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RESEARCH ARTICLE

FAMILY AND SOCIAL DEMOGRAPHICS OF VICTIMS OF MOTORCYCLE ACCIDENTS

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ABSTRACT

Introduction: The current increase in the use of motorcycles in Nigeria has been associated with an increased incident rate of motorcycle road traffic accidents (MRTAs). The family and social features of victims might give an insight to the impact on the society.
Aim and Objectives: To determine the family and social demographics of victims of motorcycle road accidents
Materials and Methods: A prospective, hospital-based descriptive study was conducted and eligible patients that presented to the Emergency Department were enrolled as subjects. Data was recorded in a structured recording schedule and analyzed using SPSS 16. Proportions were determined and statistics presented in tables.
Results: There were 72 riders (46.2%), 54 passengers (34.6%) and 30 pedestrians (19.2%) seen. The mean age was 34.33±16.48 years and students were most affected (21.2%). Most passengers were between twenty to forty years (55.6% of pillion riders), just like the riders (68% of riders). Although most victims were married, 46.8% were yet to have children but majority of them (50.6%) had at least one dependant.
Conclusion: Although 20-29 age group was the most seen, it was not only the victims of MRTA that were affected by the accidents, the whole family and the community in general were affected.

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INTRODUCTION

Over the years in Nigeria, road traffic accident has taken on the characteristics of a disease of epidemic proportions. Motorcycle accidents remain the second most common cause of road traffic accidents in both developed and developing countries (Ekwere, 2000). Road traffic injuries (RTI) from such accidents are a major cause of misery, disability and death globally, with a disproportionate number occurring in developing countries (Asogwa, 1999). Based on estimates that are at best conservative, Nigeria is a country with a serious and growing road crash problem which is among the worst in the world (Asogwa, 1999). Deaths from RTI outnumber those recorded from many diseases of importance such as pneumonia, meningitis, tuberculosis and tetanus (Odero *et al*., 1997). Road traffic accidents not only disrupt the rhythm of the family psychologically or emotionally but also would place a great financial strain on the resources of the family especially if a breadwinner of the family is involved. Understanding the family and social characteristics of those likely to ride motorcycles either for leisure or commercial reasons will give an insight to the factors that contributed to the massive increase in its popularity as a means of transport despite the attendant risk of bodily injury or death.

Baptist Medical Centre (now Bowen University Teaching Hospital, Ogbomoso) is a two hundred (200) bed mission hospital, founded in 1907 that provides primary, secondary and tertiary health care services to indigenes of Ogbomoso and its environ. Ogbomoso is a major inter-religious city in South-western Nigeria, situated about 100km north of Ibadan, the capital of Oyo state, Nigeria. It is made up of five local government areas, with a projected population close to one million. Farming is a prominent occupation with the motorcycle being a common mode of transportation. There are also many artisans, traders and civil servants living in the area.

MATERIALS AND METHODS

A prospective, hospital-based descriptive study was conducted between September 2005 and June 2006 to ascertain the family and social demographics of victims of motorcycle road traffic accident. All patients that presented to the Emergency

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Department at the Bowen University Teaching Hospital, Ogbomoso within 48 hours after being involved in motorcycle road traffic accident and that consented to be part of the study were enrolled as subjects. Before the study commenced, ethical clearance was sought and obtained from the sub-committee on the ethics of human experimentation and written consents were obtained from all patients with the understanding that their choice to be or not to be part of the study will not affect the quality of the care they were given. In the case of unconscious patients and children, consent was sought from relatives or guardians. Patients withholding consent to be part of the study, unconscious patients without credible eye witness account of the accident, subjects brought in dead and victims of other forms of road traffic accidents were excluded from the study. Data collected were recorded in a structured recording schedule and included: Name, age, sex, domicile, occupation and educational level. The marital status, number of children, number of dependants and type of informant on presentation in the hospital were also documented. In the cases of children and comatose patients, information was obtained from parents, guardians, relatives or eye witnesses as the case may be. When necessary, information supplied by the police and/or Federal Road Safety Corps officials was used.

Data were analyzed by computer using the statistical package for social sciences (SPSS 16). Means and standard deviations were calculated. Proportions were determined and statistics presented in tables and charts.

RESULTS

One hundred and fifty six patients (156) consented to and fulfilled the inclusion criteria for the study after being involved in motorcycle road traffic accidents. Seventy two of them (46.2%) were motorcycle riders, and 54 were pillion riders (34.6%). Pedestrians were only 30 constituting 19.2%. The mean age was 34.33 years (SD =16.48). The youngest and oldest patients in this study were five and eighty-two years old respectively. The age group 20-29 years had the highest representation of 50 patients (32.1%). This was followed by age group 30-39 years with 35 patients (22.4%). Most of the patients seen in this study (122 patients, 78.2%) were below fifty years. The age group with the least frequency was 80-89 years (2 patents, 1.3%). There were eight teenage riders with the youngest being fifteen years old.

Table 1. Sociocultural demographics

Variables	Rider (%,N=72)	Passenger (%,N=54)	Pedestrian (%,N=30)	Total (%,N=156)
AGE RANGE (IN YEARS)				
0-9	0 (0.0)	0 (0.0)	4 (13.3)	4 (2.6)
10-19	8 (11.1)	6 (11.1)	5 (16.7)	19 (12.2)
20-29	26 (36.1)	19 (35.2)	5 (16.7)	50 (32.1)
30-39	23 (31.90	11 (20.4)	1 (3.3)	35 (22.4)
40-49	6 (8.3)	6 (11.1)	2 (6.7)	14 (9.0)
50-59	7 (9.7)	7 (13.0)	2 (6.7)	16 (10.3)
60-69	1 (1.4)	5 (9.3)	4 (13.3)	10 (6.4)
70-79	1 (1.4)	0 (0.0)	5 (16.7)	6 (3.8)
80-89	0 (0.0)	0 (0.0)	2 (6.7)	2 (1.3)
SEX				
Male	72 (100.0)	34 (63.0)	13 (43.3)	119 (76.3)
Female	0 (0.0)	20 (37.0)	17 (56.7)	37 (23.7)
OCCUPATION GROUP				
Farmers	16 (22.2)	4 (7.4)	8 (26.7)	28 (17.9)
Students	8 (11.1)	16 (29.6)	9 (30.0)	33 (21.2)
Artisans	13 (18.1)	5 (9.3)	0 (0.0)	18 (11.5)
Traders	3 (4.2)	8 (14.8)	11 (36.7)	22 (14.1)
Civil servants	4 (5.6)	7 (13.0)	2 (6.7)	13 (8.3)
Drivers	2 (2.8)	3 (5.6)	0 (0.0)	5 (3.2)
Cyclists	11 (15.3)	0 (0.0)	0 (0.0)	11 (7.1)
Teachers	7 (9.7)	7 (13.0)	0 (0.0)	14 (9.0)
Others	8 (11.1)	4 (7.4)	0 (0.0)	12 (7.7)
USE OF MOTOCYCLE				
Commercial	23 (31.9)	39 (72.2)	16 (53.3)	78 (50)
Private	49 (68.1)	14 (25.9)	5 (16.7)	68 (43.6)
Unknown	0 (0.0)	1 (1.9)	9 (30.0)	10 (6.4)

Table 2. Family demographics

Variable	Number Of Victims	Frequency (N=156)
MARITAL STATUS		
Single	68	43.6%
Married	81	51.9%
Divorced	1	0.6%
Widowed	6	3.8%
NUMBER OF CHILDREN		
Nil	73	46.8%
1-2	20	12.8%
3-4	31	19.9%
5-6	21	13.5%
>6	11	0.7%
NUMBER OF DEPENDANTS		
Nil	77	49.4%
1-2	17	10.9%
3-4	23	14.7%
5-6	18	11.5%
>6	21	13.5%

The oldest rider was seventy years old. Most passengers were between twenty to forty years (55.6% of pillion riders), just like the riders (68% of riders). The youngest passenger was ten years old and the oldest was sixty-seven years old. Eleven of the pedestrians (36.7% of pedestrians) were either below ten years of age or above seventy years. One hundred and nineteen (76.3%) of the patients were males and there was no female rider. Most pedestrians in this study were females (56.7% of pedestrians). Students were most affected with 21.2% involvement rate followed by farmers (17.9%). Eighteen patients were artisans (11.5%), twenty-two were traders (14.1%), thirteen were civil servants (8.3%) and five were motor drivers (3.2%). The commercial motorcyclist without any other form of occupation accounted for only 7.1% of the study group. Teachers and patients with other forms of occupation (apprentices, laborers, hunters, night guards) accounted for 9% and 7.7% of the study group respectively.

Seventy five percent of the patients (117 patients) came from within Ogbomoso town. Only twenty five percent of the patients (39 patients) were from the neighboring towns. The ratio of patients from Ogbomoso compared with those from neighboring towns was exactly 3:1. Eighty four percent of the patients (131 patients) had some form of formal education and twenty-five patients (16%) had no formal education. Thirty six patients (23.1%) had only primary school education, fifty six patients (35.9%) had secondary school education and the rest (39 patients, 25%) had post secondary school education.

Eighty one victims were married (51.9%), single victims were sixty eight (43.6%), one victim was divorced (0.6%) and the rest six (3.8%) widowed. Although most patients were married, 46.8% were yet to have children. About 53.2% of the patients had at least one child. Eleven patients had more than six children. Majority of the patients (50.6%) had at least one dependant. Seventy-seven (49.4%) patients did not have anybody relying on them for sustenance. Among those with dependants, twenty-three patients had 3-4 dependants and twenty-one patients had greater than six persons depending on them for financial assistance.It was possible to obtain information directly from one hundred and eight patients (69.2%). More pedestrians (16 out of 30) were not able to give information themselves. The required information was supplied by the family in such situation.

Fifty percent of all the patients (78 patients) had accidents involving motorcycles being used for commercial purposes. In ten patients (6.4%), the use of the motorcycle was not known; most of the patients in that sub group were pedestrians. Sixty-eight patients (43.6%) had injuries from motorcycles meant for private use.

DISCUSSION

Family medicine is governed by the concept of family dynamics in health and diseases which holds that the family influences the causation of acute diseases and has a great impact on the rehabilitation of chronic diseases (Martey-Marbell, 2005). The health problems of families are therefore interlocking. The family as a group generates, prevents, tolerates and corrects health problems within the membership. It is expected for family physicians to be interested in the social endeavours of the families and their members under his or her care in order to be able to formulate disease prevention and health promotion plan for the whole family.

From this study, teenage riding seemed unpopular with only eight riders (11.1% of riders) being between 10-19 years. The age groups with the highest frequencies of riders were age groups 20-29 years (26 riders, 36.1% of riders) and 30-39 years (23 riders, 31.9% of riders). In some resource-rich environment, younger riders are common. (Reeder *et al*., 1992a,b, 1995). This may be because of early access to motorcycles, while the reverse is the case in our environment. Motorcycles cost about seventy thousand naira (about 500 United States dollars) when brand-new (Solagberu *et al*., 2006) and as such, will not be readily committed to the hand of a teenager in our resource-poor environment. Motorcycle riding seemed unpopular among the elderly with only two riders (2.8% of riders) being sixty years and above.

As seen in Table 1, most of the pillion riders were also in twenty to forty years age range (55.6%). Some have said that this age group is under significant social and economic pressures (Oluwadiya *et al*., 2004; Okeniyi *et al*., 2005) thus the people are often prepared to take any available means of transportation to their destination, safety being a secondary consideration.

More than one-third of pedestrians (36.7% of pedestrians) were either below ten years of age or above seventy years. The prominent involvement of paediatric patients in pedestrian MRTA has been documented (Nantulya and Reich, 2002; Okeniyi *et al*., 2005). The reasons for the ill fated journey among the children with MCI were many; travelling to and fro schools, as well as street hawking also put some children at risk. The involvement of older pedestrians in MRTAs may be due to poor vision and impaired agility. All the patients above age seventy except one rider were pedestrians. The oldest pedestrian victim in our study was an 82 year-old woman.

There were 119 males (76.3%) and 37 females (23.7%); male to female ratio was 3.2:1. There was 100% male preponderance among motorcycle riders (Table 1) with such findings been reported in many previous studies in Nigeria (OLuwadiya *et al*, 2004; Owoaje *et al*, 2005; Oginni *et al*., 2006, 2007). These findings were at variance with a 15% female rider involvement reported by Namdaran and Elton (1988) in Scotland. Females account for 56.7% of pedestrians however and such female preponderance agreed with the findings of Oluwadiya *et al*. (2004) and Okeniyi *et al*. (2005).

Seventy-five percent of the patients in this study were from Ogbomoso town while the rest were either travellers/visitors or brought from neighbouring towns. This compared favourably with 70.3% rate of local patients found by Odelowo (1994). The world is slowly turning to a global village with the whole population more mobile than ever before. Students were the most affected by MRTA in this study (21.2%) (Table 1). It compared well with the rate of 20.5% found for students by Solagberu *et al*. (2006) in Ilorin. These findings suggest the need for better transportation system for students in a bid to reduce the frequency of MRTA.

Most of the patients (84%) were educated. The 84% level of formal education found in our study can be compared with 93.1% found by Owoaje *et al*. (2005) in Igbo-Ora, Nigeria. Some formal education has been known to confer some level of benefits when the practice of road safety codes was considered (Reeders *et al*., 1996). Motorcycling educational programme targeted at riders, passengers and pedestrians could therefore be incorporated to the educational system (Agunloye, 1995).

Dandona *et al*. (2006) found that 64.6% of their study group were currently married. That is similar to 51.9% found in this study (Table 2) and this further confirmed that while single, younger riders and passengers were found in studies conducted in resource-rich countries who ride for pleasure (Reeder *et al*, 1992a,b, 1995) the reverse is the case in a country like Nigeria. Most of the riders in Nigeria (motorcyclist and passengers) made use of the motorcycle because it might be the only means of transportation that is available and affordable. The motorcycle is also useful for navigating poor road networks or traffic hold-ups, both of which are common in Nigeria (Okeniyi, 2005; Solagberu, 2006).

Dandona *et al*. (2006) also found that 52.4% of their study group were the main income earners in their household. A similar finding was obtained in this present study in that most of the patients had children (53.2%) and dependants (50.6%) to take care of (Table 2). That was a very important finding because the financial capacity of the family will be seriously affected in many ways because of such accidents. Not only will the family be deprived of the financial contributions of an income earner either permanently or temporarily, the family will also have to look for funds to take care of such persons in the hospital if they were seriously injured, thus worsening the family's financial situation.

Another aspect of the financial burden on the family consequent to such MRTAs as seen from this present study was the fact that the 20-29 age group were the most affected. Most of the victims were males, married, and most had dependants to take care of. Thus it could be said that MRTA majorly incapacitates a breadwinner of the affected families. In our society, males were commonly seen as the major breadwinner of the family and this concept puts a lot of pressure on them financially. Coupled with the loss of revenue from a major breadwinner of the family was the increased family expenditure that results from health care needs of the injured person. In some cases of MRTAs, some family members have been known not to be able to pursue their means of livelihood because of the need to be around in the hospital to care for the injured patient thus further worsening the burden of the family.

After being involved in MRTA, some victims recovered, some died and some ended up being incapacitated for life. Nursing care for such incapacitated patients will usually be provided by the family, sometimes at home. It's not unusual for students to stop school or workers to stop their work for some time to take care of their family members

One hundred and eight patients were able to give detailed account of their personal data and details of the accident although that was not possible in 53.3% of the pedestrians. The majority of the pedestrians were either too young, too old or too severely injured to give information. The relatives were around however to give details that would otherwise have been missing, making adequate care more difficult.

Conclusion

Based on the findings of this study, it is of vital importance to include questions on the mode of transport commonly employed by the members of the family in other to formulate accident prevention strategies and provide holistic care. Although 20-29 age group were the most seen, it was not only the victims of MRTA that were affected by the accidents, the whole family and the community in general were affected. It is therefore important to look out for ways to reduce the scourge of MRTAs on the family and the community in general.

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