

2.2 Study Participants and Sample

According to statistics from the Eastern Cape Department of Transport, estimated number of taxi drivers was 4000. Sample size was calculated at a confidence level of 95%, using the creative research systems' sample size calculator (Creative Research Systems, 2017). The 403 drivers were recruited from ten selected taxi ranks across the district. All commercial taxi drivers who were available, willing and met the inclusion criteria were recruited into the study. This study was conducted in March-April, 2017.

2.3 Study Instrument

The participants were interviewed using the previously validated WHO STEPwise questionnaire (WHO, 2003) which comprises three major items, namely, demographic information, behavioural data, and measurements. The instrument was modified to suit the study settings.

2.4 Ethical Approval

This study was approved by University of Fort Hare Research Ethics Committee (Reference number: GOO121SADE01) and the Eastern Cape Department of Health. The permission to collect data from the participants was granted by the District Department of Health as well as the rank coordinators. All participants provided written informed consent before commencement of this study. Their rights to confidentiality and anonymity were ensured throughout the study.

2.5 Data Collection Procedure

Data were collected through face to face interviews. Using the WHO STEPwise questionnaire, self-reported socio-demographic data (sex, age, race, level of education, marital status, and occupation history) and behavioural data (of smoking, alcohol use and physical activity) were obtained. Occupational history were classified as period of driving (below two years, 2-5 years and 6-10 years and above 10 years). Levels of education in the form of the highest grade attained in school were categorized as, no formal education, primary (grade 1-7), secondary (grade 8-12) and tertiary education.

2.6 Statistical Analysis

Statistical Package for Social Science (SPSS), version 22, was used to analyze the data. The data analyzed were expressed as mean values \pm standard deviations (SD) for continuous variables. Categorical variables (frequencies and proportions) were presented into charts, figures and tables.

3. Results

The total number of respondents was 403, mean age of participants in this study was 43.3 ± 12.5 years and about ninety-nine percent of the participants were male. Participants above the age of 50 years were 30.5%, the majority (73.7%) had a secondary education (grade 1–8); were black (93.3%), were married and had being driving for more than 10 years (47.1%) (Table 1).

Table 1. Demographic characteristics of the participants

Variables	Frequency (n)	Percentage (%)
Sex		
Male	398	98.8
Female	5	1.2
Age (years)		
20 to 30	72	17.9
31-40	103	25.6
41-50	105	26.1
Above 50	123	30.5
Level of education		
No formal education	15	3.7
Grade 1-7	59	14.6
Grade 8-12	297	73.7
Tertiary	32	7.9
Race		
Black	376	93.3
Coloured	27	6.7
Marital Status		
Married	190	47.1
Separated	8	2.0
Divorced	16	4.0

Widowed	6	1.5
Single	183	45.4
Duration of driving		
<2 years	30	7.4
2-5 years	103	25.6
6-10 years	80	19.9
> 10 years	190	47.1

3.1 Behavioural Characteristics

Smoking: About half of the population (49%) had at a point in time used tobacco, 30% were current smokers while 29% smoked tobacco products daily (Table 2). The mean age at which the participants started smoking was 18 (SD \pm 4.7) years. Daily smokers took an average of 9.2 (SD \pm 6.0) cigarettes. For those that took hand rolled cigarettes (n=9), the average number they took per day was 5.9 (SD \pm 3.0) cigarettes. Only three participants stated that they took pipes and two of them took at least two pipes full of tobacco daily.

Alcohol consumption: Sixty percent of the participants had consumed alcohol before, 41% still consumed in the past twelve months, while 37% of the participants were current users who had consumed alcohol within the past month (Table 2). The majority (72.5%) of those that used alcohol reported drinking 1-2 days every week (figure 1). Participants consumed an average of 10 (\pm 9.3) bottles of alcohol per week.

Physical activities: Only 18% of the participants engaged in a form of physical activity while 82% reported being physically inactive (Table 2).

Table 2. Prevalence of smoking, alcohol consumption and physical activity

Behavioural History	Yes	No
	n (%)	n (%)
Ever smoked	199 (49)	204 (51)
currently smoker	121 (30)	282 (70)
Current daily smoker	117 (97)	4 (3.0)
Ever consumed alcohol?	242 (60)	161 (40)
Alcohol consumption in the past 12 months	165 (41)	238 (59)
Current alcohol use	149 (37)	254 (63)
Physical activity	18 (73)	82 (330)

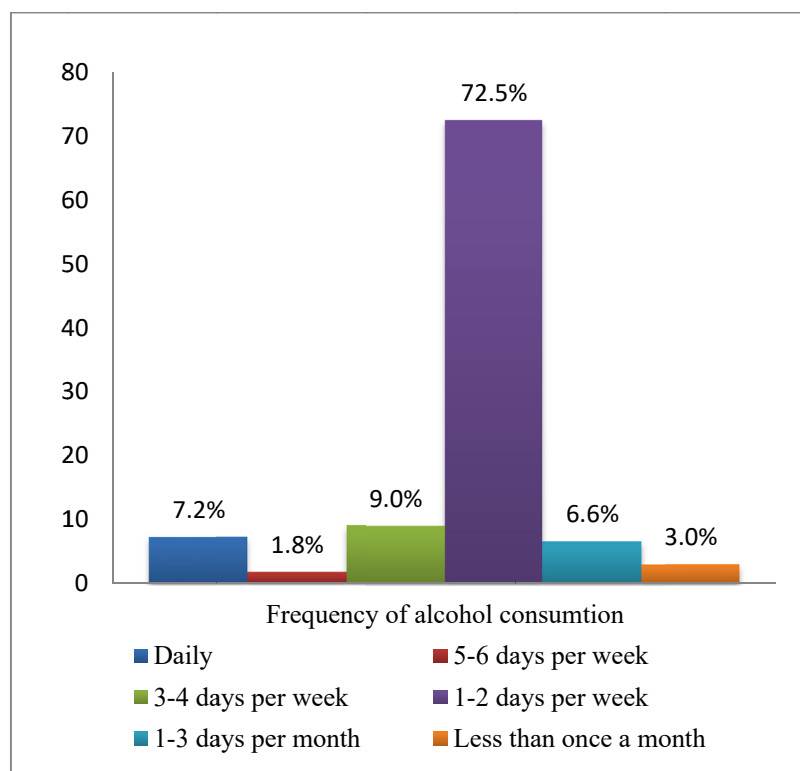


Figure 1. Frequency of Alcohol Consumption

4. Discussion

This was an on-site screening among commercial taxi drivers in Buffalo City Metropolitan Municipality, South Africa, in order to assess the prevalence of unhealthy lifestyle behaviours such as alcohol use, smoking and physical inactivity. These factors all contribute to the development of non-communicable diseases, plus road traffic accidents and injuries, which constitute a significant health and socio-economic threat.

In this study, 30% of the commercial drivers were current smokers of whom the majority smoked daily. The prevalence in this study is similar to the reported prevalence among drivers in Nigeria (32%) (Ozoh, Dania, & Irusen, 2014) and Brazil (29%) (Sangaleti et al., 2014). It is, however, slightly higher than that observed among drivers in Colombia (20.3%) (Useche, Serge, Alonso, & Esteban, 2017) and some other parts of Nigeria (25.8%) (Adekoya et al., 2011). Some other authors documented a higher prevalence than the one observed in the study under discussion, a prevalence ranging from 39.4% in Nigeria (Fasasi et al., 2014) to as high as 93% among Bangladesh drivers (Goon & Bipasha, 2014).

The prevalence of smoking among the research study participants, however, is higher than the reported national prevalence of 17.6% (Reddy, Zuma, Shisana, Kim, & Sewpaul, 2015). Likewise, Owolabi et al. (2017b) in their study conducted among the general populace in this same setting, reported a prevalence as low as 15% among adults in this setting. These findings all highlight the fact that commercial taxi drivers participate more in the illicit use of harmful psychoactive substances like cigarettes than the general population. Most likely, commercial taxi drivers smoke cigarettes in a bid to ease the stress involved in their work, to relax, be active or keep their weight in check (Okpataku, 2015; Usman & Ipinmoye, 2016). This, however, is disastrous both to their health and that of the populace at large. Also, other factors such as male dominance of the occupation (Reddy et al., 2015), urban location (Vellios & van Walbeek, 2016), low literacy levels (Owolabi et al., 2017b; Goon & Bipasha, 2014) might have also contributed to this high prevalence of smoking. There is a need for sensitization among this cohort by the Department of Health in collaboration with the Department of Transport with regards to the harmful effects of cigarette smoking. Also, there is a need for the better enforcement of existing laws regarding that.

Similarly, a high prevalence (37%) of alcohol use was found among these drivers. Several studies (Adekoya et al., 2011; Sangaleti et al., 2014; Useche et al., 2017; Abiona, Aloba, & Fatoye, 2006; Akpan & Ikorok, 2014) have also documented a high prevalence of harmful alcohol use among commercial drivers, thus, the findings in this study are not shocking. The prevalence found among the commercial taxi drivers was higher than the reported national

prevalence in South Africa (Peltzer, Davids, & Njuho, 2011). Commercial taxi drivers in this setting does not just drink, they binge drank. Generally in this setting, a high prevalence of binge drinking has been reported (Owolabi, et al., 2017a). The high prevalence of binge drinking among commercial drivers is unsurprising and a concern, given the fact that drinking while driving is associated with injuries and deaths related to road traffic accidents. The existing policies on alcohol use, as well as legislations which apply to the commercial drivers, need to be revisited, re-evaluated and reinforced. As it is, it does not seem these drivers are aware of the existing policies and legislation regarding drunken driving and this should be corrected to salvage the lives of drivers and the passengers they carry.

Another lifestyle risk factor assessed among this sect is physical inactivity. Physical inactivity contributes to non-communicable diseases and road traffic injuries by stimulating obesity. The majority (82%) of the study participants were physically inactive. This prevalence surpasses the prevalence recorded among the general South African population (46.6%) among females and (31.3%) among the males (Peer, Bradshaw, Laubscher, Steyn, & Steyn, 2013). Several other studies have also highlighted a huge burden of physical inactivity among commercial drivers (Sangaleti et al., 2014; Hirata et al., 2012; Varela-Mato et al., 2017; Varela-Mato, Yates, Stensel, Biddle, & Cledes, 2017; Sena, Pontes, Ferreira, & Mendonça, 2008). These scholars related this high burden of physical inactivity to the nature of work of commercial drivers which entails long hours of sitting, while driving, and even when not driving. Physical activities promote cardio-metabolic health and reduce the incidence of cardio-metabolic diseases (Kolbe-Alexander, Conradie, & Lambert, 2013; Wilmot et al., 2012; Puhkala et al., 2015). Also, obese drivers might not be able to assume a comfortable position while driving and this might increase the chance of getting involved in road accidents. There is therefore a need to encourage the drivers to engage in physical activities. Thus, proper health education and awareness creation programs are required for this group in this regard.

5. Conclusion

The study findings revealed a high rate of smoking, alcohol consumption and physical inactivity, which are modifiable risk factors for non-communicable diseases, and factors that increase the risk of road traffic accidents. Efforts should be made to promote physical fitness amongst commercial drivers in this study, using workplace health education to raise the awareness of its health benefits. Also, the health- and social hazards of smoking and alcohol intake should be brought to the cognizance of commercial drivers.

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Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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