

Screening for Common Occupational Health Diseases Among Long Distance Professional Drivers in Sagamu, Ogun State, Nigeria

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Date of Submission: Mar 27, 2012

Date of Acceptance: Dec 23, 2012

How to cite this article: Amoran OE, Salako AA, Jeminusi O. Screening for common occupational health diseases among long distance professional drivers in Sagamu, Ogun State, Nigeria. *Int J Prev Med* 2014;5:516-21.

ABSTRACT

Background: Long term exposure to hazards at the work place is injurious to health and usually leads to diseased conditions. The objective of this study was to determine the occupational health problems associated with driving among the professional drivers in Sagamu, Ogun state, Nigeria.

Methods: This study is a cross-sectional study. Total sample of all the consenting professional drivers in the five interstate motor parks, including the cement factory [WAPCO] in the local government area, were recruited into the study. An interviewer administered structured questionnaire was administered by trained health workers and respondents were screen for common occupational health problems.

Results: A total of 400 professional drivers were interviewed, all [100%] of them were males with age range from 21 to 59 yrs and nearly half [42%] were non indigenes. Only half, 208 [52%] of them were married with majority, 232 [58.0%] working for about 12 hrs daily and 46% of them had been working for 5 yrs or more. Most, 382 [95.5%] had been educated on HIV/AIDS before and 313 [78.3%] of them had multiple sexual partners. Only 241 [60.3%] used condom at the last sexual act and 55 [13.5%] had ever been tested for HIV/AIDS. Common occupational health diseases were renal tubular acidosis (RTA) 52 [13%] in the last one year and most of them currently have myalgia 352 [88.0%], upper respiratory tract infections (URTI) 20 [5.0%], sexually transmitted diseases (STD) 15 [3.8%], short sightedness 41 [10.3%], and Hypertension 90 [22.5%].

Conclusions: The study shows that common occupational diseases among long distance professional drivers in Western Nigeria were myalgia, upper respiratory tract infection, hypertension, short sightedness, sexually transmitted diseases, and RTA. Prevention and control of these common diseases among the drivers will lead to reduction of road traffic accidents in Western Nigeria and other low income countries.

Keywords: Drivers, Nigeria, occupational diseases, screening

INTRODUCTION

Occupation and health interact with one another. The work environment and the nature of job contribute significantly in the causation of diseases. Professional driving is associated with long hours in a single body posture, under exposure to vibration, vehicle exhaust, and noise. Furthermore, the work is performed in an environment that demands constant vigilance. There are, however, many specific diseases for which significantly increased risks of mortality and morbidity have been reported. In a retrospective cohort study of incident cancers among Danish bus and tram drivers during 1943-92, increased risks were reported for cancer in the lung, larynx, pharynx, bladder, kidney, skin, rectum, and liver.^[1] Among lorry drivers an increased mortality has been found for multiple myeloma,^[2] colon cancer, laryngeal cancer, lung cancer, diabetes, non-alcohol related cirrhosis, and motor vehicle accidents.^[3] Professional driving has also been associated with a high relative risk for ischemic heart disease (IHD),^[4-6] stroke, prolapsed lumbar disc,^[7] prolapsed cervical disc,^[8] pain in neck and back,^[9,10] gastrointestinal disorders,^[11-14] and chronic obstructive pulmonary disease (COPD).^[13]

Several studies has been conducted among professional drivers to identify occupational diseases.^[10-13] Low back pain is a major cause of disability among these working population and has a significant socioeconomic impact. To identify occupational diseases, many investigators have examined the effects of occupational activities. A review of the literature showed that results regarding effects of occupational activities, such as lifting heavy loads sedentary work or physically hard work and driving motor vehicles, were fairly consistent indicating that exposure to these factors increased the risk of occupational health diseases.^[2,14,15]

Population-based surveys have also shown associations between work factors and musculoskeletal disorders. Some have focused on physical factors, for example, sitting, driving, lifting, awkward postures, and vibration in an Ontario provincial survey.^[14] Others have included psychosocial items at work, such as job dissatisfaction in a Belgian national survey.^[15] More comprehensive surveys have included both physical and psychosocial work factors—for

example, associations between back pain and each of physically heavy, monotonous, and repetitive work among adults.^[16-19] There are few studies in Nigeria that have examined occupational health diseases among professional drivers. This study was, therefore, designed to screen for and describe common occupational health diseases among professional drivers in Sagamu, Nigeria.

METHODS

Study design

This study is an analytical cross-sectional study. The information was collected from professional drivers in the five interstate motor parks including the cement factory [WAPCO] in Sagamu local government area in Ogun State from February 25, 2007 to March 15, 2008.

The study area

The study was conducted in Sagamu local government area (SLGA) in Ogun state, which is located in the South Western part of Nigeria. Sagamu local government area is one of the 20 local government area in Ogun state. It was carved out of the former Ijebu Remo local government in 1991 and has a total land area of 68.03 km². It is bounded on the west by the Obafemi Owode local government area, on the east by both Ikenne and Odogbolu local government area, and also shares a boundary with Ikorodu local government area of Lagos state in the south.

According to the 2006 census, the area has a population of 253,412 inhabitants which consists of mainly remo-speaking people of Ogun state. Other ethnic groups like the Hausas, Igbos, and the Benue people are well represented. Most of the towns are either semi-urban or rural. Other major towns in the local government besides Sagamu include Ogijo, Sotubo, Ode-lemo, Emuren, and Simawa. The local government has 15 political wards, 12 of which fall within the Sagamu metropolis. This area is a major transit region between the southwest, southeast, and the northern part of Nigeria.

Sampling technique

This study is a cross-sectional study. Total sample of all the consenting professional drivers in the five interstate motor parks including the cement factory [WAPCO] in the local government area were

recruited into the study. An interviewer administered structured questionnaire was administered by trained health workers and respondents were screened for common occupational health problems.

Sampling size determination

The sample size was calculated using Epi-Info version 6.0 statistical software. The result of a previous study^[4] that showed prevalence of condom use among PLWAs was used.

The sample size used for this study was calculated with the formula

$$n = z^2 pq/d^2$$

$$n = 1.96^2 \times 0.35 \times 0.65/0.05^2 = 350$$

However, a total of four hundred participants [400] were recruited into the study.

Study instrument

The factors examined in the study include socio-demographic characteristics (age, sex, income, education, religion, marital status, occupation, place of residence), illness related factors, service related factors, psycho-social factors, and behavioural factors.

Screening for health condition was carried out by physicians. Hypertension was screened for using sphygmomanometers, Short sightedness using Snellen's chart, etc.

The Questionnaire was pre-tested on 20 transport workers in Ikenne local govt area and necessary adjustments were made. Trained data collectors explained the aim of the study, obtained informed consent, and interviewed each respondent privately. All information was obtained under anonymity.

Ethical considerations

Ethical clearance was obtained from the Olabisi Onabanjo Teaching Hospital Ethics Board. Confidentiality on candidate's information was maintained. Permission of the Chairman of the road transport workers in Sagamu local government area was obtained before the commencement of the study.

Data analysis

To describe respondent's characteristics, we calculated proportions and medians. For categorical variables, we compared proportions using Chi-square tests and, when appropriate, Fisher's exact test. For continuous variables, we

compared medians using the Wilcoxon Rank-Sum Test. Chi-square was used to determine association between categorical variables and a *P* value of less than 0.05 was considered significant. Data was presented in tabular form.

RESULTS

Socio-demographic characteristics of respondents

A total of 400 professional drivers were recruited into the study. The age of the respondents ranged from 21 to 62 years, (mean 41.07 ± 6.13 years). About half, 208 [52.0%] of the respondents were married, 126 [31.5%] were never married, 21 [5.3%] were separated, 22 [5.5%] divorced, and 23 [5.8%] were widower. More than half, 59.3% of the respondents were Christians, 39.3% were Muslims, and 1.3% were traditional worshippers. Fifty-eight percent [232] were of the Yoruba tribe, 18.0% were Igbos, 10.8% were Hausas, and 13.3% were from other tribes. About 10.5% of the respondents had a post secondary education, 38.0% have completed a secondary education, 40.3% had a primary education, and 11.3% had no education at all. This is as shown in Table 1.

More than half, 232 [58.0%] of the respondents work for about 12 hrs daily while 82 [20.5%] work for less than 6 hrs daily and 86 [21.5%] work for between 6-11 hrs daily. Few, 30 [7.5%] of the respondents had worked for more than 10 yrs, 154 [38.5%] for 6-10 yrs and 226 [54.0%] for less than 5 yrs. This is as shown in Table 2.

Majority, 313 [78.3%] of the study participants had multiple sexual partners with 241 [60.3%] of these respondents using condom regularly. Only 55 [13.8%] have ever tested for HIV/AIDS. Among 352 [88.0%] professional drivers, myalgia was the most prevalent occupational health problem. This was followed by hypertension 90 [22.5%], then road traffic accident in the last one year 52 [13.0%], and short sightedness 41 [10.3%]. Others were upper respiratory tract infection 20 [5.0%], sexually transmitted diseases 15 [3.8%], and hearing problems 4 [2.8%]. This is as shown in Table 3.

DISCUSSION

Among 352 [88.0%] professional drivers, musculo-skeletal pain/injury was the most

Table 1: Socio-demographic characteristics

	No. of respondents	% of respondents
Age (yrs)		
21-30	28	7.0
31-40	153	38.3
41-50	161	40.3
>50	58	14.5
Total	400	100.0
Marital status		
Single	126	31.5
Married	208	52.0
Separated	21	5.3
Divorced	22	5.5
Widower	23	5.8
Ethnicity		
Yoruba	232	58.0
Igbo	72	18.0
Hausa	43	10.8
Others	53	13.3
Religion		
Christianity	237	59.3
Islam	158	39.5
Traditional religion	5	1.3
Level of education		
Nil	45	11.3
Primary	161	40.3
Secondary	152	38.0
Post-secondary	42	10.5

prevalent occupational health problem. Several studies have reported similar findings.^[20-27] Driving has been found to be a major occupational risk factor for musculoskeletal injuries. Occupational exposures including vibrations affecting the whole body, physically hard work, frequently twisting or bending, standing up, and concentration demands are risk factors for musculoskeletal pain, which is a major cause of disability among the working population and has a significant socioeconomic impact.^[28,29] Health education to the professional drivers should ensure education on prevention and care of musculo-skeletal injuries with adequate attention to their health seeking behaviour.

The study suggests an increased risk for hypertension and other heart diseases such as myocardial infarction. This has been reported in several studies done among professional drivers^[30-32] but there are also some studies where this was not

Table 2: Work-related characteristics

	No. of respondents	% of respondents
Working hour/day (hrs)		
0-6	82	20.5
7-12	232	58.0
>12	86	21.5
Yrs of working experience (yrs)		
0-5	226	54.0
6-10	154	38.5
>10	30	7.5
Have multiple sexual partners		
Yes	313	78.3
No	87	21.8
Condom use		
Use condom regularly	241	60.3
Use condom occasionally	159	39.8
Done VCCT		
Yes	55	13.8
No	345	86.3

VCCT=Voluntary confidential counselling and testing

Table 3: Prevalence of common occupational health diseases screened for

	No. of respondents	% of respondents
Road traffic accidents/yr	52	13.0
Upper respiratory tract infection	20	5.0
Myalgia	352	88.0
Hearing problems	4	2.8
Short sightedness	41	10.3
Hypertension	90	22.5
Sexually transmitted infections	15	3.8

found.^[33,34] The evidence for an increased risk of hypertension and myocardial infarction seems to be stronger among bus drivers than among other groups of drivers. A combination of high psychological demands and low control at work (job strain) has been proposed as being associated with an increased risk of developing coronary heart disease. This theory, the Karasek-Theorell hypothesis, has gained support from several epidemiological studies.

The study shows that the long distance professional drivers in Western Nigeria were a high risk group for sexually transmitted diseases. This has been reported by several studies.^[35-37] This implies that correct attitude towards HIV and other sexually transmitted diseases should be encouraged. Campaigns on safer sex practices and the use of condom should be embarked upon by the various bodies responsible for monitoring the activities of the professional drivers.

The study shows that the long distance professional drivers were a high risk group for short sightedness. Short sightedness has been identified as a risk factor for road traffic accident and may be responsible for a considerable number of accidents which occurred among the study participants. This may imply that the prevention and control of this common disease among the drivers will lead to reduction of road traffic accidents in Western Nigeria and other low income countries. We suggest that periodic examination of drivers should be embarked upon by the road safety officials in order to reduce the incidence of road traffic accident among these professional drivers.

The results of this study should be interpreted cautiously. First, the study was conducted at the motor-parks. This setting may stimulate study participants and overestimate risk perception and positive mental attitude towards these diseases. The study was also limited in that it relied on self-report, and is, therefore, subject to reporting bias. This will have implications for interventions focused on educating professional drivers in a typical African population on occupational diseases associated with their profession and sensitize them to its prevention.

CONCLUSIONS

The study concludes that common occupational diseases among long distance professional drivers in Western Nigeria were myalgia, upper respiratory tract infection, hypertension, short sightedness, sexually transmitted diseases, and RTA. Prevention and control of these common diseases among the drivers will lead to reduction of road traffic accidents in Western Nigeria and other low income countries.

REFERENCES

1. Hansen ES. A follow-up study on the mortality of truck drivers. *Am J Ind Med* 1993;23:811-21.
2. Soll-Johanning H, Bach E, Olsen JH, Tüchsen F. Cancer incidence in urban bus drivers and tramway employees: A retrospective cohort study. *Occup Environ Med* 1998;55:594-8.
3. Aronson KJ, Howe GR, Carpenter M, Fair ME. Surveillance of potential associations between occupations and causes of death in Canada, 1965-91. *Occup Environ Med* 1999;56:265-9.
4. Tüchsen F, Bach E, Marmot MG. Occupation and hospitalization with ischaemic heart diseases: A new nationwide surveillance system based on hospital admissions. *Int J Epidemiol* 1992;21:450-9.
5. Tüchsen F. Stroke morbidity in professional drivers in Denmark 1981-1990. *Int J Epidemiol* 1997;26:989-94.
6. Jensen MV, Tüchsen F. Occupation and lumbar disc prolapse. *Ugeskr Laeger* 1995;157:1519-23.
7. Jensen MV, Tüchsen F, Ørhede E. Prolapsed cervical intervertebral disc in male drivers in Denmark, 1981-90. A longitudinal study of hospitalizations. *Spine (Phila Pa 1976)* 1996;21:2352-5.
8. Krause N, Ragland DR, Greiner BA, Fisher JM, Holman BL, Selvin S. Physical workload and ergonomic factors associated with prevalence of back and neck pain in urban transit operators. *Spine (Phila Pa 1976)* 1997;22:2117-26.
9. Krause N, Ragland DR, Fisher JM, Syme SL. Psychosocial job factors, physical workload, and incidence of work-related spinal injury: A 5 year prospective study of urban transit operators. *Spine (Phila Pa 1976)* 1998;23:2507-16.
10. Winkleby MA, Ragland DR, Fisher JM, Syme SL. Excess risk of sickness and disease in bus drivers: A review and synthesis of epidemiological studies. *Int J Epidemiol* 1988;17:255-62.
11. Evans GW. Working on the hot seat: Urban bus operators. *Accid Anal Prev* 1994;26:181-93.
12. Tüchsen F, Hannerz H. Social and occupational differences in chronic obstructive lung disease in Denmark 1981-93. *Am J Ind Med* 2000;37:300-6.
13. Liira JP, Shannon HS, Chambers LW, Haines TA. Long-term back problems and physical work exposures in the 1990 Ontario Health Survey. *Am J Public Health* 1996;86:382-7.
14. Skovron ML, Szpalski M, Nordin M, Melot C, Cukier D. Sociocultural factors and back pain: A population-based study in Belgian adults. *Spine (Phila Pa 1976)* 1994;19:129-37.
15. Saraste H, Hultman G. Life conditions of persons

- with and without low-back pain. *Scand J Rehabil Med* 1987;19:109-13.
16. Borgia P, Forastiere F, Rapiti E, Rizzelli R, Magliola ME, Perucci CA, *et al.* Mortality among taxi drivers in Rome: A cohort study. *Am J Ind Med* 1994;25:507-17.
 17. Alfredsson L, Hammar N, Hogstedt C. Incidence of myocardial infarction and mortality from specific causes among bus drivers in Sweden. *Int J Epidemiol* 1993;22:57-61.
 18. Michaels D, Zoloth SR. Mortality among urban bus drivers. *Int J Epidemiol* 1991;20:399-404.
 19. Frymoyer JW, Pope MH, Clements JH, Wilder DG, MacPherson B, Ashikaga T. Risk factors in low-back pain. An epidemiologic survey. *J Bone Joint Surg Am* 1983;65:213-8.
 20. Walsh K, Varnes N, Osmond C, Styles R, Coggon D. Occupational causes of low-back pain. *Sand J Work Environ Health* 1989;15:54-9.
 21. Damkot DK, Pope MH, Lord J, Frymoyer JW. The relationship between work history, work environment and low-back pain in men. *Spine (Phila Pa 1976)* 1984;9:395-9.
 22. Svensson HO, Andersson GB. Low-back pain in 40 to 47-year-old men: Work history and work environment factors. *Spine (Phila Pa 1976)* 1983;8:272-6.
 23. Pietri F, Leclerc A, Boitel L, Chastang JF, Morcet JF, Blondet M. Low-back pain in commercial travellers. *Sand J Work Environ Health* 1992;18:52-8.
 24. Magora A. Investigation of the relation between low back pain and occupation. 3. Physical requirements: Sitting, standing and weight lifting. *IMS Ind Med Surg* 1972;41:5-9.
 25. Magora A. Investigation of the relation between low back pain and occupation: Medical history and symptoms. *Scand J Rehabil Med* 1974;6:81-8.
 26. Brown JR. Factors contributing to the development of low back pain in industrial workers. *Am Ind Hyg Assoc J* 1975;36:26-31.
 27. Biering-Sorensen F. A prospective study of low back pain in a general population. I. Occurrence, recurrence and aetiology. *Scand J Rehabil Med* 1983;15:71-9.
 28. Kelsey JL, Hardy RJ. Driving of motor vehicles as a risk factor for acute herniated lumbar intervertebral disc. *Am J Epidemiol* 1975;102:63-73.
 29. Kelsey JL, Githens PB, O'Conner T, Weil U, Calogero JA, Holford TR, *et al.* Acute prolapsed lumbar intervertebral disc: An epidemiologic study with special reference to driving automobiles and cigarette smoking. *Spine (Phila Pa 1976)* 1984;9:608-9.
 30. Ahlbom A, Theorell T. Hjartinfarkt hos trafikpersonal vid Stockholms lokaltrafik. *Lakartidningen* 1980;77:3472-3.
 31. Hansen ES. A follow-up study on the mortality of truck drivers. *Am J Ind Med* 1993;23:811-21.
 32. Luepker RV, Smith ML. Mortality in unionized truck drivers. *J Occup Med* 1978;20:677-82.
 33. Paradis G, Theriault G, Tremblay C. Mortality in a historical cohort of bus drivers. *Int J Epidemiol* 1989;18:397-402.
 34. Balarajan R, McDowall ME. Professional drivers in London: A mortality study. *Br J Ind Med* 1988;45:483-6.
 35. Ao T, Sam N, Manongi R, Seage G, Kapiga S. Social and behavioural determinants of consistent condom use among hotel and bar workers in Northern Tanzania. *Int J STD AIDS* 2003;14:688-96.
 36. Catania JA, Gibson DR, Chitwood DD, Coates TJ. Methodological problems in AIDS behavioural research: Influences on measurement error and participation bias in studies of sexual behaviour. *Psychol Bull* 1990;108:339-62.
 37. Veller-Fornasa C, Gai F, Tarantello M, Gallina P. Knowledge of sexually transmitted diseases and condom use among female street sex workers in Padua. *Acta Dermatovenerol Alp Panonica Adriat* 2005;14:107-10.

Source of Support: Nil, **Conflict of Interest:** None declared.