Examining Health literacy levels and its Association with Demographic Dynamics among Intra-City Commercial Drivers: Results from a Survey in Nigeria

ABSTRACT

Background and Objective: Considering the importance of intra-city commercial drivers to the developing nation's economy like Nigeria and the chain effects of health neglect among them on the general wellbeing of all, understanding their health literacy level and its associated factors becomes imperative. This study, therefore, aims to examine health literacy levels and their associated and predicting factors among intra-city commercial drivers in Ibadan, the capital city of Oyo State, South-West, Nigeria.

Materials and Methods: This study is a descriptive type and a quantitative research method using a survey design was adopted. The participants of the study consist of commercial taxicabs drivers and tricycle riders in the city of Ibadan. Two hundred and three (203) commercial drivers participated in the study using a simple random sampling technique from twelve (12) purposively selected motor parks in Ibadan, Nigeria. A self-constructed questionnaire that focuses on two domains- demographic characteristics and health literacy was used as an instrument of data collection for the study. Data were collected within a six (6) week period (April 26-June 7, 2021). The collected data were analysed using simple percentages, mean and standard deviation, Univariate analysis and Logistic regression.

Results: In the study, the weighted average of the health literacy of intra-city commercial drivers is 3.43 and 55.2% of the respondents have adequate health literacy while 44.8% of them have inadequate health literacy. Sex , marital status , religion, educational level and income (p=0.001) were found to be significantly associated with the health literacy status of the commercial drivers.

Conclusion: This study highlights the need for stakeholders (government, health practitioners and providers, educators etc.) to make a concerted move through policy formulations, interventions, structured education, provision of information and effective communication to improve health literacy and general well-being of the commercial drivers.

Paper Type: Research Article

Keywords: Health Literacy; Commercial Drivers; Associated Factors; Ibadan; Nigeria.

▶ **Citation:** Sunday A. Itasanmi, Violet O. Ekpenyong & Helen A. Andong. Examining Health literacy levels and its Association with Demographic Dynamics among Intra-City Commercial Drivers: Results from a Survey in Nigeria. *Journal of Health Literacy*. Winter 2022; 6(4): 9-21.

Sunday A. Itasanmi
Department of Adult Education, University of Ibadan, Nigeria. (Corresponding author):
Itasunny2000@gmail.com

Violet O. Ekpenyong
Department of Continuing Education and Developmental Studies, University of Calabar, Nigeria.

Helen A. Andong
Department of Continuing Education and Developmental Studies, University of Calabar, Nigeria.

Received: 04 August 2021
Accepted: 20 October 2021
Doi: 10.22038/jhl.2021.60706.1217

Introduction

The World Health Organisation (WHO) conceived the term 'health' to be a state of complete physical, mental and social wellbeing which do not necessarily translate to the absence of diseases or sickness. In other words, health is the individual's ability to cope with his or her environment physically, emotionally and socially. This definition highlights the link between health and wellbeing. WHO recognised health as a fundamental human right. The right is perceived to involve both physical and social resources to achieve and maintain (1). Thus, sustaining health requires following daily advice and preventive measures to lessen the likelihood of diseases. Ottawa charter of 1986 defined health as a resource for everyday life, not the object of living. Thus, health is positioned as a means to living well, which underscore the nexus between health and community participation (2). The importance of health to daily living cannot be overemphasised. It's a critical factor that allows an individual to correctly perform daily tasks in the right way. This empowers him to serve himself, his community and the entire nation. A healthy person is saved from the costs of treatment and associated hassles which could enhance personal savings and spending on productive activities as against diseases if health is neglected. This alludes to the saying that "an ounce of prevention is worth a pound of cure" (3).

Prevention of health problems and adequate protection of one's health as well as the ability to better manage health challenges is dependent on the health literacy level of the individual. Health literacy refers to the extent to which a person can obtain, process, and understand basic health information and services required to make suitable health decisions. According to Australian Commission on Safety and Quality in Health Care (4), health literacy is about how people understand health and health care information and how the information is applied in their daily living in terms of its use to make decisions and act on it. Thus, it is a measure of people's ability to read, comprehend and act on medical instructions (5). Health literacy is a necessary skill needed by everyone as it allows people to take control of their well-being by making informed healthcare choices, enhancing communication with healthcare providers and equipping them with needed information for self-advocacy in the health care system (6). Health literacy engenders knowledge and skills which empower an individual to function effectively in the three domains of the health continuum: firstly, as a patient in the healthcare system, secondly as a person at risk of contracting the disease in the disease prevention settings, and thirdly, as a stakeholder to the health promotion efforts in the society (home, work, educational system, and the market place) to which he belongs (7). However, lack or inadequate health literacy has been found to have negative implications on individual and national health outcomes. At the personal level, having inadequate health literacy may make it difficult to understand when and how to take a prescribed drug, where to seek appropriate medical care and how to communicate with the healthcare provider on signs and symptoms they are experiencing. This, therefore, inhibits their capacity to make the best decisions concerning their health. At the national level, low health literacy could increase the cost of health care outrageously because when people lack understanding of health information and instructions, the tendency to have worse health outcomes and the use of unnecessary health emergency services is high (6).

Nigeria is Africa's most populous country and ranked seventh in the comity of most populous

countries in the world with approximately 202 million inhabitants (8). The country is made up of over 250 ethnic groups, 380 languages and has diverse cultural and religious beliefs and practices (9). Adequate healthcare provision for the teeming population of the country is challenging as there are myriad issues affecting access and quality to healthcare services. The country faces many public health challenges and this includes infectious diseases, pollution, disaster management, poverty, doctor-population ratio, population per health facility, health financing, alcohol abuse, poor sanitation, utilization of care, high illiteracy, housing, incessant industrial action by medical professionals among several others. These challenges have significantly affected the health status of Nigerians with overall life expectancy at birth hanging at 55 (10), infant and maternal mortality rate of 86 per 1000 live births and 840 per 100,000 live births respectively. Nigeria is also listed among the countries worst hit with deaths from non-communicable diseases (9). Though several efforts were made by the governments, international organisations, non-governmental organisations and community-based organisations to improve the population's health status, it appears to be a daunting challenge. The inability of the country to address these numerous public health challenges has contributed to the persistent weakness of the health system most notably in the area of improving health literacy for adequate health inclusion.

Nigeria's road transportation system accounts for over 90% of the mobility of people and commercial road transport accounts for about 432 million tons of freight movement per annum by road across the country (11). Commercial drivers are the major agent that ensures flexible movement of people and goods from one place to the other. Commercial driving activities have significantly changed the face of employment, trade, family life and health care, thus, bringing benefits to the entire population unimaginable a hundred years ago (12). The impact commercial drivers have on the socio-economic activities of Nigeria cannot be overemphasized (13). However, due to the high demand for their jobs and the environment they work in, commercial drivers are vulnerable to various health hazards such as musculoskeletal pain, visual dysfunction, stress and non-communicable diseases. These health issues are believed to be caused by a sedentary lifestyle, prolonged sitting, few hours of sleep, poor diet, multiple sexual partners, psychological factors and poor access to health care (11, 14)). Road accidents are also a major public health concern in Nigeria and it is estimated that 40% of the overall road crashes annually are caused by commercial drivers (14). Road accidents have huge financial and health implications on the individual involved, family, community and the nation at large (12). Attributed factors to road accidents by commercial drivers include high stress, illiteracy, negligence of safety practices, smoke while on the wheel, alcohol taking before driving and lack of time for a medical check-up (12,14). Therefore, considering the importance of intra-city commercial drivers to the developing nation's economy like Nigeria and the chain effects of health neglect among them on the general wellbeing of all, it becomes imperative to have an understanding of their health literacy status and its determinants among this population. Such understanding would provide information and prompt intervention strategies targeted at improving health literacy for the general promotion of health and well-being of these commercial drivers.

Few empirical studies (15, 16, 17, 18, 19, 20) exist on health literacy among the Nigerian population. The result of these studies indicates

different health literacy statuses depending on the scale of measurement, the population of the study and location. For instance, Shabi & Adewusi, (16) using adapted e-HEALS to measure health literacy among In-school adolescents in Osun State, South-West, Nigeria, reported that only 37.7% of the sampled population possessed adequate health literacy while 59% and 3.3% have average and poor health literacy respectively. Also, Kuyinu, et al. (19) measured health literacy among residents of Lagos State, Nigeria's commercial city using the Brief Health Literacy Screening Tool (BHLS). Results revealed that 74.8% of the sampled population had adequate health literacy. In a similar vein, Zibima, et al. (20) measured health literacy levels in rural Bayelsa, Niger Delta region of Nigeria using BHLS. The study found out that 71.25% of the participants had limited health literacy while 17.75% and 11% had marginal and adequate health literacy respectively. Several factors are associated or serve as determinants of health literacy among the Nigerian populace. These factors include culture and belief system, poor and ineffective communication, level of education, socioeconomic status (Adekoya-Cole, et al., 2015). Specifically, Kuyinu, et al. (19) found adequate health literacy to be associated with being female, frequent use of broadcast media as a source of information, frequent use of the internet as a source of information, knowing a frequently prescribed antibiotic and being more comfortable with the use of the English language. All the studies reviewed above were conducted among the different subsets of Nigeria's population but none was done to capture intra-city commercial drivers' health literacy. This study, therefore, aims to examine health literacy status and its associated and predicting factors among intra-city commercial drivers in Ibadan, the capital city of Oyo State, South-West Nigeria. This will help generate information that could serve as a basis for appropriate health interventions that could improve health literacy status and engender policy actions that would help in promoting good health and management of health conditions among the commercial drivers.

Material and Methods

Context

Ibadan, a big metropolitan city was established in the 1930s as a war camp (21). The city is currently the capital city of Oyo State, located in the South-West of Nigeria. Ibadan is the third most populous city in the country after Lagos and Kano with a population of over six million residents (22). It is the country's largest city by geographical area. The city consists of eleven local government areas, five of which are within the inner city while the rest are either semi-urban or rural settlements (23). The major economic activities engaged in by the city's residents include agriculture, service industries, commerce, handicrafts and manufacturing. Although, agricultural activities have declined as most farmers are part-time who augment their earnings with other works, the city is largely an urban area. Ibadan is well served by roads. Among the infrastructural systems in the city, transport is possibly the one that has the closest interaction with the growth and pattern of land use. It is estimated that over 80% of passenger transport and more than 60% of freight movement in the Ibadan region is by road (21). A fleet of privately owned taxicabs, minibuses and regular bus services operate within the city and its suburbs (24).

Study Design

This study is descriptive in nature and a quantitative research method using a survey design was adopted. This approach is considered appropriate because of the need to quantify health literacy level and associated as well as

predicting factors among the respondents.

Study Population

The population of this study consist of commercial taxicabs drivers and tricycle riders in the city of Ibadan, the capital city of Oyo State, Nigeria.

Sample Size Determination

The sample size for the study is 216 and was estimated based on the calculation below;

n=Z2p(1-p)/d2

n=1.962×0.5×0.5 / 0.072= 196

Adjusting the sample size with a 10% attrition (none response) rate= 216

Sampling Techniques

Twelve major commercial motor parks were purposively selected based on their strategic location to the city and on the basis that the motor parks cover almost all the routes in the entire city. A simple random sampling technique was used to select participants from the selected motor parks. In all, two hundred and three (203) commercial drivers participated in the study. Below is the list of motor parks and the number of participants from each of them (table 1).

Table 1: Motor parks and number of participants

S/N	Motor Parks	Participants
1	Challenge	30
2	Ojoo	10
3	Apata	10
4	Mokola	20
5	Dugbe	25
6	Iwo Road	25
7	Ijokodo	8
8	Apete	10
9	Eleyele	25
10	Toll Gate	10
11	Sango	26
12	New Garage	4

Inclusion Criteria

The inclusion criteria were based on attainment of age eighteen (18), driving a commercial taxicab or tricycle within the city and willingness to paricipate in the study.

Exclusion Criteria

Commercial drivers who do not operate in the selected motor parks and those in the selected motor parks but unwilling to participate in the study were excluded.

Instrument

A questionnaire that focuses on two domains-demographic characteristics and health literacy was used as an instrument of data collection for the study. The demographic characteristics seek information on intra-city commercial drivers' backgrounds like age, sex, marital status, religion, educational level and monthly income. The health literacy was measured using a scale tagged 'Commercial Drivers' Health Literacy Scale (CDHLS)'. CDHLS is designed in 5 Likert scales from (Strongly Agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1). The scale consists of 17 items largely drawn from the existing body of literature on health literacy and structured to be consistent with health literacy fundamentals (Functional, interactive and critical health literacy skills) as emphasized by Nutbeam (25). CDHLS was subjected to three experts' reviews and their suggestions were taken into consideration and reflected in the final copy of the scale. To ascertain the reliability of the instrument, the questionnaire was pilot-tested among University of Ibadan intra-campus commercial drivers and Cronbach coefficient of .79 (Cochran's F-test- .012) was obtained for the scale. Cronbach coefficient greater than .70 indicates an internal consistency in the questionnaire items. Hence, the instrument was considered reliable to measure the health literacy of the sample population.

Ethical Consideration

The study received Departmental approval and before participating in the study, the participants

were intimated of the objectives of the study and the possibility that the outcome of the study might positively influence the government's policy response to improving their health literacy with the corresponding impact on their general wellbeing. Thus, each participant's consent was orally obtained before administering the survey. Moreover, they were given the assurance of confidentiality of all information provided.

Data Collection Method

Data was collected from all the respondents through the questionnaire administered by the researchers and four (4) trained research assistants within a six (6) week period (April 26-June 7, 2021). Commercial drivers who could read and understand the questionnaire items were allowed to self-administered it while those who didn't have the literacy skills to read and understand the questionnaire items have it completed by the researchers and trained research assistants based on verbal answers provided to each of the items when read to them. They were asked to reconfirm their answers to ensure that their response is well tallied with the questions. The questionnaire was completed within approximately 15-20 depending on the literacy level of the respondents.

Statistical Methods

Descriptive statistics of frequency count, simple percentages, mean and standard deviation were used to analyse the demographic data and general health literacy status of the intra-city commercial drivers in Ibadan. The weighted average of the mean scores for the questionnaire items was used to categorize the general health literacy level. The decision was based on weighted average ≤2=low health literacy, 2>x ≤3.5= moderate health literacy, >3.5= high health literacy. Categorization of individual health literacy among the intra-city commercial drivers was based on individual health literacy score <60% is adequate while scoring <60% is taken to be inadequate based on the following calculations:

Health Literacy

QS = Question score (5points for Strongly Agree, 4 points for Agree, 3points for Neutral, 2points for Disagree and 1point for Disagree)

I – Individual respondents

TS – Total score

$$TS_i = \sum QS_i$$

MS = Maximum score

$$MS = Highest\ points \times Number\ of\ items$$

$$MS = 5 \times 17 = 85\ points$$

CS – Compliance score

$$CS = \frac{TS_i}{MS} \times 100$$

Univariate analysis was done to generate frequencies of both dependent variables and independent variables. Logistic regression was used to identify predictors of adequate health literacy found significant at the bivariate analysis. The level of statistical significance was set at $p \leq 0.05$.

Results

Socio-demographic characteristics of respondents

A total of 203 commercial drivers were recruited into the study across the Ibadan metropolis and more than three quarters (88.2%) were male. The majority of the respondents (40.9%) were between 41 – 60 years old. Slightly above half of the respondents (50.2%) were Christian, 39.9% of the respondents are Muslim while only 9.9% practice other religions. A majority (61.6%) of the respondents were married, 16.7% were single, 12.8% were separated from their spouse, 4.9% were divorced, and 4.9% were widows. Up to 28.1% of respondents reported having completed secondary school and more

than a third (33.5%) had a first degree from a university or a higher national diploma from polytechnics. Only 22.2% of the respondents earn less than 20,000 Naira, 38.4% earn between 20,000 and 40,000 Naira and 39.4% earn above 40,000 Naira monthly.

Health Literacy

Table 2 revealed that the general health literacy of intra-city commercial drivers in Ibadan is moderate (WA=3.43). It was observed that slightly above half (55.2%) of the respondents have adequate health literacy while almost half (44.8%) of them have inadequate health literacy.

Factors associated with health literacy

Table 2: General Health Literacy among Intra-City Commercial Drivers

SN	Items	SA (N/%)	A (N/%)	N (N/%)	D (N/%)	SD (N/%)	Mean	SD
1	I have the skills to read and understand written health information including medication labels	67 (33.0)	65 (32.0)	20 (9.9)	44 (21.7)	7 (3.4)	3.69	1.23
2	I know how to fill medical forms correctly	47 (23.2)	80 (39.4)	22 (10.8)	34 (16.7)	20 (9.9)	3.49	1.28
3	I do observe all instructions given by healthcare providers	54 (26.6)	79 (38.9)	29 (14.3)	26 (12.8)	15 (7.4)	3.65	1.21
4	I know how to get information about health personally	41 (20.2)	68 (33.5)	22 (10.8)	57 (28.1)	15 (7.4)	3.31	1.27
5	I can easily find information about my health challenges	44 (21.7)	66 (32.5)	22 (10.8)	51 (25.1)	20 (9.9)	3.31	1.32
6	I do get health information from different sources	35 (17.2)	78 (38.4)	27 (13.3)	43 (21.2)	20 (9.9)	3.32	1.26
7	I can say that I have updated health information that can help deal with my health issues	35 (17.2)	62 (30.5)	26 (12.8)	55 (27.1)	25 (12.3)	3.13	1.32
8	It's very easy to compare health information from different sources	35 (17.2)	73 (36.0)	23 (11.3)	52 (25.6)	20 (9.9)	3.25	1.28
9	I do verify whether particular new health information is correct or not	44 (21.7)	56 (27.6)	23 (11.3)	56 (27.6)	24 (11.8)	3.2	1.37
10	I do discuss health problems with healthcare providers in a manner they can understand properly	61 (30.0)	90 (44.3)	18 (8.9)	26 (12.8)	8 (3.9)	3.84	1.11
11	I do discuss health concerns with doctors and other healthcare providers	55 (27.1)	80 (39.4)	19 (9.4)	40 (19.7)	9 (4.4)	3.65	1.20
12	I do engage healthcare providers in discussion to get needed health information	40 (19.7)	59 (29.1)	25 (12.3)	68 (33.5)	11 (5.4)	3.25	1.26
13	It is easy to judge which everyday behaviour is related to my health	54 (26.6)	51 (25.1)	30 (14.8)	49 (24.1)	19 (9.4)	3.35	1.35
14	I know how to find out about activities that can help enhance mental well-being	53 (26.1)	62 (30.5)	25 (12.3)	46 (22.7)	17 (8.4)	3.43	1.31
15	I know how to protect myself from illness based on information I get from different sources such as radio, television, and newspaper	48 (23.6)	54 (26.6)	31 (15.3)	50 (24.6)	20 (9.9)	3.3	1.33
16	I understand health warnings on behaviour such as smoking, low physical activities and excessive drinking	67 (33.0)	50 (24.6)	26 (12.8)	47 (23.2)	13 (6.4)	3.55	1.33
17	I know how to find information on better management of stress and depression	63 (31.0)	62 (30.5)	26 (12.8)	35 (17.2)	17 (8.4)	3.59	1.31

SA=Strongly Agree; A=Agree; N=Neutral; D=Disagree; SD=Strongly Disagree

on bivariate analysis were shown in Table 3. Respondent's sex was statistically associated with health literacy . The proportion of adequate literacy among male respondents (82.1%) was higher compared to female respondents (17.9%). The proportion of adequate health literacy among married respondents (73.2%) were more than adequate health literacy among single respondents (20.3%) and separated/Divorced (6.3%). The difference was statistically significant with health literacy . The health literacy was higher among Christianity (59.8%) compared to Islam (36.6%) and Traditional (3.6%). The difference was statistically significant with health literacy . The level of education among respondents also influenced the score of health literacy, the association was statistically significant as respondents with tertiary education had higher health literacy (55.4%) compared to respondents with secondary education (24.1%), respondents with primary education (14.3%) and respondent with no formal education (6.3%). There was a significant association between the income of the respondents and health literacy. There was an association between respondents' health literacy and their income (p=0.001).

Table 3: Demographic Factors Associated with Health Literacy among Intra-City Commercial Drivers

Variables	Health Literacy (N/%)		Chi-Square	P-value
	Inadequate	Adequate		
Age			4.804	0.091
18-40	28 (30.8)	44 (39.3)		
41-60	35 (38.5)	48 (42.9)		
61+	28 (30.8)	20 (17.9)		
Sex			8.727	0.003
Male	87 (95.6)	92 (82.1)		
Female	4 (4.4)	20 (17.9)		
Marital Status			22.979	0.000
Single	11 (12.1)	23 (20.5)		
Married	51 (56.0)	82 (73.2)		
Separated/Divorced	29 (31.9)	7 (6.3)		
Religion			15.242	0.000
Christianity	35 (38.5)	67 (59.8)		
Islam	40 (44.0)	41 (36.6)		
Traditional	16 (17.6)	4 (3.6)		
Educational Level			57.852	0.000
No Formal Education	17 (18.7)	7 (6.3)		
Primary School	38 (41.8)	16 (14.3)		
Secondary School	30 (33.0)	27 (24.1)		
Tertiary Education	6 (6.6)	62 (55.4)		
Income			14.251	0.001
Less than N20,000.00	24 (26.4)	21 (18.8)		
N20,000.00 – N40,000.00	45 (49.5)	35 (31.3)		
Above N40,000.00	22 (24.2)	56 (50.0)		

The predictors of adequate health literacy are shown in Table 4. Married respondents were 1.608 more likely to have adequate health literacy (AOR=1.608, 95% CI= (1.134, 2.281), p=0.008) compared to single respondents, respondents that have either divorced or separated were 0.241 less likely to have adequate health literacy (AOR=0.241, 95% CI= (0.106, 0.551), p=0.001) compared with single respondents. The religion of respondents was also a predictor of adequate health literacy as respondents practising Christianity were significantly two times more likely to have adequate health literacy (AOR=1.914, 95%CI= (1.272, 2.881), p=0.002), also respondents who are Muslim are over one time more likely to have adequate health literacy (AOR=1.025, 95%CI= (0.663,1.585)) than traditional worshipers. Respondents with tertiary education were over ten times more likely to have adequate health literacy (AOR=10.333, 95%CI= (4.470, 23.887), p<0.000) than respondents with no formal education. When the income of respondents was considered, respondents who earned more than 40,000 Naira were over 2 times more likely to have adequate health literacy compared with respondents who earn less than 20,000 Naira. The sex of respondents was not predictive of levels of health literacy.

Table 4: Predictors of Health Literacy among Intra-City Commercial Drivers based on Demographic Factors

Variables	OR	C.I	P-Value
Sex			
Female (Ref)	1		
Male	1.057	(0.789, 1.418)	0.709
Marital Status			
Single	1		
Married	1.608	(1.134, 2.281)	0.008
Separated/Divorced	0.241	(0.106, 0.551)	0.001
Religion			
Christianity	1.914	(1.272, 2.881)	0.002
Islam	1.025	(0.663,1.585)	0.912
Traditional (Ref)	1		
Educational Level			
No Formal Education	1		
Primary School	0.421	(0.235, 0.755)	0.004
Secondary School	0.900	(0.900, 0.535)	0.691
Tertiary Education	10.333	(4.470, 23.887)	0.000
Income			
Less than N20,000.00	1		
N20,000.00–N40,000.00	0.788	(0.500, 1.210)	0.265
Above N40,000.00	2.545	(1.554, 4.168)	0.000

Discussion

The study investigated health literacy status and its associated and predicting factors among intra-city commercial drivers in Ibadan, Nigeria. Results of the study showed that intra-city commercial drivers in Ibadan have a moderate level of health literacy. This result aligns with a similar study of Olyani, et al. (26) who found a moderate health literacy in four health literacy dimensions among ongoing school students. Also, this result corresponds with the research study of Tavakoly, et al. (27) who in their study found out that the health literacy status of the Iranian population is in the marginal health literacy level. Specifically, this study's researchers attribute the result to the nature of commercial drivers' jobs and the settings they operate in. It is the researchers' considered opinion that due to commercial drivers' exposure to various health advertisements and public enlightenments on health-related issues around their area of operation, coupled with the influx of educated people into commercial driving as a result of unemployment in the country, this could have aided their attainment of moderate health literacy. It was further revealed that slightly above half (55.2%) of the commercial drivers have adequate health literacy while almost half (44.8%) of them have inadequate health literacy. This result aligns with Mahdifar, et al. (28), who reported that 56.6% of healthcare employees in Binaloud in Iran had adequate health literacy while 24.4% and 19% had marginal and inadequate health literacy respectively. Similarly, the result is consistent with the findings of Khuu, et al. (29) who found out that approximately half of their study population had inadequate health literacy. Similarly, Banfai-Csonka, et al. (30) found 46.1% of their study participants to have limited comprehensive health literacy.

Results also revealed the dynamics in demographic factors associated with health literacy among intra-city commercial drivers in Ibadan. It was revealed that sex, marital status, religion, educational level and income are significantly associated with the health literacy status of the commercial drivers. The result indicates that the proportion of adequate health literacy among males was higher compared to female respondents. This result agrees with the study of Sharifirad, et al. (31) but is inconsistent with studies (19, 32, 33, 34) that found women to have higher health literacy than men. However, Garcia-Codina, et al. (35), in their study found no significant gender difference in health literacy in Catalonia.

Though this study's result could be attributed to the fact that commercial driving activities are a male-dominated occupation and only a few women participated in the study. Result also revealed that the proportion of adequate health literacy among married commercial drivers were more than the adequate health literacy among the singles and separated/divorced. This result adds to the conflicting results on the association between marital status and the health literacy status of people. For instance, while Joveini et al. (36) observed that single and married people had higher health literacy compared to widowed and separated, Mollakhalili, et al. (37) found single individuals to have high health literacy compared to married individuals. Liu, et al. (38) indicated in their study that divorced individuals had higher health literacy than single individuals. The discrepancies in the results could be a result of different target populations and instruments of data collection. Furthermore, Christians had a higher health literacy compared to Muslims and Traditional worshipers. This result could be attributed to the embracement of western forms of education by Christians in the country than other religions. Equally, the level of education among the commercial drivers influenced their health literacy as commercial drivers with tertiary education had higher health literacy compared with secondary and primary education holders as well as those with no formal education. This result is consistent with previous research findings (39, 40, 41, 42, 43, 44). Having access to higher education could potentially improve an individual's ability to read, analyse and judge information which may enhance health knowledge and skills (23, 44). Income was found to have a significant association with commercial drivers' health literacy. This aligns with earlier studies (44, 45, 46, 47, 48).

This study provides additional evidence that adequate health literacy is predicted by marital status, religion and income of the commercial drivers. This result supports the notion that inadequate health literacy is a function of having a less formal education, lower socioeconomic status, and certain religious and ethnic backgrounds (49). However, health literacy can potentially influence several aspects of people's lives ranging from income level, education, job, housing and access to medical care (50).

Limitations of the study: The main limitation of this study is based on random recruitment of commercial drivers from purposively selected major motor parks in Ibadan. This makes the study's findings limited in generalization and impact. Also, commercial driving activities is a male-dominated occupation, this account for the large disparity in the sex group. This, therefore, makes inferencing something concrete based on gender difficult in the study. There may also have been desirability bias from the respondents when filing or responding to the questionnaire items. Nonetheless, the study provides useful information on health literacy status and its demographic dynamics among commercial drivers in Ibadan. This could help engender better understanding among stakeholders and influence health promotion intervention in a bid to achieve a health-literate society. Future studies should endeavour to use a probabilistic sampling technique and capture a larger sample size for better generalisation of the result of the study.

Conclusion

The study found out that commercial drivers' health literacy is moderate and slightly above half of the commercial drivers have adequate health literacy while almost half of them have inadequate health literacy. This implies that while the majority of the commercial drivers

are not doing badly on the health literacy ladder, their health literacy level could be improved upon to achieve a high health literacy among them. This highlights the need for stakeholders (government, health practitioners and providers, educators etc.) to make a concerted move through policy formulations, interventions, structured education, provision of information and effective communication to improve health literacy and general wellbeing of the commercial drivers. This can help increase their health knowledge and improve critical skills needed to protect their health and prevent health problems as well as inbuild in them positive health-seeking behaviour when faced with health issues. Equally, commercial drivers' characteristics such as sex, marital status, religion, educational level and income were found to be significantly associated with their health literacy status. This indicates that being either a male or female, single, married or divorced, Christian, Muslim or traditional worshiper, having low or high levels of education and income is closely tied to the commercial drivers' health literacy status. Thus, policy formulation and implementation on health promotion for commercial drivers should be based on careful consideration of these identified factors. To improve the health literacy of the commercial drivers, literacy programmes could be organised and health education is made a critical component for them to improve their literacy skills generally and by extension, health literacy.

Conflict of Interest: The authors declare no conflict of interest in the current study

Funding: The authors received no financial support for the conduct of the study

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