



Full Length Research Article

THE ASSOCIATION BETWEEN THE BAN OF COMMERCIAL MOTORCYCLE OPERATIONS AND THE REDUCTION IN THE RATE OF ROAD TRAFFIC ACCIDENTS WITHIN YENAGOA METROPOLIS OF BAYELSA STATE

¹Arogo, Azibasuum, ²Ugwu, Ifeoma Victory, ³Diekedie, Amara and
^{4,*}Ephraim-Emmanuel, ⁵Benson Chukwunweike

^{1,3}Department of Arts and Social Sciences, Bayelsa State College of Health Technology,
Otuogidi – Ogbia town, Nigeria

²Department of Health Information Management Technology, Bayelsa State College of Health Technology,
Otuogidi – Ogbia town, Nigeria

⁴Department of Dental Health Sciences, Bayelsa State College of Health Technology,
Otuogidi – Ogbia town, Nigeria

ARTICLE INFO

Article History:

Received 27th July, 2014
Received in revised form
25th August, 2014
Accepted 26th September, 2014
Published online 30th October, 2014

Keywords:

Commercial Motorcycle Operations,
Road Traffic Accidents

ABSTRACT

Background: This research aimed at determining the association between the ban of commercial motorcycle operations and the reduction in the rate of road traffic accidents in Yenagoa metropolis of Bayelsa State, Nigeria.

Methods: A retrospective comparative cross-sectional study comparing the number of road traffic accidents that occurred one year before the ban of commercial motorcycle operations (1st August 2011 – 31st July 2012) and one year after the ban of commercial motorcycle operations (1st September 2012 – 31st August 2013) within the Yenagoa metropolis of Bayelsa. This data was gotten from the orthopaedics unit of the Federal Medical Centre, Yenagoa

Results: Put together, one year before the ban of commercial motorcycle operations within the Yenagoa metropolis of Bayelsa State, a total of 463 cases of road traffic accidents were recorded and only 111 cases of road traffic accidents were recorded one year after the ban of their operations within the Yenagoa metropolis. A statistically significant association using the student's t-test, ($p < 0.05$) was however gotten when the number of road traffic accidents before the ban was compared with the number after the ban.

Conclusion: The ban of commercial motorcycles within the Yenagoa metropolis of Bayelsa State was a good decision which yielded positive results by bringing about a significant reduction in the number of road traffic accidents experienced. However, we recommend further reinforcement of road traffic laws within the Yenagoa metropolis in order to ensure the barest minimum occurrence of road traffic accidents as well as provision of jobs for those rendered jobless after the ban of commercial motorcycles in Yenagoa, Bayelsa State.

Copyright © 2014 Arogo, Azibasuum et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Commercial motorcycle operations have been in Nigeria right from the late 1980's as a result of an economic adversity at those times. It quickly gained popularity nationwide as a means of transport within cities for majority of the populace. However, there was a flaw to this development as most of the riders of

these motorcycles had little or no education and in a bid to "make ends meet" in the face of high rates of unemployment, they seemed not to be bothered about getting themselves educated not just academically but morally as well as socially, thus ending up as reckless motorcyclists or even as miscreants whom were a danger to the society. That notwithstanding, their operations were still readily patronized by many due to reasons including prompt movement of individuals very easily despite traffic congestions, roads in bad shapes, unavailability of city mass transit systems and so on. Owing to their lack of education, these motorcyclists courageously flaunted traffic

*Corresponding author: Ephraim-Emmanuel, Benson Chukwunweike
Department of Dental Health Sciences, Bayelsa State College of
Health Technology, Otuogidi – Ogbia town, Nigeria

rules, probably as result of substance abuse, alcohol intake or in a bid to make expected returns for the day, thus leading to an increase in the number of motorcycle-related accidents especially in developing countries as well as leading to an increase in injuries and deaths related to road traffic accidents and indeed a major concern to public health globally. (Nzegwu, Aligbe, Banjo, Akhiwu and Nzegwu; Kudebong *et al.*, 2011; Yakubu, 2012; Ogunmodede, Adio, Ebijuwa, Oyetola and Akinola, 2012; Agbo, Igo, Envuladu and Zoakah, 2013; Ogunmodede and Akangbe, 2013; Salako, Abiodun and Sholeye, 2013).

These commercial motorcycles popularly known as 'Okada' in Nigeria have also seen young men whom are supposed to be farming or learning other trades, pulling out from these, just to become untrained 'okada riders', making themselves a danger both not only to themselves but to other road users. In past studies, it has been noted that in order to tackle road traffic accidents, commercial motorcycle activities must be put in check as even in developed countries, there is a 20-fold risk of death in a motorcycle crash than in a crash involving motor vehicles. Their increased activities has thus led to an increase in hospital admissions with attendant injuries mostly to the limbs as well as the head; even more sadly resulting in the loss of precious human life. (Mandong, Manasseh and Ugwu, 2006; Chalya *et al.*, 2010; Nwadiaro, Ekwe, Akpayak and Shitta, 2011; Ofonime, 2012; Asekame and Oisamoje, 2013; Christopher, Usman and Eke, 2013; Dongo *et al.*, 2013).

With this increasing burden of commercial motorcycle-related road traffic accidents, it seems very necessary to play down on the existence of commercial motorcycle operations and make effective other options of public transportation systems including tricycles, mini-buses, buses and so on. Education, in this case is of utmost importance as even though these motorcyclists are banned from the roads, they are likely to re-appear in other vehicular forms. Road safety principles and guidelines should also be inculcated into them and in cases of being found wanting, they should be made to face the reprimand of the laid down laws. Certain states in Nigeria including Plateau state, have however restricted the activities of commercial motorcycle activities within metropolitan areas with resultant joblessness but with a decrease in the number of road traffic accidents and injuries experienced, especially those involving motorcycles; as well as the restoration of social and environmental sanity such as reduced noise and air pollutions, better traffic management as well as a reduction in crime rates. (Ogunmodede *et al.*, 2012; Asekame and Oisamoje, 2013; Agbo *et al.*, 2013; Ogunmodede and Akangbe, 2013; Salako *et al.*, 2013).

A similar restriction in the activities of commercial motorcycle operatives also took place within the Yenagoa metropolis of Bayelsa State. This has been met with questions of if there have been any reductions in road traffic accidents and injuries since the ban. It is thus the aim of this study to determine the association between the ban of their activities within the Yenagoa metropolis and the reduction in the rate of road traffic accidents within the same area. This study would objectively relay to the government the positive mark created within the Yenagoa metropolis by banning the operations of commercial motorcycles, thus propelling the government to provide alternative means of intra and inter-city transportation.

MATERIALS AND METHODS

The Federal Medical Centre, Yenagoa was used as our source for research data for this study. It is a tertiary health care centre owned by the government which was chosen because of its uniqueness in managing different medical/surgical cases either directly or by referral, mainly as it is one of the tertiary health facilities located right within the Yenagoa metropolitan area. Equipped with state of the art equipment, it runs routine outpatient clinics for various units of the hospital, performs surgical operations and renders emergency services round the clock.

A retrospective comparative cross-sectional study was conducted to study the association between the ban of commercial motorcycle operations and the rate of road traffic accidents within the Yenagoa metropolitan area. Data on the number of morbidities and mortalities as a result of road traffic accidents that presented at the orthopaedic unit of the hospital 12 months before the ban (1st August 2011 – 31st July 2012 and 12 months after the ban (1st September 2012 – 31st August) of commercial motorcycle operations was gotten and compared to achieve our aim. Due permission was however sought from hospital authorities prior to collection of our data. The data collected was analyzed using the Statistical Package for Social Sciences (SPSS) version 20 by specifically using the student's t-test with statistical significance set at $p < 0.05$.

RESULTS

Put together, before the ban of commercial motorcycles within the Yenagoa metropolis, a total of 463 cases of road traffic accidents presented at the Orthopaedics wards of the Federal Medical Centre out of which 48 deaths were recorded. The mean number of cases of road traffic accidents was 38.58 ± 14.58 S.D. More males 237(51.19%) than females 226(48.81%) suffered morbidities and mortalities as a result of these accidents with an age range of patients being between 4 – 85 years. Noteworthy, the month of December recorded the highest number of these road traffic accidents. This is shown in Table 1.

Considering the number of road traffic accidents that occurred within the Yenagoa metropolis after the ban of commercial motorcycles, a drastic reduction in the number of morbidities and mortalities was recorded as only a total of 111 cases [Female 56(50.45%) > Male 55(49.55%)] of road traffic accidents presented at the Orthopaedics wards of the Federal Medical Centre out of which 3 deaths were recorded. The mean number of road traffic accidents was 9.25 ± 4.90 S.D. This is shown in Table 2.

Association Between the Ban of Commercial Motorcycle Operations and the Reduction in the Rate Of Road Traffic Accidents Within Yenagoa Metropolis

H₀: The ban of commercial motorcycles does not have an association with the reduction in the rate of road traffic accidents within Yenagoa metropolis.

H₁: The ban of commercial motorcycles has an association with the reduction in the rate of road traffic accidents within Yenagoa metropolis.

Table 1. Road Traffic Accidents That Occurred Before The Ban Of Commercial Motorcycle Operations In Yenagoa Metropolis

| MONTH | NO OF CASES | | | DEATH | | | SEX | | AGE RANGE (YEARS) |
|-----------|-------------|-----|---------------|-------|----|-------|-----|-----|-------------------|
| | M | F | TOTAL | M | F | TOTAL | M | F | |
| August | 35 | 21 | 56 (12.10%) | 4 | 3 | 7 | 35 | 21 | 4-50 |
| September | 14 | 17 | 31 (6.70%) | 1 | - | 1 | 14 | 17 | 5-40 |
| October | 16 | 19 | 35 (7.56%) | - | 1 | 1 | 16 | 19 | 10-45 |
| November | 26 | 24 | 50 (10.80%) | - | - | - | 26 | 24 | 15-85 |
| December | 38 | 33 | 71 (15.32%) | 5 | 2 | 7 | 38 | 33 | 4-60 |
| January | 10 | 15 | 25 (5.40%) | 3 | 2 | 5 | 10 | 15 | 10-50 |
| February | 17 | 16 | 33 (7.13%) | 3 | 1 | 4 | 17 | 16 | 11-70 |
| March | 7 | 10 | 17 (3.67%) | 3 | 3 | 6 | 7 | 10 | 15-70 |
| April | 18 | 11 | 29 (6.26%) | 2 | 1 | 3 | 18 | 11 | 10-80 |
| May | 18 | 19 | 37 (7.99%) | 1 | 1 | 2 | 18 | 19 | 15-70 |
| June | 18 | 23 | 41 (8.86%) | 2 | 2 | 4 | 18 | 23 | 5-60 |
| July | 20 | 18 | 38 (8.21%) | 1 | 2 | 3 | 20 | 18 | 7-80 |
| Total | 237 | 226 | 463 (100.00%) | 25 | 18 | 43 | 237 | 226 | |

Table 2. Road Traffic Accidents That Occurred After The Ban Of Commercial Motorcycles In Yenagoa Metropolis

| MONTH | NO OF CASES | | | DEATH | | | SEX | | AGE RANGE (YEARS) |
|-----------|-------------|----|-------|-------|---|-------|-----|----|-------------------|
| | M | F | TOTAL | M | F | TOTAL | M | F | |
| September | 10 | 8 | 18 | 1 | 1 | 2 | 10 | 8 | 10-55 |
| October | 7 | 4 | 11 | 1 | - | 1 | 7 | 4 | 5-60 |
| November | 8 | 9 | 17 | - | - | - | 8 | 9 | 5-70 |
| December | 2 | 4 | 6 | - | - | - | 2 | 4 | 7-35 |
| January | 2 | 4 | 6 | - | - | - | 2 | 4 | 7-40 |
| February | 5 | 6 | 11 | - | - | - | 5 | 6 | 7-40 |
| March | 1 | 3 | 4 | - | - | - | 1 | 3 | 15-40 |
| April | 2 | 1 | 3 | - | - | - | 2 | 1 | 5-40 |
| May | 2 | 3 | 5 | - | - | - | 2 | 3 | 6-40 |
| June | 3 | 4 | 7 | - | - | - | 3 | 4 | 10-55 |
| July | 7 | 4 | 11 | - | - | - | 7 | 4 | 10-50 |
| August | 6 | 6 | 12 | - | - | - | 6 | 6 | 15-70 |
| Total | 55 | 56 | 111 | 2 | 1 | 3 | 55 | 56 | |

A statistically significant difference was recorded for analyzed data before and after the ban ($p < 0.05$), thus it was accepted that the ban of commercial motorcycle operations has a positive association with the rate of road traffic accidents due to the sporadic reduction in the number of road traffic accident cases that presented at the Federal Medical Centre, Yenagoa after the ban of commercial motorcycle operations within the Yenagoa metropolis of Bayelsa State.

Interpreted: The ban of commercial motorcycle activities resulted in a reduction in the number of road traffic accidents that occurred within the Yenagoa metropolitan area of Bayelsa State. (p -value < 0.05).

DISCUSSION

While commercial motorcycle riding appeared to have brought succour both to the jobless and helpless commuters desirous of beating ubiquitous gridlocks in Nigeria urban roads, the relief brought by the trade seems to have floundered as the incidence of road traffic accidents involving motorcycles both in Nigeria cities and other developing nations is high (Eze, Abonyi, Ohagwuand Eze, 2013; Chalya *et al*, 2010). From our study, it was indeed obvious that the presence of commercial motorcycles within the Yenagoa metropolis of Bayelsa State was a major contributor to road traffic accidents within our study area. Before the ban of the commercial motorcycles, a total of 463 cases of road traffic accidents presented at the

Federal Medical Centre among which 48 individuals lost their lives. It was also observed that the month of December recorded the highest number of such cases 71 (15.32%). This may have been due to increased rate of economic activities considering that this month also marks the end of the year. After the ban of these commercial motorcycles, the number of road traffic accident cases that presented at the Federal Medical Centre drastically reduced; $n = 111$ with a statistically significant difference of $p < 0.05$.

This is noteworthy as even during the timeframe of the ban, no new government hospital had been introduced into the health system within the Yenagoa metropolis which could have taken over the patient load daily experienced at the emergency unit of the Federal Medical Centre, Yenagoa as well as those admitted in this same health facility. With reports from other studies carried out on this subject matter, the operation of commercial motorcycles is indeed a major contributor to the occurrence of road traffic accidents and thus, hospital admissions. (Adogu, Ilika and Asuzu, 2009; Kudebong *et al*, 2011; Ogunmodede *et al*, 2012; Asekhome and Oisamoje, 2013; Dongo *et al*, 2013). The ban of commercial motorcycles is also very significant in reducing the rate of road traffic accidents as evidenced by the results of this study as well as the significant reduction in the number of deaths recorded as a result of commercial motorcycle-related road traffic accidents. This is supported by the views of other authors. (Agbo *et al*, 2013; Eze *et al*, 2013). It is not enough at this point though to out rightly ban these

commercial motorcycle operations without first tackling the cogent factors that result in the prevalent nature of commercial motorcycle-related road traffic accidents, as if not dealt with, the same individuals who were driving these motorcycles would be the same ones driving cars or any other type of automobile in the nearest future. Prevailing factors identified to cause road accidents by commercial motorcyclists include:

Rough riding pattern of the motorcyclists, use of alcohol and other psychoactive substances, overconfidence, over speeding, bad roads, lack of understanding of road signs as well as ignoring safety measures. From this list of identified factors, it could be said that illiteracy could be contributory to the presence of some of these factors even though it does not contribute to the amount of earnings they make in a day. (Adogu, Ilika and Asuzu, 2009; Kudebong *et al*, 2011; Yakubu, 2012; Ogunmodede and Akangbe, 2013; Salako *et al*, 2013). It can thus be said that organizing tutorial classes at reduced rates to boost the literacy level of these motorcyclists as well as provide safety-related information to them could immensely help in curbing their involvement in road traffic accidents. The strict enforcement of road safety laws would also be far-reaching in reducing commercial motorcycle-related road accidents. (Adogu, Ilika and Asuzu, 2009; Nwadiaro *et al*, 2011).

Conclusion

The ban of commercial motorcycles within the Yenagoa metropolis of Bayelsa State was a good decision which yielded positive results by bringing about a significant reduction in the number of road traffic accidents experienced within this thriving metropolis.

Recommendations

The following recommendations have been drawn up as a result of the findings of this research work:

- Further reinforcement of road traffic laws within the Yenagoa metropolis in order to ensure the barest minimum occurrence of road traffic accidents.
- Provision of jobs for those rendered jobless after the ban of commercial motorcycles in Yenagoa, Bayelsa.
- Education and awareness of the general public on the safety principles that need to be strictly adhered to by all road users.

REFERENCES

Adogu P.O., Ilika A.L., Asuzu A.L., 2009. Predictors of road traffic accident, road traffic injury and death among commercial motorcyclists in an urban area of Nigeria. *Niger J Med.*;18(4):393-7. PMID: 20120144

- Agbo H. A., Igo I., Envuladu E. A. and Zoakah A. I., 2013. Impact of legislation on motorcycle associated bone injuries caseload in a hospital in Jos, Nigeria. *WebPub Journal of Medical Research*, 1(1): 11-16. Available online at <http://www.researchwebpub.org/wjmr>
- Ajay K., 2011. Understanding the emerging role of motorcycles in African cities: A political economy perspective. SSATP Discussion Paper No. 13. Urban Transport Series. Sub-Saharan Africa Transport Policy Program
- Asekhame F.F and Oisamoje M.D, 2013. Ban on Commercial Motorcycle Operations in Benin City, Nigeria: An Appraisal of the Benefits and Business Opportunities. *Developing Country Studies*; 3(14):10. ISSN 2224-607X (Paper) ISSN 2225-0565 (Online). www.iiste.org
- Dongo E., Kesieme E.B, Eighemherio A., Nwokike O., Esezobor E., and Alufohai E., 2013. Motorcycle Related Injuries among Rural Dwellers in Irrua, Nigeria: Characteristics and Correlates. *Emergency Medicine International*; Vol. 2013, Article ID 569103, 4 pages, Hindawi Publishing Corporation. Available at <http://dx.doi.org/10.1155/2013/569103>
- Eze C.U, Abonyi L.C, Ohagwu C.C and Eze J.C, 2013. Pattern of Plain X-Ray Findings in Bone Injuries Among Motorcycle Accident Victims in Lagos, Nigeria. *International Research Journal of Medicine and Medical Sciences*, 1(2): 51-55.
- Kudebong M., Wurapa F., Nonvignon J., Norman I., Awoonor-Williams J.K. and Aikins M., 2011. Economic Burden of Motorcycle Accidents in Northern Ghana. *Ghana Medical Journal*, 45(4): 135
- Nwadiaro H.C, Ekwe K.K, Akpayak I.C, Shitta H., 2011. Motorcycle injuries in north-central Nigeria. *Niger J. Clin Pract.*,14:186-9. Available from: <http://www.njceponline.com/text.asp?2011/14/2/186/84012>
- Ogunmodede T. A. and Akangbe C. A., 2013. Effect of road safety information availability and utilization on commercial motorcycle accidents in Nigeria. *International Journal of Library and Information Science*, 5(3): 68-76. DOI: 10.5897/IJLIS11.094. Available at <http://www.academicjournals.org/IJLIS>
- Ogunmodede T.A, Adio G., Ebijuwu A. S, Oyetola S. O and Akinola J. O, 2012. Factors Influencing High Rate of Commercial Motorcycle Accidents in Nigeria. *American International Journal of Contemporary Research*, 2(11): 130
- Salako A., Abiodun O., and Sholeye O., 2013. Risk Behaviors for Road Traffic Accidents and Severe Crash Injuries Among Commercial Motorcyclists in Sagamu, South West, Nigeria. *Online Journal of Medicine and Medical Science Research*; 2(2): 19-23. ISSN 2277-0879. Available Online at <http://www.onlineresearchjournals.org/JMMSR>
- Yakubu, A. T., 2012. Determinants of Earnings among Commercial Motorcycle Operators in Kwara State, Nigeria. *International Journal of Economics and Management Sciences*; 2(2): 11-17
