

Educational Diagnosis of Eye-Health Seeking Behavioural-Intentions Among Commercial Vehicle Drivers in Ikeja, Local Government Area, Lagos, Nigeria

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Abstract

Eye-health is an important indicator of quality of life. Impairment of visual acuity is considered a great loss of function for those whose vocation depends greatly on excellent visual function such as professional drivers among others. This study was designed to conduct an educational diagnosis of Eye-Health Seeking Behavioural-Intentions of commercial vehicle drivers in Ikeja, Nigeria. Findings from this study would inform a follow-up intervention to strengthen any inadequacies.

Method. *A cross-sectional study aimed to determine adequacy of factors involved in Eye-Health Seeking Behavioural-Intentions of commercial vehicle drivers in Ikeja, Nigeria was implemented on 103 drivers who were purposively selected following consent to participate after ethical approvals. Instrument developed measured Information-Adequacy about eye-health on 20-point, Reinforcing-Enabling Factors on 60-point scale and Eye-Health Seeking Behaviour of participants on 48-point scale. Data collected were analysed using the statistical package for social sciences (SPSS) version 20 and transformed to interval scales as means and standard deviations.*

Results. *Mean age of participants was 50.10±7.70 years and 89.3% claimed to have received formal education. Majority (89.3%) reported driving with officially issued commercial driver's licence while 72.8% reported haven driven for over 10 years. Results for information-adequacy was 8.77±3.80, while scores for reinforcing and enabling factors involved in eye-health seeking was 20.12±5.27 and 5.18±3.05 respectively. Participants eye-health seeking and driving outcomes reported a score of 30.96±9.34.*

Conclusion. *There was observed inadequate eye-health seeking and driving outcomes, low information-Adequacy, poor reinforcing and enabling factors among these commercial drivers. Therefore, this study recommends the need for eye-health motivational and counselling intervention programme to improve eye-health seeking behaviour among commercial drivers.*

Keywords: *Eye-Health Seeking, Information-Adequacy, Reinforcing Factors, Enabling Factors, Safe-Driving.*

Introduction

Eye-health is a very important indicator of quality of life of any individual or population. Visual impairment of any kind constitutes great threat and serious loss of function that impact all aspect of quality of life, most especially for those whose means of livelihood depends entirely on excellent visual function. Professionals such as surgeons, drivers among others depends, rely greatly on excellent visual function to perform their vocations. The insidious nature of the emergence of visual impairment constitute a danger to commercial drivers because driving requires accurate vision and poor vision could result in fatal road accidents. 95% of the sensory requirement for safe driving is provided by the human eyes (Taylor, 1987). Global prevalence of visual impairment is worrisome and has significance in social development (Alfred, 1995). Rubert *et al*, (2017) in a recent publication of systematic review and meta-analysis of trends and magnitude of global blindness and various types of visual impairments reported substantial increase in population affected. In this publication, an estimated 36.0 million are reported to be blind and 216.6 million are observed to have moderate to severe visual impairments and 188.5 million had mild impairment. Similar studies were also reported by the World Health Organization on fatalities, mortalities and the burden of visual impairment due to

road accidents. (WHO, 2003: WHO,2004). Seth *et al* (2017) in a review of the on global causes of blindness reported that the global leading causes of blindness has been attributed to uncorrected refractive error in about 116.3 million, cataract (52.6 million), age-related macular degeneration (8.4 million), glaucoma (4.0 million), diabetic retinopathy (2.6 million) among others. A study of the aetiology of blindness shows that a substantial can potentially be prevented and/or treated. The World Health Organization (WHO, 2012) estimates that, globally, up to 75% of all blindness is avoidable. However, the proportion of the specific causes of blindness varies considerably from region to region, depending on local circumstance. (WHO, 2006).

At about the age of forty years, many people generally notice difficulty in reading tiny printed material, this is called Presbyopia (National Eye Institute, 2010). Other age-related eye problems include cataract, macular degeneration, glaucoma, retinopathy and others. (Dineen, *et al.* 2008). The eyes can also be affected by diseases that affect the whole parts of the human body. Signs of systemic diseases can be manifested on any part of the eyes; hence the eyes are called the window to the body. Certain systemic diseases can be easily diagnosed through eye investigations. Some of these systemic diseases include diabetes, hypertension, HIV/AIDS and sickle cell diseases among others. Considering the importance of excellent visual function, a vocation such as driving, eye-health seeking behaviour and practices of commercial drivers should be determined and examined critically in order to bring about the desired positive behavioural changes. Health seeking behaviour varies among different population and within the same population and are influenced by numerous factors such as age, gender, education, family, society, law, and nature of illness. (UNIPROJECTS,2015). Health seeking behaviours can be influenced by information or providing education and knowledge but over the years, there is a growing concern in both the developed and the developing countries that providing education and knowledge at individual level is not enough in itself to promote a change in behaviour (MacKian, 2003). The global causes of blindness as a proportion of total blindness in 2002 showed that cataract, glaucoma, corneal opacity, diabetic retinopathy, onchocerciasis, childhood blindness, trachoma, and some other causes of blindness are preventable with the right public health interventions or treated adequately with the correct clinical interventions. The World Health Organization (WHO, 2012,) estimates that, globally, up to 75% of all blindness is avoidable. However, the proportion of the specific causes of poor vision and blindness varies considerably from region to region, depending on local circumstance (Godswill and Adedayo, 2014; Samuel et al, 2014).

The theoretical and conceptual grounding of this study is premised on the slow onset of eye-related diseases, except in cases of trauma resulting from injuries, all have devastating consequences to quality of life. Health behaviour which defines the typology of behaviours related to seeking care and concept of level of prevention and modes on intervention contextualize health promotion principles in the natural history of disease pathogenies enable this study to bring into view public health strategies to facilitate the diagnostic paradigm. The eye-health seeking behavioural intentions of the population of commercial vehicle drivers have not been sufficiently studied. Currently, the major concern of this study is to determine what is the level of information-adequacy that motivate eye-health seeking, reinforcing-enabling factors that activate eye-health seeking behaviour and eye-health seeking and driving outcomes among population of commercial drivers. The PRECEDE model provided the required structure for planning well-focused and targeted public health program Green and Kreuter (1991). The PRECEDE model has been used in several other studies with great success. (Sinopoli, Saule, Marino, De Belvis, Fedeici, LaTorre,2018: Renee, Tanya, 2008: Farbod, Mahnaz, Nazila, Firoz, 2017 and Janice, Vicky, Stephen and Nicole,1991).

This study was designed to conduct a theory-grounded educational diagnostic survey of Eye-Health Seeking Behavioural-Intentions of commercial vehicle drivers in Ikeja, Local Government Area of Lagos Nigeria, to determine the adequacy of their eye-health seeking behaviour and their intentions to utilize available eye-health services. Findings from this study is intended to serve as basis to justify a follow-up eye-health strengthening intervention for this population.

Methodology

This was a cross-sectional study design to determine adequacy of predisposing, reinforcing and enabling factors involved in Eye-Health Seeking Behavioural-Intentions of commercial vehicle

drivers in Ikeja, Local Government Area of Lagos Nigeria. A sample of total enumeration of 103 drivers who consented was purposively selected to participate following ethical approval from Babcock University Health Research Ethical Committee (NHREC520/17), were enrolled into the study. This study protocol served as a preliminary need assessment to evaluate to what extent constructs measuring Information-Adequacy that motivate eye-health seeking, Reinforcing-Enabling Factors to activate eye-health seeking behaviour and behaviour related of participants' Eye-Health Seeking meet what may be regarded as acceptable. On the basis of this principle, a validated 63-item instrument with Cronbach's alpha internal consistency of 0.89 was developed that sought to measure Information-Adequacy on 20-point weighted aggregate reference scale, Reinforcing-Enabling Factors on 60-point scale and Eye-Health Seeking Behaviour of participants measured on 48-point scale. Data collected were subjected to statistical analysis using the statistical package for social sciences (SPSS) version 20 and were transformed to interval scales and analysed as means and standard deviations for evaluation.

Results

The results in this study showed that the mean age of participants was 50.10 ± 7.70 years and majority (86.4%) were observed to come from the Yoruba ethnic group while 89.3% claimed to have received some form of formal education. Majority (89.3%) reported driving with officially issued commercial driver's license, while 72.8% reported to have been driving for over 10 years. (See Table 1).

Further, results for information-adequacy reflecting information about eye-health the participants have and implications for safe driving was 8.77 ± 3.80 and translates to 43.9% prevalence of the reference scale and interpreted as below average, while scores for reinforcing ($\bar{x} = 20.12 \pm 5.27$) and enabling factors ($\bar{x} = 5.18 \pm 3.05$) involved in eye-health seeking were both well below average. Participants' eye-health seeking and driving outcomes reported a score of 30.96 ± 9.34 with a prevalence of 64.5% representing well above average on the reference scale (See Table 2).

Discussion

This study was designed as an educational diagnosis to evaluate Eye-Health Seeking Behavioural-Intentions of commercial vehicle drivers in Ikeja, Local Government Area of Lagos Nigeria grounded in the Predisposing, Reinforcing, Enabling, Construct in Educational/Environmental Diagnosis and Evaluation- PRECEDE meta-model of Green, Kreuter, Deeds and Patridge (1980). The study showed that majority of the drivers had some form of information about eye-health, however this level of information exhibited was far below average and grossly inadequate as demonstrated by the data reported in table 2. Furthermore, it is essentially important that commercial drivers require accurate and sharp vision to enable them to make smart visual judgments while driving. Information is directly relevant to the performance of health behaviour (William, Jefferey and Jennipher, 2003).

Table 1. Demographic characteristics of participants in this study

Variables	Respondents in this study N=103	
	N	%
Ethnicity of Participants		
Yoruba	89	84.6
Igbo	11	10.7
Hausa	2	1.9
Others	1	1.0
Educational Attainment	17	16.5
Non-Formal	40	38.8
Primary	44	42.7
Secondary	2	2
Tertiary		
Marital Status		

Unmarried	6	5.8
Married	96	93.2
Divorced	1	1.0
Religion		
Christian	41	39.8
Islam	61	59.2
Others	1	1.0
Type of Licence	92	89.3
Commercial	8	7.8
Private	3	2.9
None	10	9.7
Length of Driving (Years)	18	17.5
1 to 5	16	15.5
6 to 10	59	57.3
11 to 15		
Above 15		

Information is an essential resource necessary to gain knowledge in the process of learning that play important role in raising conscious awareness about an object, event, situation or phenomenon and provide opportunity for making important decisions in resolving course of action in the face of many options. We found out that all parameters measured were not adequate to motivate or activate eye-health seeking behaviour in the participants.

Table 2. Descriptive statistics of measures of information, motivation, and behavioural skills, related to eye-health care seeking for participants in this study

VARIABLES	Reference Scale	Respondents in this study N=103		Percent Prevalence of Reference score
		$\bar{X}(SE)$	$\pm SD$	
Information-Adequacy	20	8.77(0.38)	3.81	43.9
Reinforcing Factors	45	20.12(0.52)	5.27	44.7
-- <i>Personal Motivation</i>	9	4.14(0.21)	2.13	46.0
-- <i>Social Motivation</i>	15	8.57(0.29)	2.92	57.1
-- <i>Perceived Threat</i>	21	7.41(0.29)	2.73	35.3
Enabling Factors	15	5.18(0.30)	3.05	34.5
Eye-Health Seeking	48	30.96(0.92)	9.34	64.5

The application of the PRECEDE model in this study demonstrated the feasibility of diagnosing the educational needs of the drivers with the intent of a follow up intervention, this was consistent with findings from other related studies (Catherine & Knowlton, 2013: Sayyed, Leila, Akbar, Katayoun, Hamidreza 2012: Mahdi, Atarodi, Alireza, Mahdokht ,2012). This study found the information-adequacy of the commercial drivers as not encouraging as this was below average expected motivate eye-health seeking and was observed to be consistent with the finding in the study of Ovenserri and Adofo (2011) who reported a lack of awareness which they considered to constitute serious barrier towards eye-health care among commercial drivers . This was also closely followed by Isawumi, Adeoti, Ubah, Oluwatimilehin and Raji (2011) who recommended eye- health education for commercial drivers.

The reinforcing factors and enabling factors also showed mean scores that were below average (See Table 2). The drivers did not demonstrate adequate perception of threat regarding the likelihood of a deteriorating visual acuity and the consequences to their quality of life for poor eye sight and therefore were not sufficiently motivated personally to act early in ways that can significantly enhance their willingness towards seeking eye-health care and mitigate any adverse consequences. This is

consistent with the study of Samuel *et al* (2015) which identified a relationship between vision problems and road accidents among commercial drivers where the lack of immediate threat to life were exhibited in delayed search for help at the earliest stages of visual challenges when remedial intervention would address eye-health issues adequately. Similarly, Oladehinde, Adeoye, Adegbehingbe and Onakpoya (2007), identified poor visual acuity as a possible causal factor of road accidents among commercial drivers in Nigeria.

The barely above average mean scores reported for eye-health seeking does not satisfy the requirements for safe driving in such poor condition where only excellent visual function is desirable. This situation is exacerbated by the fact that participants' information-adequacy level was poor along with their reinforcing and enabling factors which reported below average scores respectively. This study has therefore demonstrated the existence of a gap in information about eye-health as not sufficient and proposes an urgent need for a follow up intervention programme that would seek to arouse conscious awareness of the implications of poor eye sight for commercial drivers whose vocation depends greatly on excellent visual function, by implementing motivational counselling strategies in subsequent studies.

Finally, eye-health is of great public health concern and an important indicator of the quality of life of an individual. With 95% of the sensory requirement for safe driving provided by the eyes (Taylor, 1987), the eye-health seeking behavioural intentions of commercial drivers should be of utmost public health concern, especially for policy-makers who regulate safe driving practices. Findings from this study would be used to inform a follow-up intervention to strengthen the inadequacies observed. This study makes the following distinct contributions to existing body of knowledge as an attempt to provide solution for the observed poor eye-health seeking behavioural intentions of commercial vehicle drivers and the dearth of publications in this field by designing a theory-grounded educational diagnosis for assessing eye-health seeking of commercial drivers where none existed at the time of study, results obtained provided evidence of factors in eye-health seeking outcomes to be addressed for a successful design of intervention following the pathways predicted by the theoretical and conceptual framework adopted. Furthermore, findings from this study can be used to formulate policies that will enhance safer roads if drivers have the required eye-health.

Conclusion

Despite the fact that findings from this study showed a barely above average eye-health seeking and driving outcomes, there was sufficient observed evidence suggesting deficiency in information required to actuate eye-health seeking and low perceived threat of consequences for safe driving, inadequate reinforcing and enabling factors to motivate eye-health seeking among these commercial drivers. Therefore, this study recommends the need for eye-health motivational and counselling intervention programme to improve eye-health seeking behaviour among commercial drivers.

Recommendations

This study makes the following recommendations;

1. Findings from this study would be used as baseline to inform a follow-up intervention to strengthen any inadequacies observed,
2. Relevant stake-holders like the drivers' union, Non-Governmental Organizations should be involved in massive and aggressive campaigns, advocacies and awareness creation of eye-health among commercial drivers
3. Enforcement of eye-health standards by government agents among commercial drivers in Lagos State.
4. Free eye glasses should be provided by government for registered commercial drivers in Lagos State.
5. Compulsory yearly eye examinations for all commercial drivers in Lagos State.

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