

Perception and Practice of Helmet Use among Motorcycle Riders in a Semi-Urban Community in Southwestern Nigeria

O.A Olakulehin¹, A.A Adeomi², O.Oakanbi¹, C.J Itie¹,
O.O Olanipekun¹, O.Silori¹.

¹ Department Of Surgery Lautech Teaching Hospital Ogbomosho, Oyo State.

² Department Of Community Medicine Lautech Teaching Hospital, Ogbomosho, Oyo State.

Abstract: In middle and low-income countries, motorcycles form a common means of transport. Motorcyclists form a significant proportion of people who are affected by road traffic accidents. Regarding risk factors for motorcycle injuries, the non-use of helmet has been identified as a specific factor leading to head injuries and fatalities resulting from motorcycle crashes. Negative attitudes towards helmet use among other factors explain the reason behind the reported low rate of use. World Health Organization recommended exploring local attitudes and beliefs about helmet use as a primary step in designing effective programs for increased helmet use among riders. This study was set out to help in understanding various perceptions that motorcyclists in a sub urban area of Southwestern Nigeria have about the use of helmets and their practices. Survey questionnaires which contain questions regarding demographics, perception and practice of helmet use were used to gather information from randomly selected motorcyclists. Although most participants (88.9%) agreed that helmet is truly protective but more than three quarter don't have helmet on their motorcycle and more than half have never used helmet before, however more than half of them have been educated on helmet use at one time or the other. Further study is recommended to identify measures that can be put into place to approximate the wide gap between the knowledge and perception of helmet use and the actual practice of it among the motorcyclists.

Keywords: Motorcyclists, helmet, perception, practice, prevention.

I. Introduction

In middle and low-income countries, motorcycles form a common means of transport (1). Motorcyclists form a significant proportion of people who are affected by road traffic crashes. The reason behind the reported increase in number of commercial motorcycles is the fact that motorcycles are sold at relatively cheaper prices than other vehicles and good earnings from the motorcycle taxi business encourages more people especially youths to join this business (2).

Regarding risk factors for motorcycle injuries, the non-use of helmet has been identified as a specific factor leading to head injuries and fatalities resulting from motorcycle crashes. Injuries to the head, following motorcycle crashes, are a common cause of severe morbidity and mortality (3) (4).

Helmet as a protective measure has been identified to be effective towards head injury prevention (1) and reduces the fatality of motorcycle riders. (5) The fatality risk is reduced by 34%⁶.

To be protected from head injury, motorcyclists need to consistently and properly wear helmets according to the prescribed standards. However, non-consistent use of helmet has been evident in several studies. It has been shown that motorcyclists are likely to put on helmets when they are driving on the highways (7) (8) (9) travelling on a long trip (10) and if they anticipate meeting a traffic police (7) (11) during the day rather than night hours and during weekdays rather than weekends (12)

Arguments against helmets for motorcycle riders include the possibility that they increase the risk of neck injuries in crashes (13) and could decrease rider visibility.

Negative attitudes towards helmet use (12) among other factors; explain the reason behind the reported low rate of use (14) (15). Some reasons for non-adherence and non-use of helmet include feelings of discomfort due to heat during the hot weather, and lateral vision and hearing ability impairment (12). However it has been shown that helmets do not impair hearing ability and the lateral vision can be complemented by lateral head rotation¹⁶.

In its 2006 publication, the World Health Organization recommended exploring local attitudes and beliefs about helmet use as a primary step in designing effective programs for increased helmet use among riders (1)

This study was set out to help in understanding various perceptions that motorcyclists in a sub urban area of Southwestern Nigeria have about the use of safety helmets and their practice of it in order to ensure appropriate behavioural change and curb the increasing number of fatalities due to motorcycle crashes.

II. Methodology

The study involved motorcyclists in Ogbomoso, a semi urban area of south western Nigeria whose representative sample was obtained from randomly selected motorcyclists

There were 199 questionnaires filled and returned. The survey questionnaire was used to gather information on perception and practices. The survey questionnaire had questions regarding demographics, perception and practice of helmet use. Positive and negative worded statements were developed for measuring perception of commercial motorcyclists on helmet use.

All statistical analyses were done using SPSS version 16.0. Results were presented in tables.

III. Results

Table 1: Socio-demographic Characteristics of Respondents

| Variable | Frequency | Percentage |
|------------------------------|-----------|------------|
| Age groups (in years) | | |
| < 20 | 10 | 5.0 |
| 20-29 | 93 | 46.7 |
| 30-39 | 53 | 26.6 |
| 40-49 | 31 | 15.6 |
| ≥ 50 | 12 | 6.0 |
| Sex | | |
| Male | 197 | 99.0 |
| Female | 2 | 1.0 |
| Education | | |
| None | 10 | 5.0 |
| Primary | 26 | 13.1 |
| Secondary | 78 | 39.2 |
| Tertiary | 85 | 42.7 |
| Marital status | | |
| Married | 129 | 64.8 |
| Single | 63 | 31.7 |
| Divorced | 4 | 2.0 |
| Widowed | 3 | 1.5 |
| Ethnic group | | |
| Yoruba | 150 | 75.4 |
| Igbo | 27 | 13.6 |
| Hausa | 14 | 7.0 |
| Others | 8 | 4.0 |

Table I shows the sociodemographic characteristics of the respondents. Almost half of the respondents (46.7%) are within 20-29 years age bracket, the remaining are distributed over the other age groups. Most of them (99%) are males. Almost half (42.7%) of the respondents have tertiary education. More than half (64.8%) are married. Three-quarters (75.4%) of them are of Yoruba ethnic group.

Table 2: Perception of Motorcyclists about the Use of Helmets

| Variables | Yes (%) | No (%) | Not sure (%) |
|---|------------|------------|--------------|
| Helmets protect against serious head injury | 166 (83.4) | 13 (6.5) | 20 (10.1) |
| Helmets prevent harassment from law enforcement agents | 197 (99.0) | 2 (1.0) | 0 (0.0) |
| Aware of prescribed type of helmets | 127 (63.8) | 43 (21.6) | 29 (14.6) |
| Helmets are truly protective | 177 (88.9) | 4 (2.0) | 18 (9.0) |
| Helmets are needed only on the highways | 70 (35.2) | 99 (49.7) | 30 (15.1) |
| Wearing helmets obstruct the rider's view | 11 (5.5) | 170 (85.4) | 18 (9.0) |
| Helmets generate a lot of heat on the head | 84 (42.2) | 98 (49.2) | 17 (8.5) |
| Wearing helmets impairs hearing | 15 (7.5) | 167 (83.9) | 17 (8.5) |
| Wearing helmets is uncomfortable | 105 (52.8) | 82 (41.2) | 12 (6.0) |
| Not wearing helmets is against the law | 193 (97.0) | 2 (1.0) | 4 (2.0) |
| Law enforcement agents are strict about helmet wearing | 197 (99.0) | 2 (1.0) | 0 (0.0) |
| I rush to wear my helmet on sighting law enforcement agents | 104 (52.3) | 80 (40.2) | 15 (7.5) |
| Failure to wear helmets should attract serious penalty | 185 (93.0) | 4 (2.0) | 1 (5.0) |

Table 2 shows the perception of Motorcyclists about the Use of Helmets. More than three quarter (83.4%) agree helmet protect against severe head injury and 88.9% agree helmet is truly protective. Almost all of the respondents (99%, 97% and 99% respectively.) agree Helmets prevent harassment from law enforcement agents, not wearing helmets is against the law, law enforcement agents are strict about helmet wearing. More than half of the respondents (63.8%) are aware of prescribed helmet. More than half agree wearing helmet is uncomfortable. More than three quarter of the respondents (85.4%, 83.9%) disagree that helmet obstruct riders view and impair hearing. Almost half (49.7%) disagree that helmets are only needed on the highway.

Table 3: The Helmet-related Practices of the Respondents

| Variables | Frequency | Percentage |
|--|-----------|------------|
| My motorcycle is equipped with a helmet | | |
| Yes | 41 | 20.6 |
| No | 158 | 79.4 |
| Regularity of helmet use | | |
| Always | 43 | 21.6 |
| Sometimes | 28 | 14.1 |
| Occasionally | 11 | 5.5 |
| Never | 117 | 58.8 |
| I ask my passengers to wear helmets | | |
| Yes | 25 | 12.6 |
| No | 174 | 87.4 |
| I have received education on helmet use | | |
| Yes | 116 | 58.3 |
| No | 83 | 41.8 |

Table 3 shows the helmet-related practices of the respondents. More than three quarter (79.4%) of the respondents have their motorcycle equipped with helmet. More than half (58.8%) has never used helmet. More than three quarter do not ask their passenger to use helmet. More than half (58.3%) have received education on helmet use.

IV. Discussion

It is universally accepted that vehicle crashes cannot be totally prevented, but that the resultant injuries and severity can be prevented or minimized by protective devices like the safety helmets properly used for motorcyclists¹⁷. This study was therefore undertaken to investigate the perception and the actual practice of helmet use among motorcyclists in Ogbomoso- asemi urban area of south western Nigeria.

The male preponderance found in this study is consistent with findings in other studies (18) (19)

This may be due to the fact that it is a common observed phenomenon and customary to see more male than female gender motorcycling in African cultural context. Furthermore, since motorcycling is a high risk venture, males tend to engage more in risky ventures than their females counterparts do.

Majority of the motorcyclists were between the ages 20 to 49 years with a cluster in the 20 to 29 year group. This shows that many motorcyclists are young, in productive age groups. More than three quarter of them have at least a secondary education. This observation is not in keeping with a previous study done by Iribhogbe et al whereby it was found that most of commercial motorcyclists (52.8%) had primary education or no formal education (20) Possible reason for this might be because this study involved all motorcyclists irrespective of whether they are commercial or not.

More than three quarter agreed that wearing helmet protects against head injury in case of accident. This finding is somewhat similar to a previous study done by Oluwadiya et al whereby it was found that majority of participants acknowledged the benefits of helmet (15).

More than half of respondents agree that wearing of helmet is not comfortable. In previous studies for riders who reported not to wear helmet, the most frequently mentioned reason behind the practice were helmets are not of good quality and are not comfortable.(21) and this may be partly expounded by the lack of focus on the matter by the quality regulatory bodies. The mentioned reason that helmet is not comfortable corresponds to the finding of another study done in Iran whereby one of the reasons given for poor compliance to helmet wearing was that helmets were designed to be used in temperate countries and were uncomfortable to use in hot weathers (22).

Most participants (88.9%) agreed that helmet is truly protective but more than three quarter don't have helmet on their motorcycle and more than half have never used helmet before, however more than half of them have been educated on helmet use at one time or the other. This shows a wide gap between their knowledge and perception of helmet use and their actual practice

Almost half disagreed that helmets are only needed on the high way especially for long trips This is in conformity with the finding of Hung et al in Vietnam whereby having a positive attitude towards wearing helmet when travelling for a short trip were associated with increased helmet use (23).

Almost all the respondents agreed that law enforcement agents are strict about helmet use and more than half rush to wear their helmets on sighting the law enforcement agents.

Despite the awareness of the benefits of helmet wearing among motorcyclists, the most frequently mentioned reasons for wearing helmet were when anticipating meeting a policeman and when riding for a short trip. This finding concurs with a somewhat similar finding of a study done in China whereby it was found that

despite that the majority of motorcyclists acknowledged the benefits of helmet, only 20% of them said they would wear it for preventive purposes (24). This finding explains the low risk perception among commercial motorcyclists. This low risk perception leads to unsafe driving practices which further results into fatal injuries. Furthermore, it seems that commercial motorcyclists are under intense pressures to make profit and may take unnecessary risks to do so. Also it has been shown that people sometimes behave differently when they see themselves as members of a group, thus drivers may make risky decisions because the perceived “social norms” legitimizes care free behavior(25).

Almost all the respondents agreed that serious penalties should be imposed on motorcyclists riding without helmets. In a study by Turkson et al in Ghana., one motorcycle rider from one of the municipality in the Northern sector said a spot fine of \$105 was taken from him for not wearing a helmet as stipulated by the byelaws. It is interesting to note that the spot fine exceeds the cost of a brand new helmet (26). Results showed that only very few riders (12.6%) ask their passengers to wear helmet.

Related reports show that passengers are uncomfortable with helmet use for reasons ranging from “fear of the helmets being laced with magic spells that could knock the wearer unconscious and expose them to robbery to fear of picking up infections such as scabies, ringworm, dandruff (22) Use of makeshift helmets such as fruit shells, dried pumpkin shells, calabash, paint pots and pans or pieces of rubber tyres and plates is common in Nigeria (27) (28). Therefore, to allay the fears of Passengers on helmet use, there might be the need to develop measures that require riders to clean up helmets with sanitizer before handing it over to the next passenger. This is similar to what obtains in barbing salons where barbers clean and sterilize their tool in the presence of the customer. Furthermore, disposable sanitized handkerchiefs may be designed, produced and marketed as a safety measure for motorcycle passengers.

V. Conclusion And Recommendation

Most motorcyclists in the study generally have good perception of helmet use. They have more of positive attitude towards protective ability of helmet against head injuries.

Although most participants (88.9%) agreed that helmet is truly protective but more than three quarter don't have helmet on their motorcycle and more than half have never used helmet before, however more than half of them have been educated on helmet use at one time or the other. Almost all the respondents agreed that not wearing helmet is against the law and that law enforcement agents are strict about helmet use but it was observed that more than half rush to wear their helmets on sighting the law enforcement agents.

This shows a wide gap between their knowledge and perception of helmet use and their actual practice. From this study it appears education on the consistent use of recommended safety helmets and law enforcement alone may not be sufficient to fill the gap between their perceptions and actual practice.

Further study is recommended to identify the other measures that can be put into place in ensuring appropriate behavioral change.

Conflicts of Interest: "The authors declare no conflict of interest concerning this article. The authors are solely responsible for financing the research work"

References

- [1]. World Health Organization . Helmets: A Road Safety Manual for Decision-makers and Practitioners. WHO, Geneva, Switzerland. 2006.
- [2]. Solagberu B, Ofoegbu C, Nasir A, Ogundipe O, Adekanye A, Abdur-Rahman L. Motorcycle injuries in developing country and the vulnerability of riders, passengers, and pedestrians. *Injury Prevention*, 12, 266 -268.2006.
- [3]. Bachulis BL, Sangster W, Gorrell GW, Long WB. Patterns of injury in helmeted and no helmeted motorcyclists. *American Journal of Surgery* 1988; 155:708–11.
- [4]. Sosin DM, Sacks JJ, Holmgren P. Head injury-associated deaths from motorcycle crashes. *JAMA* 1990;264:2395–9.
- [5]. Keng S. Helmet use and motorcycle fatalities in Taiwan. *Accident Analysis and Prevention*, 31, 349-55.2005.
- [6]. Dee T. Motorcycle helmets and traffic safety. *Journal of Health Economics*, (2): 398-412. 2009.
- [7]. Kulanthayan S, Radin U, Ahmad H, Mohd N, Harwant S. Compliance of proper helmet use in motorcyclists. *Medical Journal of Malaysia*, 55(2): 40–44. 2000.
- [8]. Skalkidou A, Petridou E, Papadopoulus F, Dessypris N, Trichopoulos D. Factors affecting motorcycle helmet use in the population of Greater Athens, Greece. *Injury Prevention*, 5 (4): 264-267.1999.
- [9]. Hung D, Stevenson M, Ivers R. Prevalence of motorcycle helmet use among motorcyclists in Vietnam. *Injury Prevention*, 12, 409-413. 2006.
- [10]. Hung D, Stevenson M, Ivers R. Barriers to, and factors associated, with observed motorcycle helmet use in Vietnam. *Accident Analysis and Prevention*, 40, 1627 – 1633. 2008.
- [11]. Corad P, Bradshaw Y, Lamsudin R, Kasniyah N, Costello C. Helmets, injuries and cultural definitions: motorcycle injuries in urban Indonesia. *Accident Analysis and Prevention*, 28 (2): 193-200. 1996.
- [12]. Dandona R, Anil G, Dandona L. Risky behavior of drivers of motorized two wheeled vehicles in India .*Journal of Safety Research*, 37(2): 149-158.2005.
- [13]. Krantz KP. Head and neck injuries to motorcycle and moped riders with special regard to the effect of protective helmets. *Injury* 1985; 16:253–8.

- [14]. Odelowo E. Pattern of trauma resulting from motorcycle accidents in Nigeria: a two year prospective study. *African Journal of Medical Science*, 23, 109-112.1994
- [15]. Oluwadiya K., Oginni I, Olasinde A. Motorcycle limb injuries in a developing country. *West African Journal of Medicine*, 23, 42-6 . 2004.
- [16]. National Highway Traffic Safety Administration (NHTSA). Do motorcycle helmets affect riders' vision and hearing? *Annals of Emergency Medicine*, 29,282-283. 1997.
- [17]. Kulanthayan, S.,Umar R., Ahmad H., Mohd, N. (2000). Modelling of compliance behaviour of motorcyclists to proper use of safety helmets in Malaysia. *Journal of Crash Prevention and Injury Control*, 2 (3): 239–246
- [18]. Adogu P, Ilika A, Asuzu A. Predictors of road traffic accident, road traffic injury and death among commercial motorcyclists in an urban area of Nigeria. *Niger Journal of Medicine*, 18(4): 393-7.2009.
- [19]. Alti-Muazu M, Aliyu A. Prevalence of psychoactive substance use among commercial motorcyclists and its health and social consequences in Zaria, Nigeria. *Annals of African Medicine*, 7(2): 67-71.2008.
- [20]. Iribhogbe P, Odai E. Driver-related risk factors in commercial motorcycle (okada) crashes in Benin City, Nigeria. *Pre-hospital Disaster Medicine*, 24(4):356-9.2009.
- [21]. Peek-Asa C, McArthur D, Kraus F. The prevalence of non-standard helmet use and head injuries among motorcycle riders. *Accident Analysis and Prevention*, 31 (1999): 229–233. 1999.
- [22]. Zargar M, Khaji A, Karbakhsh M. Pattern of motorcycle-related injuries in Tehran, 1999 to 2000: a study in 6 hospitals. *Eastern Mediterranean Health Journal*, 12, 81–87.
- [23]. Hung D, Stevenson M, Ivers R. Barriers to, and factors associated, with observed motorcycle helmet use in Vietnam. *Accident Analysis and Prevention*, 40, 1627 – 1633. 2008.
- [24]. Li L, Li G, Cai Q, Zhang A, Lo S. Improper motorcycle helmet use in provincial areas of a developing country. *Accident Analysis and Prevention*, 40, 1937-1942.2008.
- [25]. Broughton J. Car Occupant and Motorcyclist Deaths, 1994–2002 Prepared for Road Safety Division. Department for Transport. Transport Research Laboratory, London.2005.
- [26]. Turkson R F, Akple M S, Biscoff R, Dzokoto S T K, Klomegh W. Helmet usage among motorcycle riders in Ghana. (*IJSETR*) 2(3), 2013.
- [27]. Oboh M. 2009. Nigerian bikers wear fruit shells to avoid helmet law. <http://www.reuters.com/article/2009/01/07/us-nigeria-bikers-idUSTRE5063FR20090107>
- [28]. BBC News. Nigerian Motorcyclists Dodge Helmet Laws By Wearing Vegetables. *BBC NEWS*, January 6, 2009 . http://www.huffingtonpost.com/2009/01/06/nigerian-motorcyclists-do_n_155756.html .