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Road Safety Behaviour of Motor-Cyclists and their Passengers in Obafemi Awolowo University Ile-Ife, Nigeria

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Abstract

Introduction: This study examined the use of safety helmet and the proportion of motorcyclist who carried more than one passenger at a time by motorcyclist entering Obafemi Awolowo University and Teaching Hospital in Ile-Ife to determine the degree of helmet wearing and compliance with safety regulations by cyclist and their passengers.

Method: At peak times on a selected day, motorcycles were stopped at the university's entrance barriers. Both the motorcyclists and the passengers were identified. Student, employee, hospital patient and observations of the rate of the use of safety helmet by the motorcyclists and their passengers were recorded and questionnaires were also given to the motorcyclists and their passengers that are eighteen years and above and were collected back.

Results: A total of 4,779 motorcycles were stopped and observed, 241 (5%) of the motorcyclists carried passenger on the tank. Out of 974 motorcyclists who were alone on the motorcycle without passenger, only 652 wore safety helmet. About 1,188 were observed to carry 2 or more passengers at a time. Only 2,617 carried one passenger. About 9,785 questionnaires were also given to both the motorcyclists and their passengers. Only 8,125 were collected back at the collating centers out of which only 6,657 were completely filled by both motorcyclists and their passengers that were 18 years and above, coded and subsequently analyzed. Despite various designs and requirements of making the use of safety helmet a compulsory headgear for motorcycle riders and passengers in Ile-Ife, majority of them do not comply with motorcycle/traffic laws because there was no serious penalty for offenders whenever these rules were broken.

Conclusion: To avoid crashing by motorcyclist, education and proper training on traffic regulations to increase their knowledge of regulations bidding on motorcycles will be taught. Federal road safety corps, public health nurses, health workers and schools are to educate the masses on the effects and overall strategy of making use of safety helmet.

Practical application: There is need for the public health nurse and road safety corps to educate, counsel and re-orientate the motorcyclists and other road users on their mutual responsibilities such as exercising care, a discipline cyclist, by not carrying more than one passenger, obeying road safety rules on the use of safety helmet by both the motorcyclists and their passengers.

Keywords: Human factors; Nigeria; Developing countries; Road traffic accident; Safety helmet; Motorcyclist; Passenger

Introduction

Motorcycles are the fastest growing sector of motor vehicles worldwide and comprise the majority of all motor vehicles in low and middle income countries [1]. The majority of road traffic injuries related deaths occur in low income and middle income Countries across age groups, gender, economic status and areas [2]. Motorcycle accidents account for a large proportion of road traffic accidents and the riders of these motorized vehicles have a high risk of injuries or death [3,4].

Over half of all road traffic collisions involve motorcyclists; the risk of incurring severe injuries or fatalities are ten times higher among this group than users of four-wheeled vehicles [5,6]. The annual increase in the number of road accidents in Nigeria and consequent increase in the number of victims is disturbing and alarming. Motorcycle-related head injuries are most prevalent among men [7] and the proper use of safety helmets is an effective way to reduce the severity of injuries

and fatalities among motorcyclists during collisions [4,6,8]. Many factors are associated with traffic injury including environmental, geometric, behavioral, vehicular, and socioeconomic factors, among the behavioral is the non-use of safety helmet and non-adherent to traffic safety rules [4,9].

Police records show statistically that 89 road accidents occur per day in Nigeria and 29 people were killed daily, while 174 sustained injuries from various road mishaps all over the country [10]. Motorcycles are a common means of transportation in low-income and middle-income countries including Nigeria as they are cheap and accessible to many people. As a result, motorcycle related injury has become a major public health concern [11] in countries such as Nigeria. In particular, injuries to the head, after motorcycle crashes, are common causes of severe morbidity and mortality [12].

Furthermore, motorcycle helmets are a highly effective road safety intervention that reduces the frequency and severity of head injuries resulting from traffic crashes [13]. Proper use of helmets is an effective way to reduce the severity of injuries and fatalities among motorcyclists. However, many motorcyclists do not use safety helmet properly [6]. But studies from low and middle income countries also found a high prevalence of non-helmet use of motorcyclists in Nigeria to be 76.2% [14]. Another study at the Obafemi Awolowo University Teaching Hospital Ile-Ife, Nigeria in 1998 identified the use of personal protective equipment (PPE) to be practically nonexistent among the motorcycle riders [15]. Factors associated with non-helmet use among motorcyclists included age (younger people), gender (male riders, female riders), being a passenger [16,17]. Motorcyclists have also been identified at risk for head trauma Head injury can leave a person permanently useless and dependent on good will of people, so prevention and safety as far as motorcycles accidents are concerned are not negotiable at all. So developing a precautionary measure which can reduce accident occurrence and likely injuries and/or death is essential [6,8].

Motorcycles safety helmets are compulsory headgear in some states in Nigeria. A helmet is a form of protective gear worn on head and usually made of metal or plastic designed for protection of the head from falling objects or high-speed collision. Although wearing a safety helmet is compulsory in Ile-Ife, Osun state, Nigeria for both motorcyclists and their passengers. But from the researcher's observation, many riders and their passengers do not comply with the regulations that require a motor-cyclist to carry out one passenger on the rear seat but few people bother to obey the rule and the law enforcement that operates haphazardly and fails to consistently penalize those who deviate from it [6]. Helmet use lessens serious injuries, lowers mortality rates and reduces the need for hospital resources [18].

The aim of this study is to examine why motorcyclists carry more than one person, the reason why they do not comply with motorbike traffic rule and to examine the degree of the use of safety helmet among motorcyclists and their passengers entering Obafemi Awolowo University and Hospital Complex on a particular day. Obafemi Awolowo University is the only federal university in Osun State with over 40,000 students and has a University Teaching Hospital connected to the campus.

Objectives

The specific objectives of the study are to ascertain:

1. The proportion of motorcyclist who wore safety helmets.
2. The proportion of passengers who wore safety helmets.
3. The proportion of motorcyclist who carried more than one passenger at a time.

Hypothesis

Furthermore, three hypotheses were generated:

1. Carrying more than one passenger will not be perceived as a significant determinant of motorcycle accident by motorcyclist in Obafemi Awolowo University.
2. Non-use of safety helmets will not be perceived by motorcyclist in Obafemi Awolowo University as hazardous.
3. Non-use of safety helmets will not be perceived by motorcycle passengers in Obafemi Awolowo University as hazardous.

Method

The Setting of the study

This study was conducted in Ile-Ife, a medium sized city in Osun state, Nigeria, with a population of 501,952. It is one of the larger centers and probably the oldest town of the Yoruba people in Ile-Ife. Transportation in the town is either by road [19]. Ile-Ife has an extensive road building programme with road calming measures in operation and road safety programmes run by the federal road safety commission [20].

Instrument

The questionnaire comprised of two sections A and B of 46 items that explored the socio-demographic characteristics of the respondents and evaluated the reasons for non-compliance of the traffic rules.

Procedure

Three researchers together with nine trained nursing students stood at the three entrance gates to the university, the university teaching hospital gates and student hostel gates, for four time periods over the duration of one day. A total of 4,779 motorcycles (motorcyclists) were stopped. The time periods with the number of motorcyclists stopped were: 2,117 motorcyclists were stopped between 7:00 am to 10:30 am 1,624 motorcyclists between 12 pm to 3:00 pm 1,038 motorcyclists between 4 pm to 7.30 pm. These times were chosen because they were busy times fur students entering the campus, break and closing time for the university staff and

staff school, closing time for shifting medical staff and visiting hours for hospital patient's visitors in the hospital.

At each gate, a barrier is manned alongside with the security officers and police. During the observation periods, each motorcycle entering both the university gates and the teaching hospital gates were stopped by a researcher and three trained Nursing students (a team). Three teams were used; they asked the motorcyclists and the passengers' series of questions. Motor cars, buses and tricycles were excluded from the study. Both the motorcyclists and the passenger (s) were informed about the nature of the research project and their consents were taken and all their information was made confidential. The other instrument used for the study was a self-constructed validated questionnaire with reliability of 0.82. The motorcyclist and the passenger (s) were asked whether they were students, employees, commercial motorcyclists, patients and visitors to the university or the university teaching hospital. All the motorcyclists and the adult (18 years and above) passengers were given a questionnaire each. It was stated in the questionnaire where they should submit it. Either at the post office which is at the centre of the university, or at the motorcyclist park (Okada Park) where arrangements have been made for collection. Arrangements were also made at the gates of each student hostels and exit gates of both the university/hospital for visitors to return the questionnaires.

About 9,785 numbers of questionnaires were given to both motorcyclists (4,779) and passengers (5,006). Only 8,125 were collected back from both the motorcyclists (3,884) and the passengers (4,241) at the collating centres the same day, coded and subsequently analyzed using percentages and the non-parametric statistics of chi-square at the alpha level of 0.001. The number of motorcyclists and their passengers were recorded and separated into children between five and eighteen, Adult (eighteen and above).

For each motorcycle that entered into any of the gates, researchers observed where the motorcyclists carry his/her passenger and the number of passenger and also whether or not the motorcyclists and their passengers were wearing the safety helmet.

Results

A total of 4,779 motorcycles were stopped over the three time periods. 2,117 (44.3%) in the morning period, 1,624 (34%) in the afternoon period, and 1,038 (21.7%) in the evening period. 4,779 questionnaires were given to motorcyclists in the three periods. The total numbers of the questionnaires collected back from the motorcyclists were 3,884 out of which 3,024 were correctly filled. of these, 1,093 (36.14%) were within 31-40 years of age, 1,034 (34.19%) were within 18-30 years. 562 (18.59%) were within 41-50 years. Only a few 335 (11.08%) were advanced in age 51 years and above.

Table 1 Social-Demographic Variables of Motorcyclists (n=3,024) and the Passengers (n=3,633).

	Motorcyclists		Passengers	
Variables	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Age in year				
18-30	1034	34.19	991	21.28
31-40	1093	36.]4	2011	51
41-50	562	18.59	384	10.57
51 and above	335	11.08	187	5.15
Total	3024	100	3633	100
Marital status				
Never married	882	29.17	597	16.43
Married	2073	68.55	2961	81.5
Separated/divorced	40	132	43	1.19
Widowed	29	0.96	32	0.88
Total	3024	100	3633	100
Educational Qualification				
No formal education	48	1.59	31	0.85
Completed pry education	188	6.22	359	9.88
Completed secondary education	2008	66.4	2246	61.82
Completed tertiary education	780	25.79	997	27.45

Total	3024	100	3633	100
Associated Status				
University/teaching hospital employee	1124	37.17	1136	31.27
Students	267	8.83	1667	45.89
Outpatient	355	11.74		
Completely a commercial motorcyclists	1003	33.17	-	-
Visitors	273	9.09		
Total	3024	100		
Number or years in motorcycle business within				
1-3 years	1761	58.23	-	-
4-6 years	646	21.36	-	-
7-9 years	433	14.32	-	-
10 years and above	184	6.09	-	-
Total	3024	100	-	-
Gender				
Male	3020	9987	2653	73.03
Female	4	0.13	980	26.97
Total	3024	100	3633	100

Table 1, the marital profile of the motorcyclist revealed that majority 2,073 (68.55%) were married, 882 (29.17%) never married, 40 (1.32%) of them separated/divorced, while 29 (0.96%) were widowed.

Majority, 2,008 (66.40%) of the motorcyclists completed secondary education, 780 (25.79%) completed tertiary education, only 188 (1.590%) had no formal education. of the motorcyclists, 1,124 (37.17%) were driven by university/ teaching hospital employees, 1,003 (33.17%) by completely a commercial motorcyclists, 355 (11.74%) by outpatients attending the hospital, 275 (9.09%) by other types of visitors, and 267 (8.83%) driven by students. More than half of the motorcyclists 1,761 (58.23%) had been driven motorcycle for between 1-3 years, 646 (21.36%) 4-6 years, 433 (14.32%) for between 7-9 years while 184 (6.09%) had been driven motorcycle for 10 years and above. 3,020 (99.87%) were male while only 4 (0.13%) were female.

The majority of the motorcyclists 4,047 (84.68%) were wearing safety helmet. All the motorcyclists were 18 years and above. of the 4,779 motorcycles that were stopped, 241 (5%) of the motorcyclists carried passenger (s) on the tank. About 1188 (24.86%) motorcycles were with more than one passenger that is motorcyclist and 2 or more passengers, out of which 1,001 were without safety helmet. The only 4 female motorcyclists among them wore safety helmet.

A total of 5,006 questionnaires were given to passengers in the following categories. Two passengers at a time on a motorcycle were 2,358; three passengers at a time on a motorcycle were 15, while four passengers at a time on a motorcycle were 16. About 4,241 questionnaires were retrieved back from the passengers 3,874 were completely filled out of which 241 were filled by passengers below 18 years which were excluded from the data. The number of questionnaires that were completely filled by passengers that were 18 years and above was 3,633.

of these 3,633 passengers, more than half 2,071 (57%) were within 31-40 years of age, 991 (27.28%) were within 18-30 years, 384 (10.57%) were within 41-50 years while only 187 (5.15%) were 51 years and above. More than four-fifth 2,961 (81.50%) of the passengers were married, 597 (16.43%) were never married while 43 (1.19%), 32 (0.88%) were separated/ divorced and widowed respectively. 2,246 (61.82%) of the passengers completed secondary education, 997 (27.45%) completed tertiary education, while 359 (9.88%) had primary education, only 31 (0.85%) had no formal education. There were 2,653 (73.03%) males and 980 (26.97%) females. Out of the 3,633 passengers, 1,667 (45.89%) were students, 1,136 (31.27%) were civil servants, 508 (13.98%) were self-employed, 240 (6.60%) were housewives while only 82 (2.26%) were unemployed. Majority of motorcyclists 4,047 (84.68%)

were observed wearing safety helmet. While 732 (15.32%) were observed not wearing helmet.

Table 2 The Proportion of Motorcyclists (n=4779) and passengers (n=4313) Observed to wear or Failed to Wear Safety Helmets.

	Motorcyclists		Passengers	
Variables	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Observed wearing safety helmet	4047	84.68	1846	42.8
Observed not wearing helmet	732	15.32	2467	57.2
Total	4779	100%	4313	100

Table 2 showed that the number of motorcycle passengers observed not wearing safety helmet were 2,467 (57.20%) while 1,846 (42.80%) were observed wearing safety helmet. of the 4,779 motorcycles that were stopped, 241 (5%) of the motorcyclists carried passengers on the tank. Out of 974 motorcyclists who were alone on the motorcycle without passengers, only 652 (66.94%) wore safety helmet. **Table 3** showed that the proportion of motorcyclists who carried more than one passenger at a time was 1,188. About 1,179 (99.24%) were observed to carry 2 passengers at a time, only 43 (3.65%) of the 2 passengers on the motorcycle at a time wore safety helmet; while motorcyclists and one passenger wearing safety helmet were 685 (58.1%).

Table 3 The proportion of motorcyclist who carried more than one passenger at a time (n=1188).

Variables	Frequency	Percentage
2 passengers at a time	1,179	99.24
3 passengers at a time	5	0.42
4 passengers at a time	4	0.34
Total	1,188	100

There was consistency among the different types of occupants, although the number in each group were average overall, hospital and university employees performed best and, students non-compliance rate with the rules and regulations of motorcycle and road safety measure were high. Non-compliance among the visitors and the commercial motorcyclists were the worst. A total number of 9,785 questionnaires were given to both the motorcyclists (4,779) and the passengers (5,006) all together but the total number of completely filled questionnaires from both the motorcyclists (3,024) and the completely filled questionnaires from the passengers (3,633) that were 18 years and above were 6,657.

Table 4 Proportion of motorcyclists and passengers as per the number of passenger on a motorcycle at a time and the use of safety helmet.

Cyclist and passengers	Total number	Cyclist alone Wearing helmet	Cyclist and 1 Passenger wearing helmet	Cyclist and 2 passengers wearing helmet	Cyclist and 3 passengers wearing helmet	Cyclists and 4 passengers wearing helmets	Cyclist do not wearing both passengers wearing it	Cyclist and passenger (s) not wearing helmet
Cyclist alone	974	652	-	-	-	-	-	322
Cyclist with 1 passenger	2,617	1,466	844	-	-	-	183	124
Cyclist with 2 Passengers	1,179	350	685	43	-	-	21	80
Cyclist with 3	5	1	2	1	Nil	-	-	1

Passengers								
Cyclist with 4 Passengers	4	1	2	Nil	Nil	Nil	Nil	1

Table 4 showed that out of 974 motorcyclists who were alone on the motorcycle without passengers, only 652 (66.94%) wore safety helmet.Carrying more than one passenger was tested as a significant determinant of motorcycle accident by motorcyclists in Obafemi Awolowo University Ile-Ife. **Table 5** showed that 998 (33%) of the respondents strongly agreed 1,270 (42%) of the respondents agreed that overloading is a determinant of motorcycle accidents by motorcyclists in Obafemi Awolowo University Ile-Ife, while 394 (13%) of the respondents disagreed and 362 (12%) of the respondents strongly disagreed. [χ^2 (3)=456.5, P<0.001].

Table 5 Summary of chi-square showing the influence of carrying more than one passenger by motorcyclist as a determinant of motorcycle accident in Obafemi Awolowo University Ile-Ife.

Categories	Frequency	Percentage	df	χ^2	P
Strongly Agreed	998	33			
Agreed	1270	42	3	456.5	<0.001
Disagreed	394	13			
Strongly Disagreed	362	12			

The above hypothesis was rejected, therefore carrying more than one passenger by motorcyclists was perceived as a determinant of motorcycle accident. The other causes of motorcycle accidents involved unlicensed and untrained riders. In some parts of Nigeria, commercial motorcyclists (Okada riders) make their commercial debut after few hours' riders of training sessions. Underage motorcycle riders are not a rarity on Nigerian roads. The Drunk or drugged rides involves 2 or more passengers.

A Pearson's chi square test was also used to assess whether the non-use of safety helmet could be categorized as hazardous by motorcyclists in Obafemi Awolowo University Ile-Ife. **Table 6** revealed that 1,240 (41%) strongly agreed and 637 (21%) of the respondents agreed that non-use of safety helmet is perceived as hazardous by motorcyclists in Obafemi Awolowo University while 665 (22%) disagreed, and 482 (16%) of the respondents strongly disagreed [χ^2 (3)=438.85, P<0.001].

Many Nigerians have non-challant attitude towards the use of safety helmet at top speed and it is one of the safety rules to be complied by motorcycle users to reduce head injuries suffered from and their associated complications. The motorcyclists are prone to crash injuries than car occupants because motorcycles are unenclosed having riders vulnerable to contact with hard road surfaces [21]. This is why wearing helmet, as well as other protective clothing is also important. Helmet is the principal counter measure for reducing crash-related head injuries, the leading cause of death among un-helmeted riders. This also agreed with Oluwadiya [15] findings that identified the use of personal protective equipment to be practically nonexistence among the motorcycle riders.

Table 6 Summary of chi-square showing the perception of the motorcyclist on the hazards of non-use of safety helmet.

Categories	Frequency	Percentage	df	χ^2	P
Strongly Agreed	1240	41			
Agreed	637	21	3	438.85	<0.001
Disagreed	665	22			
Strongly Disagreed	482	16			

Pearson's chi-square test was also used to assess whether non-use of safety helmet will not be perceived as hazardous by motorcycle passengers in Obafemi Awolowo University Ile-Ife. **Table 7** showed that χ^2 of 2053.88 is greater than table value of 0.001 level significance. The table revealed that 55.19% strongly agreed and 26.40% of the respondents agreed that non-use of safety helmet is perceived as hazardous by motorcycles passengers in Obafemi Awolowo University, Ile-

Ife, while 9.99% disagreed and 8.42% of the respondents strongly disagreed [χ^2 (3)=2053.88, P<0.001].

Table 7 Summary of chi-square showing the perception of the motorcycle passengers on the hazards of non-use of safety helmet.

Categories	Frequency	Percentage	df	χ^2
Strongly Agreed	2005	55.19		
Agreed	959	26.4	3	2053.88
Disagreed	363	9.99		
Strongly Disagreed	306	8.42		

The multiple injuries often characterize motorcycle accidents. Head injury which is particularly common is a major cause of mortality hence the enforcement of the law compelling all riders to wear helmets in most countries. He further found that infants, children and other age groups not usually associated with motorcycle accidents have become involved in the risk. Michael [22] reported that wearing of helmet lower a motorcycle rider's risk of fatal injury by 29% and reduces the risks of traumatic brain injury by 67%.

Discussion

This study showed that most motorcyclist travelling to the university campus and university teaching hospital on that day were not obeying traffic regulations. However, back passengers on motorcycles were not as compliant as riders. This is surprising given that police staff: security officers and the federal road safety corps staff checks on the highway often result in fines.

It was argued by some that the problem of road safety is largely being started in the wrong terms because most road safety measures are designed to increase the safety of the drivers/riders, and those measures which increase riders' safety may perversely increase the risk to these others; through risk compensation. The vulnerable road users are marginalized by the 'road safety' establishment, that most road safety interventions are often centered on reducing the severity of results from dangerous behaviours rather than reducing the dangerous behaviours themselves. However, legislation is only part of the answer, since compulsory safety helmet usage was introduced in Nigeria for both the motorcyclists and his/her passengers, and also the number of passenger that a motorcycle can carry. Out of the whole 4,779 motorcycles that were stopped, only 652 (13.64%) motorcyclists (riders alone) abided with safety helmet usage rules while 1,496 (31.30%) abided with the rules of rider alone, or rider with only one passenger at the back seat with safety helmet usage by both the rider and the passenger. Most of them did not wear safety helmet in the evening section. This was supported by Siviroj [23] that the relatively high prevalence of riding un-helmeted later in the day or at night among motorcyclists is perhaps attributable to insufficient law enforcement at night.

Perhaps more worrying is the fact that so many under six sat either on the tank where they could be interfering with riding or on the rear seat where their legs did not reach foot rest. It was deduced that there is a perception among the population that is cruel to keep a child alone on the rear seat and there is likelihood that they did not know about the danger involved in doing so. Various methods were suggested by the motorcyclists and their passengers on things that can make the motorcyclist and whoever they carry to obey traffic rules and regulation and that these will minimize road traffic accidents and injuries sustained if accidents eventually happen. The motorcyclists should get clearance to ply campus road after a proper screening and training before they are allowed to enter into the university campus where the rules and regulations bidding on motorcycles will be taught. Increase in the number of road safety marshals and student's voluntary organization concerning road safety was also suggested. Heavy fines, impoundment and seizure of motorbikes and the licenses of offenders were also mentioned by few.

Most of the motorcyclists believed that they are experienced and that they cannot be involved in accidents, this may reduce their extent of carefulness and thus could lead to road traffic accident and they are not using helmet which make them vulnerable to head injury.

On the issue of why motorcyclists usually carry more than one passengers. Majority of the respondents claimed the following:

1. It is economical and time saving.
2. It is as a result of poverty level of the people since majority of the staff who owns motorcycle carry their wife to her place of work together with their children to school on the same motorcycle at the same time.
3. That the commercial motorcyclist indulged in it for quick discharge of passengers whenever passengers are many at the park more than the number of available motorcycles.
4. Whenever male and female students (boyfriend and girlfriend) do not want to separate and both of them are passengers.
5. For commercial motorcyclists to be able to make more money with few trips.

6. More than one passenger is carried when a person is sick (that is during emergencies) and the patient/client cannot sit alone on the motorcycle.

About the reasons people do not comply with motorcycle/ traffic laws. It was deduced among other things that:

1. In most cases, there is no penalty for offenders whenever these rules were broken especially if the offence is mild.
2. That policemen and FRSC were after money rather than maintaining law and order on the roads.
3. Ignorance on the part of the motorcyclists and their passengers since majority of them has not read the traffic codes and regulations at all in their life.
4. Some of the respondents (about 7%) claimed that they were protecting themselves with charms (juju) which have been either preventing them from involving in accident or protecting them from being injured if accident occurs.

On how to avoid crashing by motorcyclists, the respondents claimed that motorcyclists can do much to anticipate and avoid these crashes by getting proper training by increasing them conspicuity to other traffic, and by separating alcohol and riding by not carrying more than one passenger and that since a motorcycle is a single track, two wheeled motor vehicle powered by an engine with a far highest rate of crippling and fatal accidents per unit distance, so carrying more than one passengers by a motorcyclist may affect:

1. The fork (a motorcycle fork is the portion of a motorcycle that holds the front wheel and allows the rider to steer). For handling the front, fork is the critical part of a motorcycle, because it combines the rate and trail which determine how stable the motorcycle is.
2. Carrying more than one passenger normally affects the efficiency of brake drum; it can also affect the access of the motorcyclist to the application of brakes.
3. Motorcyclist should prefer motorcycle with disc brakes rather than drum brakes. Disc brakes being more modern for their superior stopping power particularly in wet conditions and they are still effective even when more passengers and heavy loads are carried.

Despite various designs and requirements of making the use of safety helmet a compulsory head gear for motorcycle riders in Osun state of Nigeria in an attempt to protect the user's head from high-speed collision.

Majority of them do not like using safety helmet because they believed that:

1. Helmet can spread skin diseases.
2. The higher volume of the helmet and weight increases the injury risk for the user's head and neck if there is accident.
3. Helmet is a burden because of its weight and volume which needs extra energy to carry.
4. It is a waste of money to buy safety helmet because it has no function.
5. Helmets are used by the ritualists to catch their victims while using them.
6. It is a waste of money to buy helmet because some of them are fake and lack protective power.

Implication for community health nursing practice (practical application)

Automobile accident has always been a problem to be tackled not only by the law enforcement officers (Police and Federal Road Safety Corps) alone but also by nurses and other health professionals, considering its impact on the health of the society [24,25]. Generally, two approaches to injury prevention are recognized: Primary prevention aims to reduce the incidence of injuries by enforcement of legislative policies that prevent collisions from occurring [26]. The aim of secondary prevention is to limit injury severity once a collision has occurred [26]. Therefore, special consideration must be given to preventative strategies for motorcycle collisions since their poly-traumatized victims place inordinately high demands on the health care resources in this setting [26].

Also there is need for the public health nurse to educate, counsel and re-orientate the motorcyclists and other road users on their mutual responsibilities such as exercising care, a discipline cyclist, by not carrying more than one passenger, that sits in the normal way and at the appropriate position, obeying road safety rules on the use of safety helmet by both the motorcyclists and their passengers. These could be done by organizing university motorcycle parks rallies, seminars and workshops for the university staff, students, professional and commercial motorcyclists through Amalgamated commercial motorcycle owners and riders association of Nigeria (ACOMORAN) in addiction to media (Radio and television) jingles for the university visitors and general populace so as to have a wide coverage. Hence, education of motorcyclists and road users would lead to the evaluation of a better road culture in Nigeria.

Conclusion

This study revealed that carrying more than one passenger (overloading) is a determinant of motorcycle accidents by motorcyclists, also, non-use of safety helmet was perceived as hazardous by motorcycle passengers and motorcyclists.

The act of not complying with the rules and regulations concerning the use of safety helmet and that people should not be more than two on a motorcycle (the rider and a passenger) are some of the causative factors associated with motorcycle accidents on our roads and the complications associated with the injuries sustained, this has led to some difficulties in assessing accurately the effectiveness of any particular preventive measure directed specifically against anyone of them.

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