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Commercial Cyclists (Okada Riders) and Alcohol Related Problems in Delta State, Nigeria

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Abstract: Driving under the influence of alcohol has been identified in past studies and reports as the major cause of road accidents and other public health issues. Commercial cyclists (popularly known as okada riders in Nigeria) pose a great danger to the public in most part of Nigeria because of their reckless riding behaviours. This study therefore examined the prevalence and problems of drinking among okada riders in Delta State, Nigeria. It is a cross sectional study of 250 okada riders across Delta State. Two sets of scales were used to collect data from the various parks. The AUDIT scale was used to establish the prevalence of alcohol drinking while the second scale teased out the problems associated with drinking. The results showed the prevalence of drinking, their perception about the problems associated with drinking and the number of accidents they have had in the past. The regression analysis showed drinking prevalence and occurrence of accidents and other public health concerns... It was therefore recommended that the drinking-driving policy in Nigeria should be strengthened as the advocacy on harm reduction is gaining global concern.

Keywords: Alcohol, okada, accidents, public health, prevalence

Introduction

Motorcycle is a mode of transportation used in most part of the world; in advanced countries and economy, it is usually ridden for pleasure and adventure but in Nigeria

and some other African countries such as Togo, Benin, Burkina Faso, Sierra Leone and Liberia, motorcycles are used for hire and commercial purposes (Wikipedia, 2015). It is popularly called 'Okada'

in Nigeria and it is a preferred mode of transportation for both old and young and men and women. Okada gradually became a mode of commercial transportation in Nigeria in the late 1980s and early 1990s during the economic downturn and introduction of the Structural Adjustment Program (SAP) (Arosanjin, Olowosulu & Oyeyemi, 2012; Wikipedia, 2015). The economic downturn with its attendant consequences like unemployment led many young people to the use of motorcycles for commercial purpose. Another major reason for the steady rise in the use of okada in Nigeria is the lack of sustainable public transport and bad roads. Many prefer okada because of its fastness and ability to manoeuvre the incessant heavy traffic in major cities and the ability to reach remote areas where buses cannot easily access.

Though all vehicles plying the road are at risk of injury and accidents, motorcyclists from past research findings and road traffic report globally stand a greater risk and account for most of the road traffic accidents (Fagnant & Kockelman, 2013). In America where motorcycles are not used for commercial purpose there is still the problem of fatality of road traffic accidents. In 2010, it is reported that 4,187 fatal crashes occurred in the US and it resulted in a total of 4,462 persons been killed (Fagnant & Kockelman, 2013). Though road traffic accident is underreported and underestimated in Nigeria, CLEEN (2013) reported that almost half (47%) of the road accidents in Nigeria involved an

okada. The National Orthopaedic Hospital in Lagos (former capital of Nigeria) records between September 2000- June 2009 showed 1,789 victims of okada accidents (CLEEN, 2013). This record is just for one State out of the 36 States in Nigeria, it will be quite alarming when the records of all the Orthopaedic hospitals in Nigeria are aggregated.

Alcohol has been identified as one of the major causes of motorcyclists' crash in past studies in and outside Nigeria; in the US, 32% of the Fatal Accident Reporting system data as indicated in Fagnant & Kockelman (2013) of motorcycles collisions involved alcohol. There are some studies in Nigeria affirming the role of alcohol in the fatal crash of motorcyclists; Alti-Muazu & Aliyu (2008) in their study of commercial cyclists in Zaira, Northern Nigeria found a high prevalence of 59.5% of road traffic accident that was associated with the use of psycho active drugs. Ogunmodede & Akangbe (2013), Ogunmodede, Adio, Ebijuwa, Oyetola & Akinola (2012) and Okojie & Omuemu (2006) in their studies found high alcohol prevalence among motorcyclists in Oyo and Benin respectively.

Ogunmodede and Akangbe (2013) succinctly described the dangers of okada accidents as so serious that sometimes lead to instant death, loss of limbs, sight, brain damage and terrible economic loss. Though some reasons have been given to justify the use of alcohol among okada riders such as to keep awake, suppress fatigue (because most of them work

for more than 10 hours per day), peer pressure, and mood elevation (Alti Muaza&Aliyu, 2008). Another reason for easy patronage of alcohol among cyclists in Nigeria is because alcohol retailers are close to most okada parks (Ogunmodede et al., 2012; Okojie & Omuemu, 2006). In most part of Nigeria, okada riders/drivers are usually males with very few exceptions of females and they are also young people between 18-40 years (Ngim & Udosen, 2007; Adisa, 2012). Males and young people are known to easily abuse alcohol (Adekeye, 2012).

Alcohol is known to impair a rider's sense of judgement and leads to excessive speeding and violent riding which ultimately leads to fatal crashes. The goal of 'Decade of Action for Road safety 2011-2020' is to stabilise and then reduce the level of road traffic fatalities (CLEEN, 2013). To achieve this, it is necessary to establish the prevalence of alcohol among okada riders particularly in States where any known study has not been done, though some studies have been carried out in Benin, Oyo, Lagos and Zaira, the thrust of this paper therefore is to determine alcohol prevalence among motorcyclists in Delta State and the problems associated with drink driving/riding.

Methods

This survey is a cross sectional study of 222 commercial cyclists drawn from okada hotspots in Delta State. The Delta State Government recently banned okada from operating on major highways and towns in the State but the ban did not affect towns

like Kwale, Agbor, Umuenede, Obiaruku, Mosagar, Akumaeze, Ubuluku, Isele Uku ,Eku,and Sapele. The samples and locations were selected purposively taking into considerations where okada business thrives. Three of these towns (Agbor, Umunede and Obiaruku) were selected for the study because of the huge okada activities These towns are located in Delta North Senatorial Districts and they are predominantly Christians. These towns do not have other mode of intra-city transportation system during the daytime except for okadas. In Agbor, there are different points where the okada riders wait to pick up passengers. For this study, the researchers used a major point linking the town to the major highway (Meiriere Junction). Many of okada riders ply this route daily, so the researchers approached them at this point. At Umunede town, there are two major parks, the Express and Market Junctions. The Market Junction Park is located inside the town and the researcher decided to use this Park, since it is central. The last location, Obiaruku, has two major parks. The two parks are small so they were used for the study. The okada riders were approached at all these Parks and the purpose of the study was explained to them after which their consent were obtained before the administration of the questionnaire.

Most of the okada riders are young people who can read and write, so they were able to respond to the items in the questionnaire. The few who could not read had the questions read

and explained to them in ‘Pidgin English’. All the okada riders sampled are males, it is not common to see female commercial okada

rider. Females ride motorcycle in the State but not for commercial purposes.

Table 1: Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage
Age	Below 20 years	21	9.25
	21 - 30 years	107	47.14
	31 - 40 years	76	33.48
	41 - 50 years	21	9.25
	Above 50 years	2	0.88
Religion	Christianity	155	68.58
	Islam	43	19.03
	African Trad. Rel.	28	12.39
Marital status	Married	144	65.45
	Single	76	34.55
Years of experience	1 – 2 years	67	29.91
	3 – 5 years	130	58.04
	Above 5 years	27	12.05

Result in Table 1 puts majority of study respondents to be aged 21 – 30 years [107 (47.1%)] and 31 – 40 years [76 (33.5%)], while the extremely younger [below 20 year; 21 (9.3%)] and older [41 – 50, and above 50 years; 23 (10.1%)] respondents were sparsely represented. Similarly, study respondents of Christian extraction [155 (68.6%)], Married [144 (65.5%)], and having 3 – 5 years of riding experience [130 (58.0%)] were more prominent respectively.

Instrument

Two sets of questionnaire were used for data collection. The first is World Health Organization’s Alcohol Use Disorder Identification Test (AUDIT). It has two sections: Section

A contains demographic variables (i.e. age, religion, marital status and years of experience) Section B contains questions that were developed to identify individuals whose alcohol consumption has become hazardous. AUDIT is the main instrument used for the study, it is a 10 item instrument that bother on the frequency and quantity of alcohol use. It is structured in a five–response format, ranging from ‘never’ through ‘monthly, less than monthly’ ‘weekly’ to ‘daily or almost daily use of alcohol’. ‘Never’ attracts a score of 0, ‘monthly or less’ attracts 1-2, ‘weekly’ attracts 3 while ‘daily or almost daily’ attracts a score of 4. Items 9 and 10 on the scale are structured to have three responses–‘

never’, ‘yes, but not last year’ and ‘yes during the last year’. 0, 2 and 4 scores are attached respectively to these options. AUDIT has a maximum score of 40 and a minimum score of 0 .A score of 0-7 is considered no/low alcohol related problem and a score of 8+ is considered hazardous drinking. AUDIT has been validated for use in Nigeria by Adewuya (2005) with a sensitivity of 0.94 and specificity of - 0.92.

The second questionnaire focused on the perception of respondents on the problem associated with drinking of alcohol and riding an okada

Results

Assessment of Okada riders’ alcohol consumption risk level

The AUDIT scale was employed in evaluating the level of exposure of study respondents to alcohol consumption. The primary intention of using the AUDIT scale is to have a standard measure for classifying respondents’ alcohol consumption. For the purpose of this study, the AUDIT scale was grouped into two non-complex categories, viz; a score of 0 through 7 was classified as “No/Low risk level”, while a score of 8 through 40 was classified as “High risk level”. The result is disaggregated based on marital status and years of (driving) experience, and is presented in Table 2.

Table 2: Alcohol Consumption Risk Level

VARIABLES	AUDIT	
	Low risk level	High risk level
<u>Marital Status</u>		
Married	85(59.9%)	57(40.1%)
Single	48(63.2%)	28(36.8%)
<u>Years of Experience</u>		
1 – 2 years	45(67.2%)	22(32.8%)
3 – 5 years	74(57.4%)	55(42.6%)
Above 5 years	14(53.8%)	12(46.2%)
Total	133(59.9%)	89(40.1%)

An analysis of the AUDIT scores of respondents, according to Table 2, shows that 133 (59.9%) respondents are at a low risk level, while 89 (40.1%) are at a High risk level. Of these latter group of respondents, i. e High risk level, the result further shows a higher proportion of married respondents (40.1%) as against their

Single counterparts (36.8%) are exposed to High risk level of alcohol consumption. Also, with respect to the years of driving experience of respondents, the result shows a lower proportion of respondents with 1 – 2 years’ experience (32.8%) as against those with 3 – 5 years (42.6%) and above 5 years (46.2%) driving

experience are exposed to high risk level of alcohol consumption. In summary, 4 out of every 10 study respondents are exposed to high risk level of alcohol consumption. This seems marginally prevalent amongst the married respondents, and also those with 3 -5 years and above 5 years of experience.

Alcohol Consumption and Alcohol-related Accidents

Based on the afore-mentioned categorisation of the AUDIT scores into “No/Low risk level” and “High risk level”, a Pearson Chi-squared analysis was conducted to determine the measure of association/relationship between respondents’ alcohol-related accidents status and their AUDIT categorisation. The results are also disaggregated based on marital status and years of (driving) experience, and are presented in Table 3 and Table 4

Table 3: Alcohol Consumption Risk Level and Alcohol-related Accidents

ALCOHOL-RELATED ACCIDENT			
AUDIT level	Yes	No	X ² /p-value
Low risk level	16(29.6%)	49(72.1%)	21.767 (0.000)
High risk level	38(70.4%)	19(27.9%)	

Table 3 shows the chi-squared analysis for significant association/relationship between alcohol-related accidents and alcohol consumption risk level. The result shows a chi-squared value of 21.767 and a p-value of 0.000. This result indicates there is significant association between alcohol consumption level of respondents and whether their okada accident was alcohol related or not given the obtained p-value (0.000). This indicates that okada accidents said to be alcohol-related are significantly dependent on the alcohol

consumption risk level of respondents. Thus as shown in Table 3, a significant proportion of respondents whose okada accidents are alcohol-related are equally at a high risk level of alcohol consumption (70.4%), and vice-versa for those whose accidents are not alcohol-related (72.1%).

Furthermore, Table 4 takes into account the role of marital status and years of (driving) experience on this relationship/association. Specifically, is this relationship existent across respondents’ marital and their years of (driving) experience?

Table 4: Alcohol Consumption Risk Level and Record of Accidents

AUDIT level	ALCOHOL-RELATED ACCIDENT		X ² /p-value
	Yes	No	
MARITAL STATUS			
<i>Married</i>			
Low risk level	9(27.3%)	34(82.9%)	23.264 (0.000)
High risk level	24(72.7%)	7(17.1%)	
<i>Single</i>			
Low risk level	7(38.9%)	13(59.1%)	1.616 (0.204)
High risk level	11(61.1%)	9(40.9%)	
YEARS OF EXPERIENCE			
<i>1-2 Years</i>			
Low risk level	3(25.0%)	15(68.2%)	5.812 (0.016)
High risk level	9(75.0%)	7(31.8%)	
<i>3-5 Years</i>			
Low risk level	12(34.3%)	24(80.0%)	13.662 (0.000)
High risk level	23(65.7%)	6(20.0%)	
<i>Above 5 years</i>			
Low risk level	1(20.0%)	8(66.7%)	3.085 (0.079)
High risk level	4(80.0%)	4(33.3%)	

The result shows there is significant relationship between alcohol-related accidents and alcohol consumption risk level for married respondents (chi2=23.264, p=0.000), but not for Single respondents (chi2=1.616, p=0.204). Thus, the marital status of respondents has a moderating effect on the relationship between alcohol-related accidents and alcohol consumption risk level.

This implies the relationship between alcohol-related accidents and alcohol consumption risk level of respondents is not significant for all categories of

marital status. In essence, this relationship is only existent for Married respondents, whereas the relationship is non-significant for Single respondents. Therefore, Married respondents that have experienced accidents that are alcohol-related are significantly more likely to have high risk level consumption of alcohol.

Further to the foregoing, Table 4 shows the result for a similar analysis disaggregated by Years of (driving) experience of respondents. The result shows there is significant relationship

between alcohol-related accidents and alcohol consumption risk level for respondents with 1 – 2 years’ experience (chi2=5.812, p=0.016) and 3 – 5 years’ experience (chi2=13.662, p=0.000), but not for respondents with above 5 years’ experience (chi2=3.085, p=0.079). Thus, the years of (driving) experience of respondents has a moderating effect on the relationship between alcohol-related accidents and alcohol consumption risk level.

This implies the relationship between alcohol-related accidents and alcohol consumption risk level of respondents is not significant for all categories of respondents’ years of (driving) experience. Specifically, this relationship is only existent for respondents with 1 – 2 years’ experience and 3 – 5 years’ experience, whereas the relationship

is non-significant for respondents with more than 5 years’ experience. Therefore, respondents with 1 – 2 years’ experience and 3 – 5 years’ experience who have experienced accidents that are alcohol-related are significantly more likely to have high risk level consumption of alcohol.

Perception of Alcohol Use amongst Okada Riders

Perception of alcohol use was assessed on a 7-item scale, the overriding aim of which is to assess how study respondents view the issue of alcohol intake cum its influence amongst Okada riders. The “Total” column in Table 3 indicates the overall (non-disaggregated) response to a particular item. Each item was separately analysed and disaggregated on the basis of “Marital status” and “Years of experience”.

Table 5: Perception of the Influence of Alcohol Use amongst Okada Riders

ITEM	MARITAL STATUS		YEARS OF EXPERIENCE			TOTAL
	Married	Single	1 – 2years	3 – 5 years	Above 5 years	
<i>(a) Alcohol can make an Okada rider to be reckless while driving</i>						
		68	60	123	23	206
Yes	135 (95%)	(91%)	(91%)	(95%)	(89%)	(93%)
No	7 (5%)	7 (9%)	6 (9%)	6 (5%)	3 (12%)	15 (7%)
<i>(b) Alcohol can cause an Okada rider to speed excessively</i>						
		70	62	121	24	207
Yes	134 (94%)	(92%)	(93%)	(94%)	(92%)	(93%)
No	8 (6%)	6 (8%)	5 (8%)	8 (6%)	2 (8%)	15 (7%)
<i>(c) Alcohol causes problems for both an Okada rider and passenger</i>						
		65	63	120	24	207
Yes	139 (99%)	(86%)	(94%)	(94%)	(92%)	(94%)
No	2 (1%)	11 (15%)	4 (6%)	8 (6%)	2 (8%)	14 (6%)
<i>(d) Okada riders should be banned</i>						

from taking alcohol while riding

		63	55	118	23	196
Yes	130 (92%)	(83%)	(82%)	(92%)	(89%)	(88%)
		13	12			26
No	12 (9%)	(17%)	(18%)	11 (9%)	3 (12%)	(12%)

(e) Most Okada riders take alcohol before setting out for business

		70	64	121	21	206
Yes	133 (94%)	(92%)	(96%)	(94%)	(81%)	(93%)
No	9 (6%)	6 (8%)	3 (5%)	8 (6%)	5 (19%)	16 (7%)

(f) Alcohol is good for an Okada rider

		12	9	18		35
Yes	21 (15%)	(16%)	(13%)	(14%)	8 (31%)	(16%)
		64	58	111	18	187
No	121 (85%)	(84%)	(87%)	(86%)	(69%)	(84%)

(g) Many health problems are associated with alcohol drinking

		64	57	108	18	183
Yes	119 (84%)	(84%)	(85%)	(84%)	(69%)	(82%)
		12	10	21		39
No	23 (16%)	(16%)	(15%)	(16%)	8 (31%)	(18%)

Table 5(a), 5(b), and 5(c) shows that a significant proportion of surveyed respondents (about 93%) are of the view that alcohol could make an Okada rider reckless in driving, and also speed excessively; respondents of different sexes (male or female) and of different years of experience expressed a similar view. Furthermore, 94% of respondents are of the view that alcohol causes problems for both the Okada rider and passenger. While this view was most common amongst married respondents (99%) than their Single (86%) counterpart, it was evenly expressed across the different age groups. In essence the consensus view among surveyed respondents is that alcohol can influence the ability of an Okada rider to become carefree while driving and as such pose a

danger to him, the passengers, and other commuters.

Table 5(e) shows that 93% of respondents are of the view that most Okada riders take alcohol before setting out for business. While a similar majority of Married (94%) and Single (92%) respondents expressed this same view, a lesser majority of Okada riders with above 5 years' experience (81%) as against a larger majority of those with 1 – 2 years (96%) and 3 – 5 years (94%) driving experience were of this opinion. In spite of this, as shown in Table 3(d), only 88% of respondents are of the view that Okada riders should be banned from taking alcohol; this view was mostly expressed by respondents who are Married (92%), and those who have at least 3 years driving experience i.e

3 – 5 years (92%) and above 5 years (89%), as against those with 1 – 2 years' experience (92%).

Summarily, despite the high proportion of accent to the dangers posed by alcohol to Okada riders and their passengers (as indicated in Table 5(a), 5(b), and 5(c)), and that it has health implications (82%, as shown in Table 5(g)), yet a sizeable portion of respondents still insist that alcohol is good for an Okada rider (16%, as shown in Table 5(f)), and should not be banned amongst them (12% as shown in Table 5(d)).

Discussion

The study revealed that majority of the respondents are young people, aged 21 – 30 years [107 (47.1%)] and 31 – 40 years [e76 (33.5%)], This collaborates the findings of Ogunmodede et al (2012) and Ngim and Udos (2007) that most okada riders are young people . Some of these young people are graduates or School certificate holders who are not employed in public or organized private sector. The findings of this study revealed that 60% scored no/low alcohol related problem and 40% scored 8+ is considered hazardous drinking. This is very high; it shows that many of the okada riders have alcohol problems. This finding is in consonance with similar study done in Nigeria(Benin, Oyo and Zaira) where they found high alcohol prevalence among okada riders.(Alti –Muazu &Aliyu ,2008; Ogunmodede &Akangbe, 2013; Ogunmodede et al 2012 and Okojie &Omuemu2006) Alcohol /risk amongst Okada riders appears more

prominent for those who are Single (i.e. unmarried), and above 5 years of riding experience. Plausible reasons could be that they do not have any major legitimate responsibility i.e. nuclear family members to cater for; hence they could resort to drinking.

On alcohol problem and okada riding , 75% of Okada riders have witnessed fellow Okada riders involved in accidents due to influence of alcohol; this was more commonly witnessed by the most experienced riders (89%) i.e. above 5 years riding experience, than their less experienced counterparts. Based on personal experience of “okada” accidents by study respondents, only 53% attest to ever having accidents while riding their okada. Again, this was common among most experienced okada riders (69%) i.e. above 5 years riding experience. Majority of the respondents agreed that most okada riders take alcohol and that alcohol poses great danger . In essence the consensus view among surveyed respondents is that alcohol can influence the ability of an Okada rider to become carefree while driving and as such pose a danger to him, the passengers, and other commuters.

Summarily, despite the high proportion of accent to the dangers posed by alcohol to Okada riders and their passengers (as indicated in Table 3(a), 3(b), and 3(c)), and that it has health implications (82%, as shown in Table 3(g)), yet a sizeable portion of respondents still insist that alcohol is good for an Okada rider (16%, as shown in Table 3(f)), should

not be banned amongst them (12% as shown in Table 3(d)).

Conclusion

This study has established that most okada riders are young people between 20-40 years old. It has also revealed high alcohol prevalence among them especially the singles. The respondents in this have equally affirmed that okada riders take alcohol before setting for business and alcohol makes a rider prone to accidents, recklessness and over speeding. Majority of the respondents indicated that an okada rider should be banned from taking alcohol while on duty. There is the need for relevant agencies to work towards creating awareness on the danger to lives when an okada rider drinks and ride.

Recommendation

Based on the findings of this study it is recommended that the Federal Government of Nigeria through the Federal Road Safety Commission (FRSC) should device effective

strategies for monitoring the implementation of the policy on alcohol and driving. Most okada riders take alcohol with impunity because they know that except they run into trouble there are no measures in place to detect their deinking.. Officials of FRSC should be trained and deployed to all parts of the country to enforce compliance with the road traffic rules and code of conduct.

Non-Governmental Associations, academic associations like Counselling Association of Nigeria and Faith based Organization in collaboration with FRSC should replicate Motorcycle Safety Campaign program held by Arrive Alive Road Safety Initiative and sponsored by Reach out Nigeria, a group of the Christ Embassy Church. This kind of program should be organised at different parks across the nation to educate motorcyclists on safety, the danger of drinking and driving and other related issues causing road traffic accidents.

References

- Adesunkanmi, A. R., Oginni, L. M., Oyelami, O. A. and Badru, O. S. (2000). Road traffic accidents to African children: assessment of severity using the injury severity score (ISS). *Injury*, 31: 225-228.
- Adewuya, A. O. (2005). Validation of the Alcohol Use Disorders Identification Test (AUDIT) as a screening tool for alcohol related problems among Nigerian university students. *Oxford Journals Alcohol and Alcoholism*, 40:575-577
- Alti-Muazu, M. and Ahigu, A. A. (2008). Prevalence of Psychoactive substance use among commercial motor cyclist and its health and social consequences in Zaria, Nigeria. *Am Afr Med* 7(2): 67 – 71
- Ariwe Alure Road Safety Initiative (2010). Highlights of 2010 Activity. Retrieved from www.ariwealurenigeria.com/now_safety.itm
- CLEEW Foundation (2013). Roads and Road Safety in Nigeria: Reflections from the 2013

- National Crime and Safety Survey
- Etukumena, I. A., Onumbu, L. L., John, J., and Valente, M. (2010). Possible Cause of Motor cycle (Okada) accidents in Kanu, Nigeria Dry Prov. 16: A88doi: 10.1136/up.029215-39
- Fagmant, D. J. & Kockelman, K. M. (2013). Crash Experiences, Safety Perspectives and Counter Measures. Paper submitted for Presentation at the 92nd Annual Meeting of the Transporters Research Board, Washington DC Referred from www.cae.utexas.edu
- Health News NG (2013). Banning alcohol and cigarettes at motor parks would increase the number of suicide Nigerians warn, from Thurs, 21st May 2015. Retrieved from www.healthnewsng.com
- Kehinde, O. S. and Adegoke, A. E. (2012). Taking alcohol by deception: an analysis of Ethanol concentration of “Paraga” an alcoholic herbal mixture in Nigeria BioMed Central Vol 5
- MMWR (2004) Trends in Motorcycle Fatalities Associated with Alcohol – Impaired Driving - United States 1983 – 2003 Referred from www.Cdc.gov
- Natural Highway Traffic Safety Administ (2007). The Detection of DWI Motor Cyclist. DOT HS 807856 Washington, D.C.
- Obot J. S. (2001). In Surveys of drinking Patterns and Problems in Seven Countries; Demers A, Room R, Bongault C., Montenlo M., Hulebrand J. Editor Geneva World Health Organisation, 63-69
- Odelowo, E. O. (1992). Pattern of pedestrian injuries from road traffic accidents in Nigerians. West Afr. Med. J. 130-4.
- Ogdem, E. J. D. and Moskonetz, H. (2004). Effects of alcohol and other Drugs on Driver Performance. Traffic Day. Prov.PubMed. Vol 5. 185- 198
- Ogunmodede, T. A. and Akengbe, C. A. (2013). Effect of road safety information availability and utilization on commercial motorcycle accidents in Nigeria Academic Journals, 5(3): 68 - 76
- Okojie, D. H., Omuemu, V. O. and Ighodaro, J. N. (2006). Characteristics of Commercial Motor-Cyclists in Benin City: Journal of Medicine and Biomedical Research 5 (1): 58-63.
- Pang, T. V., Umar, R. S., Azher, A. A., Ahmed, M. M., Nasur, M. T. and Harwant, S. (2002). Accident characteristics of injured motorcyclists in Malaysia. Mal. Med. Assoc. 1.
- Wikipedia, The Free Encyclopedia (2015). Okada (Commercial Motorcycle) Retrieved from [www.en.wikipedia.org/wiki/ok_oda_\(commercial_motorcycle\)](http://www.en.wikipedia.org/wiki/ok_oda_(commercial_motorcycle))