

Original Article / Orijinal Araştırma**Morbidity and Mortality Pattern Among Commercial Motorcyclists In Osogbo Metropolis In South Western Nigeria**

Güney Batı Nijerya'da Osobongo şehrinde ticari motosikletlerin karıştığı trafik kazalarının mortalite ve morbidite paternleri

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Giriş ve Amaç: Dünyanın bu bölgesinde kişi, hizmet veren ve çevrenin etkileşiminin ölümcül sonuçları olduğu motosiklet kazaları sık görülür. Bu çalışmanın amacı Güney Batı Nijeryada Osobongo şehrinde ticari motosikletlerin karıştığı trafik kazalarının mortalite ve morbidite paternlerini değerlendirmektir.

Materyal ve Metot: Bu Güney Batı Nijeryada Osobongo'da Ladoke Akintola Üniversitesi Teknoloji ve Eğitim Hastanesinde tedavi gören ticari motosiklet sürücülerinin morbidite ve mortalite paternlerini belirleyen retrospektif ve analitik bir çalışmadır. Mayıs 2002 ve Nisan 2005 tarihleri arasında yolda trafik kazası geçiren 111 ticari motosiklet sürücüsünün morbidite ve mortalite ile ilgili kayıtları gözden geçirildi. Bu veriler EPI Info yazılımı ile analiz edildi.

Bulgular: Ticari motosiklet sürücülerinin yaş ortalaması 33,3 (± 1.4) yıldır ve tümü erkekti. Elialtı (50.4%) evliydi, 48'i (43.2%) ortaokuldan düşük eğitime sahipti ve 42'si (37.8%) kesinlikle profesyonel motosikletçiydi. Toplamda 12 kişi kaza sırasında ölmüştü, 99'u (89.2%) ise yaşamaktaydı. Yaşayanlardan 32'si (32.4%) sakatlanmıştı, 67'si ise (67.6%) sakatlanmamıştı. Kurbanların uğradığı yaralanma paternleri 63'ünde (56.8%) bacak kırığı, 48'inde (43.2%) kafa travması, 48'inde (43.2%) berelenme, 36'inde (32.4) bilinç kaybı, 5'inde (4.5%) kalça çıkığı ve 3'ünde (2.7%) spinal kord zedelenmesi şeklindeydi.

Sonuçlar: Motosiklet yol kazaları ile ilişkili morbidite ve mortalite sıklığı. Bu grupta morbidite ve mortaliteyi veya kazaların oluşumunun önlenmesi veya azaltılması için tüm paydaşların yeterli adımları atmasına ihtiyaç vardır.

Anahtar Kelimeler: Trafik kazaları ve yaralanmalar, ticari motosikletçi, güvenlik uygulamaları.

ABSTRACT

Introduction: Motorcycle accidents occur frequently in this part of the world as a result of interface between the agent, the host and its environment resulting in fatal consequences. The objective of this study is to assess mortality and morbidity pattern accrued to road traffic accidents from commercial motorcycles in Osogbo metropolis in south western Nigeria.

Methods: This is a retrospective, analytical study of morbidity and mortality pattern among commercial motorcycle riders managed at Ladoke Akintola University of Technology Teaching Hospital in Osogbo in southwestern Nigeria. Case notes of one hundred and eleven commercial motorcyclists who had road traffic accident between May 2002 and April 2005 were reviewed for mortality and morbidity related data. These secondary data was analyzed using the EPI Info software.

Results: Mean age of the commercial motorcyclists was 33.3(± 1.4) years and all were males. Fifty-six (50.4%) were married, 48(43.2%) had below secondary level education while 42(37.8%) were strictly commercial and professional motorcyclists. A total of 12 (10.8%) of victims eventually died while 99 (89.2%) remained alive. Among survivors, 32 (32.4%) were deformed while 67 (67.6%) were not. Pattern of injuries sustained by victims include limb fracture 63(56.8%); head injury 48 (43.2%), bruises 48 (43.2%), loss of consciousness 36(32.4), limb dislocations in 5(4.5%) while 3(2.7%) sustained spinal cord injuries.

Conclusions: Morbidities and mortalities associated with motorcycle road traffic accidents are common. There is a need for all concerned stakeholders to take adequate steps towards reduction and prevention of occurrences or mortality and morbidity among this group.

Key word: Road traffic accidents and injuries, commercial motorcyclist, safety practices.

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Introduction

Road traffic injuries (RTI) are a major cause of misery, disability and death globally, with a disproportionate number occurring in developing countries(1,2). Nigeria is a country with a serious and growing road crash problem which is among the worst in the world(3). Deaths from RTI outnumber those recorded from many diseases of public health importance such as pneumonia, meningitis, tuberculosis and tetanus(4). The WHO has estimated many more childhood deaths from road crashes than from HIV infectio(5), although the prominence of communicable diseases in West Africa masks this relative epidemiologic significance of RTI(6).

Nigeria has witnessed at least a fivefold rise in recorded traffic-related fatalities within the last three decades(4). This in part is due to the proliferation of roads which are often in poor deplorable states, a phenomenal increase in the number of motor vehicles many of which are old and not road-worthy and inadequate safety practices among riders(4). The increasing use of motorcycles particularly for commercial commuter service is a source of concern in this regard(3,4,5,7,8) because motorcycles cause many more fatal road crashes than other vehicles worldwide(9). While safety factor around a car is the structure around the driver and passengers, the safety on a motorcycle is enhanced by doing everything to avoid accidents.

One cannot feign ignorance to the increase in the use of motorcycle as a means of transport in Nigeria. The motorcycle as a commercial means of transport became very popular nationwide as an intra city means of commercial transport from the late 1980s due to economic downturn. In Nigeria today almost all income groups except the very elite are commuted from one spot to the other within cities and semi urban areas by the motorbike. It has gradually grown to become the most popular means of intra city transportation nationwide(10).

In view of the poor resources and the unorganized transportation system in the country, commercial motorcyclists will continue to be relevant for some time to come(11), and will constitutes a major cause of morbidity and mortality among Nigerians, which most of the time should be preventable(12,13). In Ibadan, the proportion of road traffic injuries due to commercial motorcycles rose

from 7.8% to 20.6% between 1985 and 1995. Similar trend was found in Enugu, where road traffic injuries from commercial motorcycles rose by over 100% between 1985 and 1995(14).

In Benin City, 26.5% of maxillofacial injuries were involved in motorcycle related crashes and passengers sustained more injuries than vehicle users(14). On the average, approximately 2,000 motorcyclists are killed and greater than 50,000 injured in traffic crashes each year(15), with most common cause of death, being intracranial hemorrhage from head injury(15).

The scarcity of existing data on motor bike injuries in this environment despite morbidity and mortality resulting from motorcycle accidents necessitate a further look into the causative factors influencing the occurrence of such accidents. Studying the morbidity and mortality pattern of these motorcyclists will reveal the burden of the problem, as deaths and injuries due to road traffic accidents have not really been seen as a matter of public health importance. The objective of this study is to assess mortality and morbidity pattern accrued to road traffic accidents from commercial motorcycles in Osogbo metropolis in South western Nigeria within the study period.

Methods

This is a retrospective, analytical study of morbidity and mortality pattern among commercial motorcycle riders managed at Ladoke Akintola University of Technology Teaching Hospital, located in Osogbo, the capital of Osun State in south western part of Nigeria. Osogbo has 9 motorcycle parks, spread among the three local government that make up the state capital. Many times, motorcyclists travel from within the metropolis and to other places such as neighboring towns, cities and even states.

The study populations were all commercial motorcyclists who had road traffic accident and presented in this health facility between May 2002 and April 2005, totaling 111. Case notes of such accidents victims were reviewed and secondary data such as their socio-demographic characteristics, probable causes of accidents, and outcome of injuries were obtained using a standard checklist. Ethical issues were settled with the hospital authority and ethical review committee of the teaching hospital.

Data obtained were analyzed using the EPI Info software, and frequency tables generated. Associations between categorical variables were computed at a significant P level less than 0.05.

Results

A total of one hundred and eleven case notes were reviewed within the period. Table I shows the socio-demographic characteristics of the motorcyclists. Sixty seven (60.3%) of respondents are in the age range 15-34 years. Mean age of respondents was 33.3(\pm 1.4) years, all victims were males, 56 (50.4%) were married, 55(49.6%) were single, 48(43.2%) had below secondary level education while 42(37.8%) were strictly commercial and professional motorcyclists.

TABLE I: Socio-demographic characteristics of the commercial motorcyclists accidents

Variables	Characteristics	Frequency	%
Age	<15 years	2	1.8
	15-24 years	31	27.9
	25-34 years	36	32.4
	35-44 years	20	18.0
	45-54 years	9	8.1
	55 years and above	13	11.7
Marital Status	Married	56	50.4
	Single	55	49.6
Religion	Christianity	48	43.2
	Islam	61	54.9
	Traditional	2	1.8
Education-al level	None	18	16.2
	Primary	30	27.0
	Secondary	39	35.1
	Tertiary	24	21.6
Occupation	Respondent was strictly commercial motorcyclist	42	37.8
Other occupations (apart from commercial motorcycling)	Policeman	3	2.7
	Herbalist	1	0.9
	Farming	12	10.8
	Commercial car driving	27	24.3
	Student	25	22.5
	Trading	13	11.7
	Teaching	3	2.7
	Artisan	27	24.3

Table II shows that 63(56.8%) of the road traffic accident victims sustained limb fracture; head injury 48 (43.2%), 48 (43.2%) presented with bruises, 36(32.4%) presented with loss of consciousness while 5(4.5%) and 3(2.7%) presented with limb dislocation and spinal cord injury respectively. The table also showed outcome of the RTI among studied victims of road traffic injuries. This reflects a mortality of 12 (10.8%), while 99 (89.2%) people remained alive. Of

those victims who remained alive, 32 (32.4%) were deformed, while 67 (67.6%) were not deformed.

Table II: Nature and outcomes of injuries sustained by motorcyclists accident victims.

Variables	Characteristics	Frequency	%
Nature of Injuries	Limb fracture	63	56.8
	Head injury	48	43.2
	Bruises	48	43.2
	Loss of consciousness	36	32.4
	Limb dislocation	5	4.5
	Spinal cord injury	3	2.7
	Outcomes of injuries	Dead	12
Alive		99	89.2
Deformed		32	32.4
Not deformed		67	67.6

Discussion

Majority of victims were in the youthful age of less than 35 years while all were males. This finding supports a similar studies in which majority of victims were adolescents and young adults in the population, and were males(10,16). The physiological changes of ageing make young person more active and a lot adventurous than the older aged persons, so they are likely to take risky behaviours(16), including reckless driving, dangerous overtaking, speeding and may likely be under influence of alcohol coupled with the fact that they have little experience with driving.

The fact that all cases in this study were males and non females may be due to their greater involvement in motorcycling activities or because males are generally more adventurous than the female gender. This sex distribution however differs from another study in which male to female ratio was 2.5: 1(10). This difference is probably due to the fact that Nzegwu's study was on both commercial motorcyclists and their passengers, among which females will be inclusive. In this study, a little less than half of victims had primary education and below. This perceived low level of literacy could be due to their inability to appreciate safety messages and codes. This supports another study in which motorcyclist with higher level of education were found to practice safety codes more regularly(17). In addition, illiterate drivers may not be able to interpret road signs thus contributing to road accidents.

In this study, about half of the accident victims had head injury. Many studies have also shown that head injury is a leading cause of death following road crashes in children(1,2,8,9) for which motorcycles are particularly notorious(18). There is no doubt that health facilities, as they currently exist in many developing countries with limited resources may not appreciably improve the outcome of many Road Traffic Injuries(19). This is because many facilities necessary to improve survival are very expensive and often unavailable(8) hence; prevention should be the utmost thing.

The mortality rate of about one tenth of victims studied, and morbidities of various magnitudes among survivors shows that RTI is still a prevalent problem in this environment. Since these indices have direct effect on our workforce and economic productivity, dead or injured victims most especially those with limb fractures and dislocations, and spinal cord injuries could no longer be useful; to the workforce but adds to the dependent group in the population, either temporarily or permanently as the case may be.

Generally, commercial motorcyclists need to be re-oriented, trained, and educated about nature and burden of road traffic injuries and public safety measures aimed at preventing them. Although the use of crash helmets is presently being enforced in this country, defaulters should be duly punished in order to deter others. Thus appreciable reduction depends on coordinated efforts of governments, concerned groups and individuals at enforcing the provisions of the Highway codes, organizing continuous public enlightenment campaign and seminar at various parks. Such activities should center on various aspects of road safety including regular vehicle maintenance, avoidance of over speeding and respect for road signs among others.

Conclusion: Morbidities and deaths from road traffic injuries among commercial motorcyclist is a common occurrence in this environment. The aftermath effects on victim's lives cannot be over emphasized. Stakeholders that have roles to play in reduction of these occurrences need to move swiftly towards proactive, coordinated preventive and control measures.

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References

1. Kemp, A and Sibert, J. Childhood accidents: epidemiology, trends, and prevention. *J Accid Emerg Med* 1997; 14: 316 - 20.
2. Nantulya, V.M and Reich, M.R. The neglected epidemic: road traffic injuries in developing countries. *BMJ* 2002; 324: 1139 - 41.
3. Asogwa, S.E. Road traffic accidents in Nigeria: a review and a reappraisal. *Injury* 1990; 21:234- 8.
4. Asogwa, S.E. Road Traffic Accidents in Nigeria: In a Handbook for All Road Users. 1st Edition. Enugu. SNAAP Press Ltd., 1999: 1-79.
5. Odero, W; Garner, P and Zwi, A. Road traffic injuries in developing countries: a comprehensive review of epidemiological studies. *Trop Med Int Health* 1997; 2: 445-60.
6. Adesunkanmi, A.R. A review of trauma scoring systems: uses and relevance to the developing countries *Nigerian Postgraduate Medical Journal* 2000; 7: 75 - 84.
7. Oluwadiya, K.S. Pattern of Limb Injuries resulting from Motorcycle Accidents in Ile-Ife. A dissertation submitted to the National Postgraduate Medical College of Nigeria, May 2001.
8. Adesunkanmi, A.K, Oginni, L.M, Oyelami, O.A and Badru, O.S. Road traffic accidents to African children: Assessment of severity using the Injury Severity Score (ISS). *Injury, Int J Care Injured* 2000; 31: 225 - 8.
9. Bergman, A.B; Rivera, F.P and Richards, D.D. The Seattle children's bicycle helmet campaign. *Am J Dis Childhood* 1990; 144: 727-731.
10. Nzegwu, M.A; Aligbe, J.U; F.Banjo, A.A; Akhiwu, W and .Nzegwu, C.O. Patterns of Morbidity and Mortality amongst Motorcycle Riders and their Passengers in Benin-City Nigeria: One-year Review. *Annals of African Medicine*, 2008; 7(2): 82-85.
11. Adegbehingbe BO, Oluwadiya KS, Adegbehingbe OO. Motorcycle associated ocular injuries in Ile-Ife, Nigeria, *African Journal of Trauma* 2004; 2:35-9.
12. Adesunkanmi, A.K; Oginni, L.M; Oyelami, O.A and Badru, O.S. Epidemiology of childhood injury. *J Trauma*, 1988; 44: 506-12.
13. Solagberu, B.A; Duze, A.T; Ofoegbu, C.P; Adekanye, A.O and Adelowo, E.O. Surgical Morbidity and Mortality Pattern in the Accident and Emergency Room: A preliminary report. *Afr J med. Med Sci.* 2000, 29: 315-8.
14. Saheeb, B.D. Influence of positions on the incidence and severity of maxillofacial injuries in vehicular crashes. West Afr J Med. 2003; 22(2):146-9.
15. Gidado, I. The message to the revised Highway Code. *The Revised Highway Code. FRSC.* January, 1997: 11-17.
16. O'Hanion R.H; Motorways and Health: accident control. *J.Roy soc Health.* 1980:144-148.
17. Amoran, OE, Owoaje E, Giwa OA, and Gbolahan, OB. Road safety practices among commercial motorcyclists in a rural town in Nigeria: implications for health education. *International Quarterly of Community Health Education.* 2005-2006;24(1): 1-15.
18. UNICEF. Safe Vietnam: protecting children from preventable head injuries. Available from: URL: <http://www.unicef.org/vietnam/new045> accessed on the 8th July, 2004.
19. Mock, C.N; Adzotor, K.E; Conklin, E; Denno, D.M and Jurkovich, G.J. Trauma outcome in the rural developing world: comparison with an urban Level 1 trauma centre. *J Trauma* 1993; 35: 518.