A STUDY OF ROAD TRAFFIC ACCIDENT CASES IN ACCIDENT & EMERGENCY UNIT OF BATU GAJAH DISTRICT HOSPITAL, PERAK FROM NOVEMBER 2005 TO FEBRUARY 2006

BY:

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Abstract

- This was a retrospective cross-sectional study with 547 secondary data of road traffic accident cases in Accident and Emergency Unit of Batu Gajah District Hospital, Perak, from November 2005 to February 2006.
- Out of 547 cases, 437 (79.89%) were males and 110 (20.11%) were females; 53% were Malay, 20.1% Chinese, 24.3% Indians and 2.6% were from other ethnic groups.
- The age of the subjects were ranged from 1 to 80 years old with a mean of 28.53.
- From 534 valid cases, majority were motorcyclists (71.91%).
- 81.00% of patients sustained minor injuries and 19.00% ended up with major injuries.
- There was a significant association between outcome of the road traffic accidents and their age group ($p<0.05$).
- Further prevention and control with emphasis on behavioral changes, education and law enforcement may reduce the number of accidents in the future.

- *Keywords*: road traffic accident, road traffic injuries, motor vehicle accidents.

Introduction

- Road Traffic accidents in Malaysia have been increasing at the average rate of 9.7% per annum over the last three decades.[1]

- The increase of road accidents is link with the rapid growth in population, economic in development, industrialisation and motorisation encountered by the country.[2]

- The total length of road had also increased from 11,161 km in 1974 to 71,814km in 2005 to accommodate an increase in numbers of vehicles in Malaysia. This also led to an increase of ownership from 9.6 persons per vehicle in 1974 to 1.7 persons per vehicle in 2005.[2]

- The reasons for the high burden of road traffic injuries in developing countries are: growth in the numbers of motor vehicles; higher number of people killed or injured per crash in low-income countries, poor enforcement of traffic safety regulations; inadequacy of health infrastructure, and poor access to health care.[4]

Objective

General objective

To give an overview of the patients involved in road traffic accidents and attended Accident & Emergency Unit of Batu Gajah District Hospital, Perak from November 2005 to February 2006.

Specific objectives

- To identify the socio-demographic characteristic of patients (age, sex, races, and occupation) involved in road traffic accident injuries in Batu Gajah District Hospital, Perak from November 2005 to February 2006.

- To describe types of the traffic elements and/or road user involved (cars, motorcycle, bicycle pedestrian and others) and the outcome (inpatient, outpatient referred to Ipoh General Hospital and death).

Methodology

- Retrospective cross sectional study
- Population and samples : patients (547) who attended the A & E Unit of Batu Gajah District Hospital due to road traffic accident (secondary data)
- Period : Within the 1st of November 2005 to 28th of February 2006
- Data analysis: SPSS 13

Results

Demographic characteristics	Type	Total
Sex	Male = 437 (79.89%) Female = 110 (20.11%)	547 (100%)
Races	Malay = 290 (53.02 %) Chinese = 110 (20.11%) Indian = 133 (24.31%) Others = 14 (2.56%)	547 (100%)

Table 1: Demographic characteristics

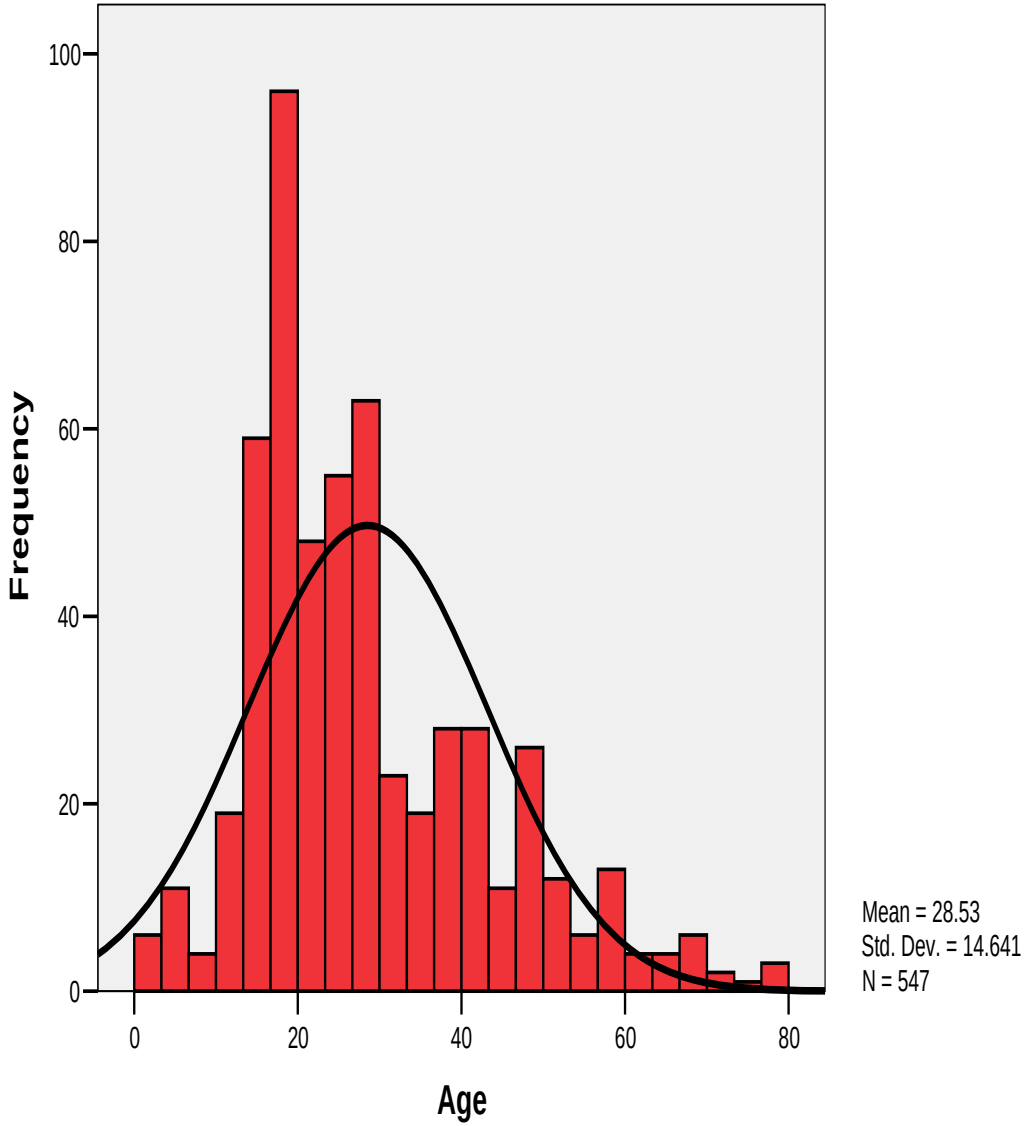


Figure 1: Road traffic accidents cases in Accident & Emergency Unit of Batu Gajah District Hospital from November 2005 to February 2006 according to age.

Figure 2: Distribution of road traffic accident cases according to month from November 2005 to February 2006.

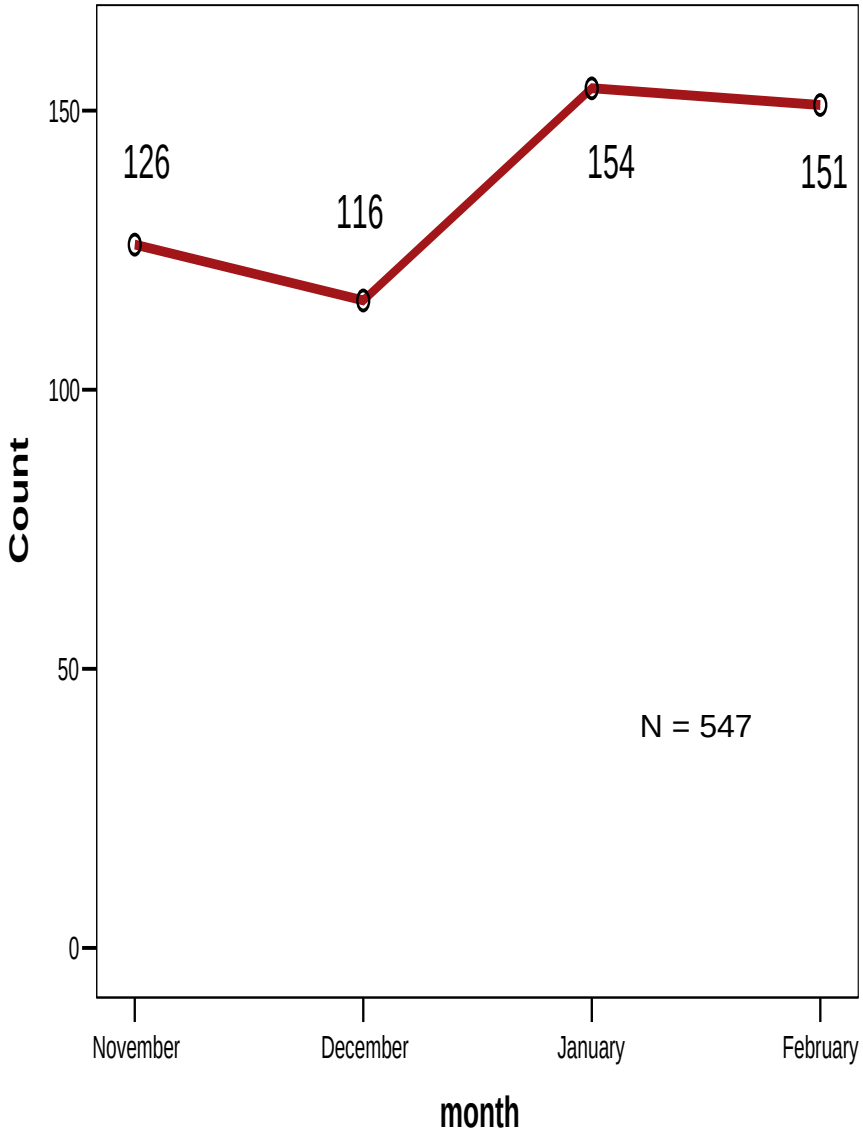


Figure 3: Road traffic accidents cases in Accident & Emergency Unit of Batu Gajah District Hospital from November 2005 to February 2006 according to time of occurrence.

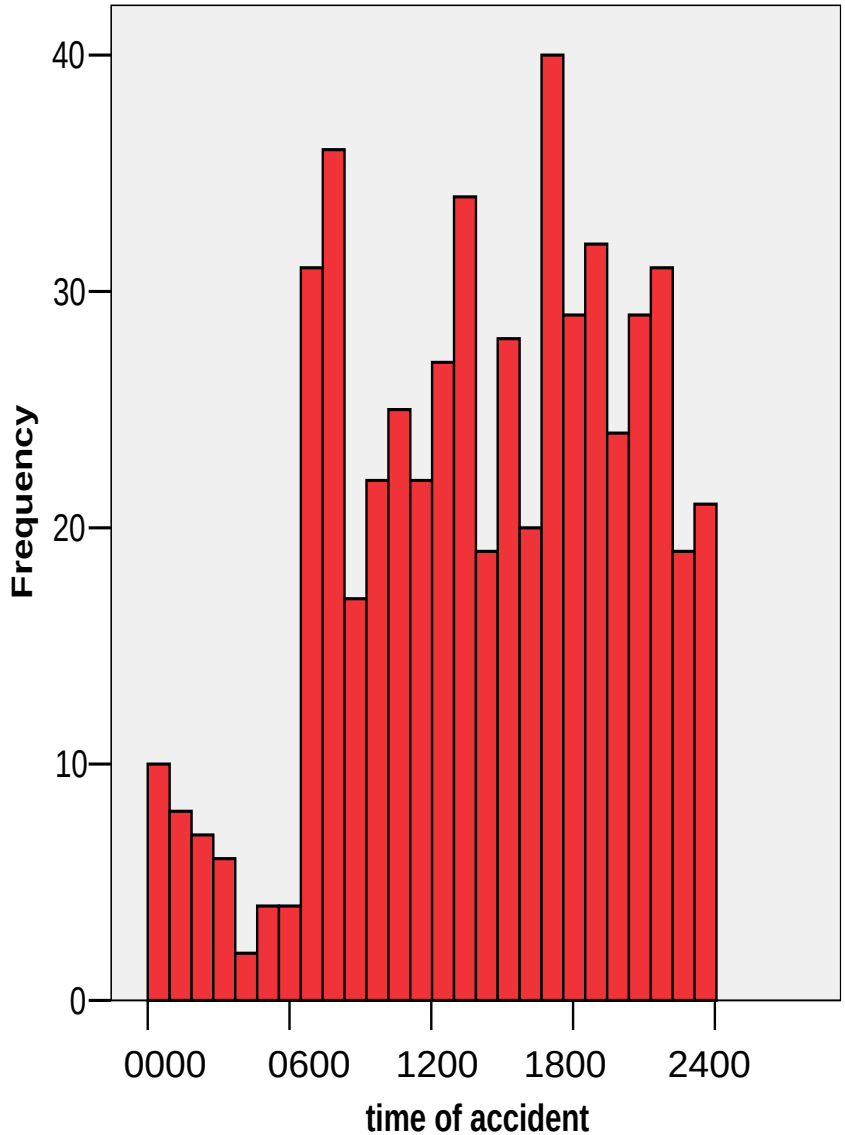
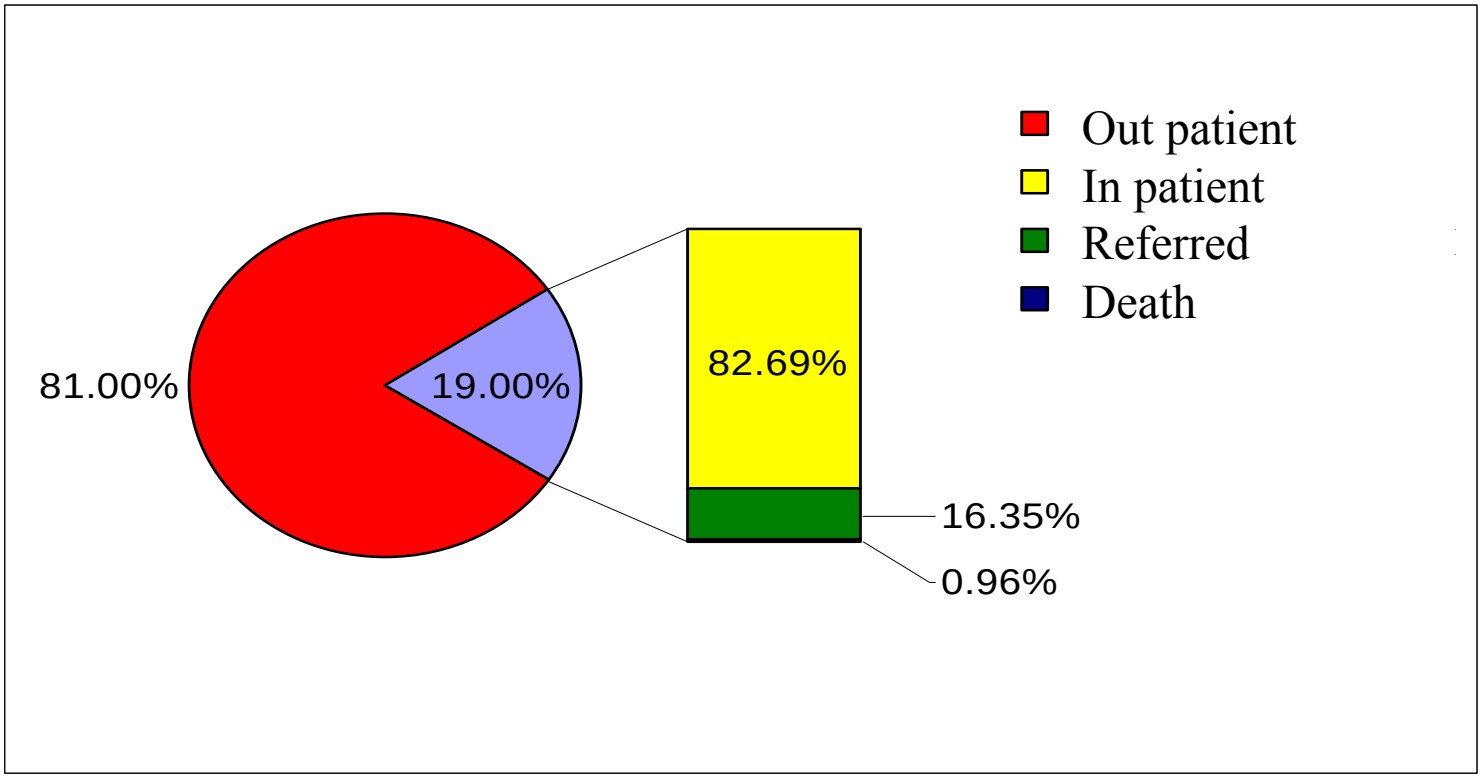


Figure 4: Outcome of the road traffic accident patients who attended Accident & Emergency Unit of Batu Gajah District Hospital from November 2005 to February 2006



Note:

Out patient = treated in the casualty and discharged } Minor

In patient = admitted to the A&E wards or respective wards

Referred = referred to Ipoh General Hospital, Perak } Major

Death = died on the spot, on the way to or in A&E Unit

Figure 5: Types of injury resulting from road traffic accidents.

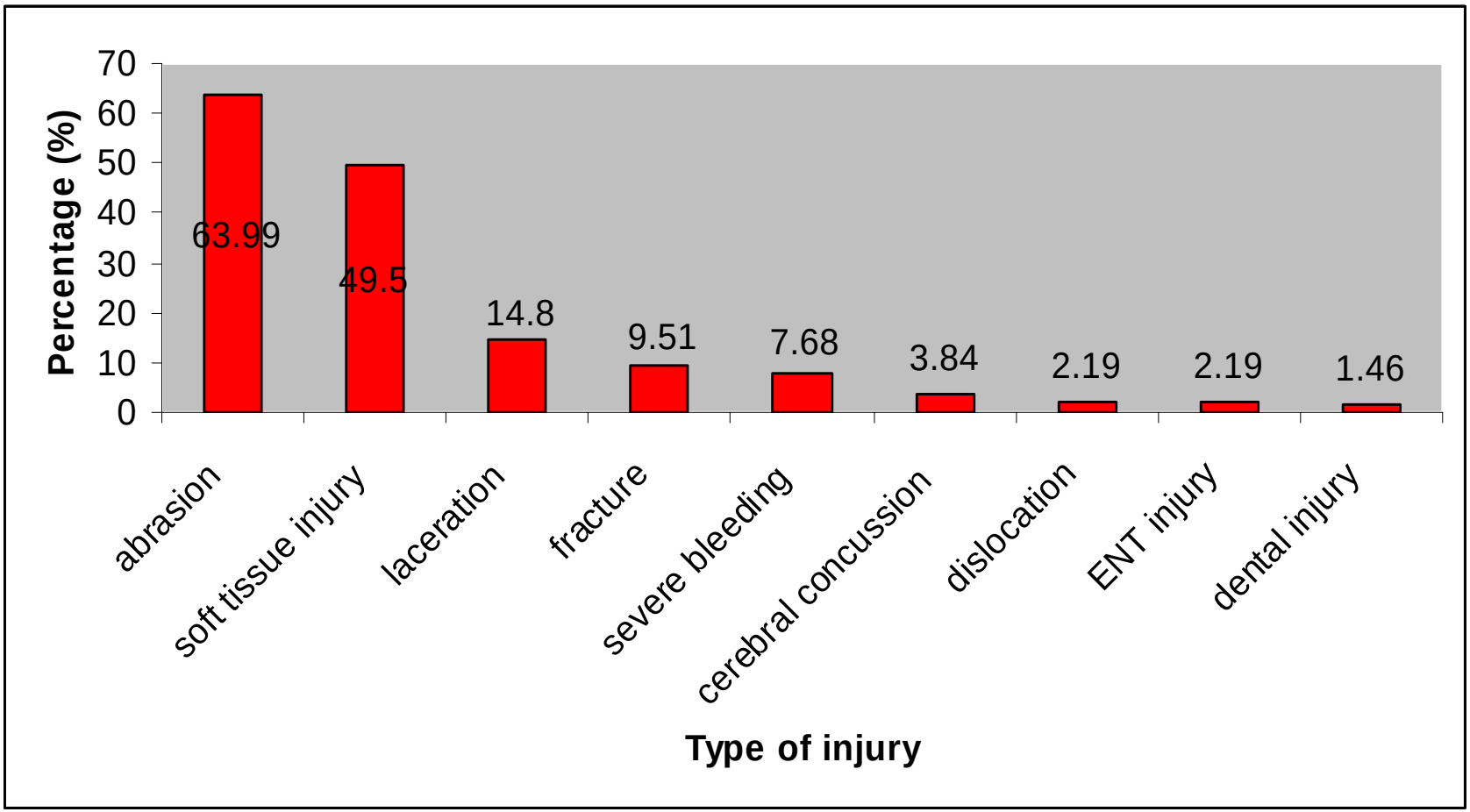


Figure 6: Distribution of body parts involved in road traffic accidents.

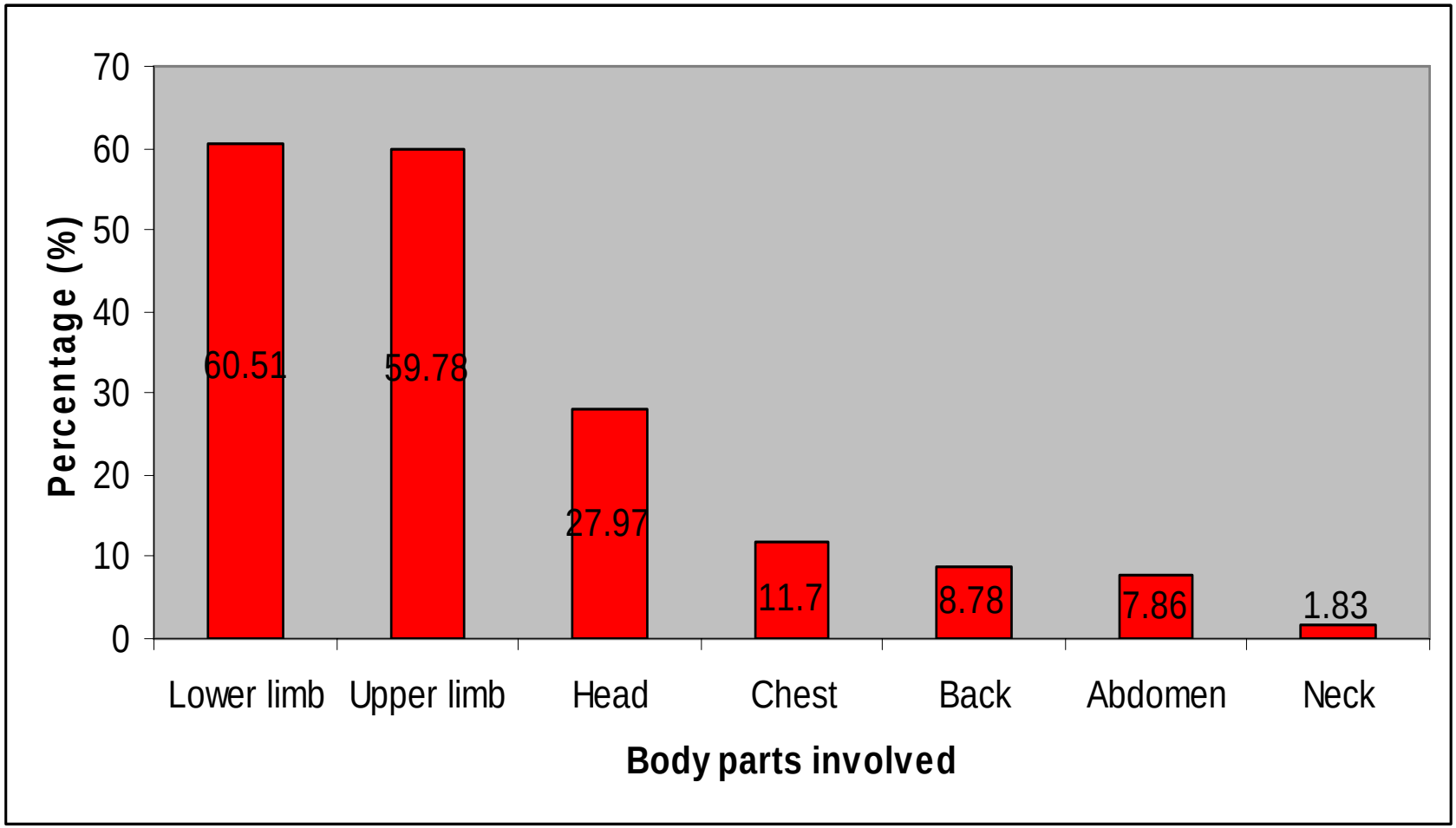


Figure 7: Category of road users among patients who attended Accident & Emergency Unit of Batu Gajah District Hospital from November 2005 to February 2006.

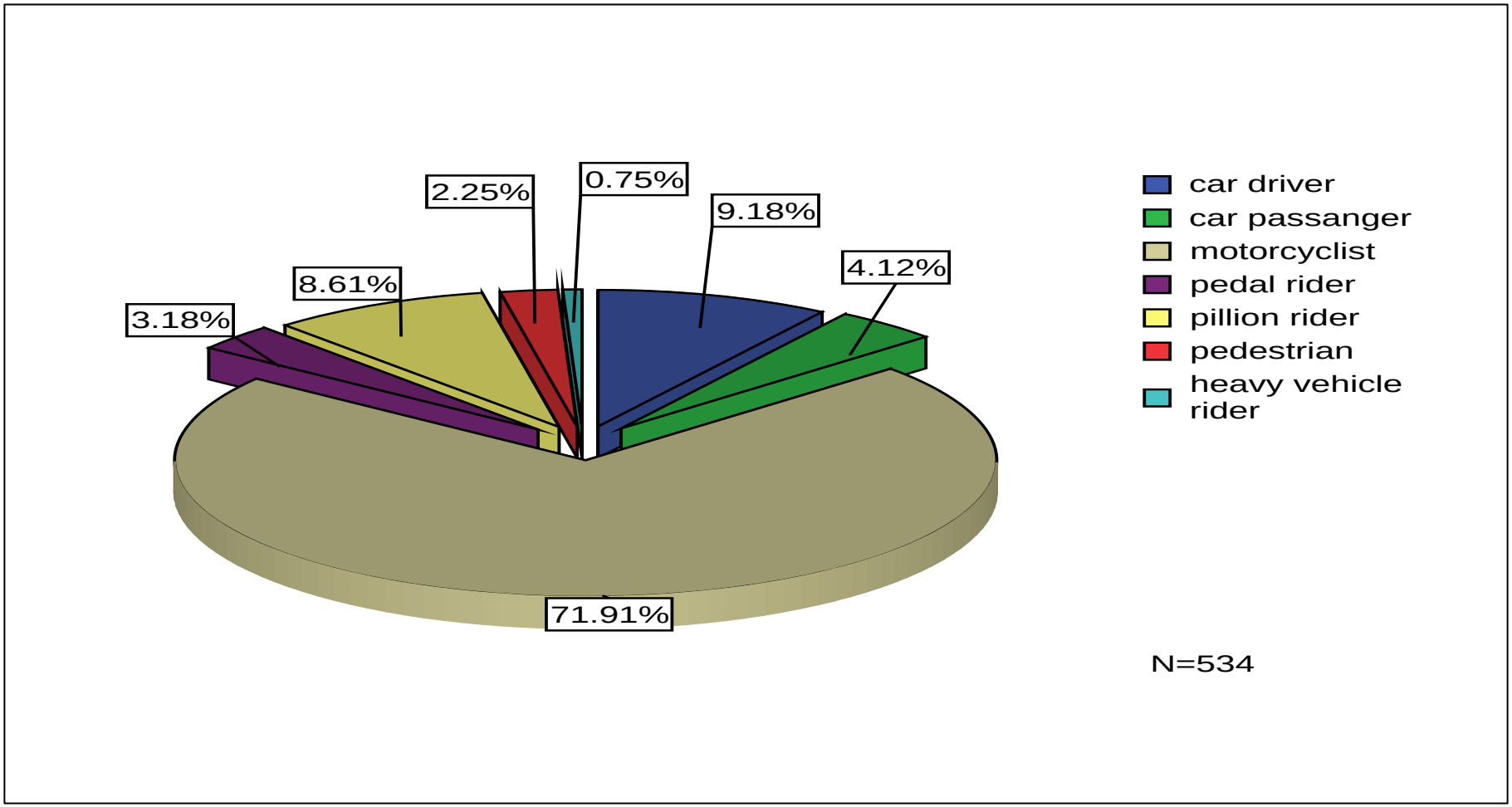


Figure 8: Traffic elements involved in road traffic accidents reported in Accident and Emergency unit of Batu Gajah District Hospital, from November 2005 to February 2006.

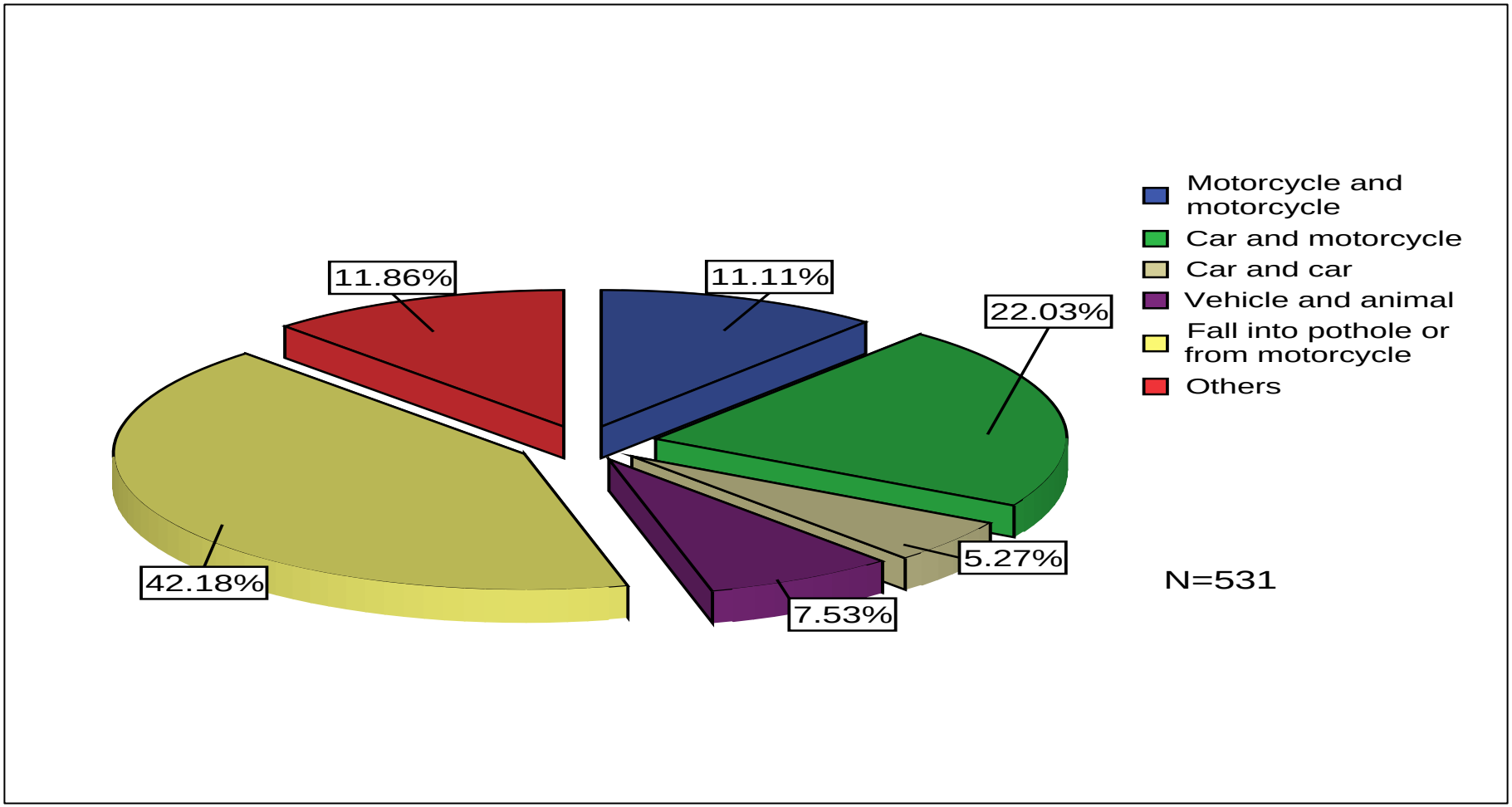


Table 2: Demographic characteristics and outcome

	Outcome		Total (n=547)	p value
	Minor (n=443)	Major (n=104)		
Sex				
Male	352 (80.55%)	85 (19.45%)	437 (100%)	0.0603
Female	91 (82.70%)	19 (17.30%)	110 (100%)	(χ^2 =0.271)
Races				
Malay	239 (82.4%)	51 (17.6%)	290 (100%)	
Chinese	81 (73.6%)	29 (26.4%)	110 (100%)	0.158
Indian	112 (84.2%)	21 (15.8%)	133 (100%)	(χ^2 =5.194)
Others	11 (78.6%)	3 (21.4%)	14 (100%)	
Age Group				
≤ 20	170 (82.9%)	35 (17.1%)	205 (100%)	
>20 and ≤ 40	193 (85.4%)	33 (14.6%)	226 (100%)	0.002*
>40 and ≤ 60	65 (67.7%)	31 (32.3%)	96 (100%)	(χ^2 = 12.156)
>60 and ≤ 80	15 (75.0%)	5 (25.0%)	20 (100%)	

*p< 0.05

Table 3: Outcome of the road traffic accidents by time, road user, traffic elements involved

	Outcome		Total	p value
	Minor	**Major**		
Time (n=547)				
Early morning	29 (80.6%)	7 (19.4%)	36 (100%)	
Morning	126 (80.3%)	31 (19.7%)	157 (100%)	0.722
Afternoon	153 (83.9%)	30 (16.4%)	183 (100%)	($\chi 2$= 1.337)
Night	135 (77.4%)	36 (21.1%)	171 (100%)	
Road user (n=530)				
Car driver and passenger	57 (80.3%)	14 (19.7%)	71 (100%)	
Motorcyclist	309 (80.5%)	75 (19.5%)	384 (100%)	0.861
Pillion rider	36 (78.3%)	10 (21.7%)	46 (100%)	($\chi 2$= 0.751)
Pedestrian and cyclist	25 (86.2%)	4 (13.8%)	29 (100%)	
Traffic elements involved (n=468)				
Motorcycle and motorcycle				
Car and motorcycle	50 (84.7%)	9 (15.3%)	59 (100%)	
Car and car	86 (73.5%)	31 (26.5%)	117 (100%)	0.208
Vehicle and animal	23 (82.1%)	5 (17.9%)	28 (100%)	($\chi 2$= 5.884)
Fall into pothole or Skidding	31 (77.5%)	9 (22.5%)	40 (100%)	
	187 (83.5%)	37 (16.5%)	224 (100%)	

Discussion

- This study showed that road traffic accidents remained as a threat among young generations, particularly among males.
- Our study revealed that males remained the higher gender contributing to a larger proportion of cases compared to females. This observation was explained as males were usually more extrovert in nature, acting as breadwinners in families and the young ones were generally tagged as thrill-seekers.
- In view of the age distribution, about 75% of the cases involved patients within the age group stretching from 15 to 45. This result was also consistent with the study conducted by WHO in 2002 which demonstrated that more than one-half of all road traffic deaths globally occur among people ages 15 to 44.[5]
- This study also showed that older generation was more like to sustain major injuries whenever they were involved in road traffic accidents. Population above the age of 40 had a significantly higher percentage of catching major injuries comparing to the younger ones with the readings of 32.3% and 25% against 17.1% and 14.6% in four of the age groups with 20 years intervals.
- Further analysis of the statistical results revealed that motorcycle (including rider and the pillion sitter) remained the most important contributor to the total cases recorded marking a reading of 80.52%.

Conclusion

- Road traffic accidents remained as a serious public health problem mainly involving the young generation aged from 15 to 45.
- The older age group (>40 years old) was more likely to sustain major injuries as a consequence of road traffic accidents.
- Increase frequency of cases was closely related to people's daily activity.
- A better understanding towards the general problem could be achieved with excellence.

Recommendations

- Target group for relevant authorities if actions were to be taken in order to empower them better awareness of road traffic accidents as well as effective ways towards safer driving.

- Stricter law enforcement or by allocating more officers at high risk areas to allow better traffic flow during traffic congestion.

- Public transport should be given more emphasis to increase the usability

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References

1. Law, T.H., Wong, S.V. and Radin Umar, R.S. *The Malaysian Government's Road Accident Death Reduction Target for Year 2010*. Universiti Putra Malaysia, 2004.

2. Department of Statistics, 2005

3. Department of Statistics Malaysia. Social Statistics Bulletin: Malaysia 2003. December 2003.

4. Jhar N, Agrawal C S. Epidemiological Study of Road Traffic Accident Cases: A Study from Eastern Nepal. Journal Accident Analysis and Prevention, 27(3):325-332

5. Margie Peden, Kara McGee, and G. Sharma, *The Injury Chartbook: A Graphical Overview of the Global Burden of Injuries* (Geneva: WHO, 2002).)

6. Babtie Ross Silcok, *Guidelines for Estimating the Costs of Road Crashes in Developing Countries.* (London: U.K. Department for International Development, 2003).)

7. Injury prevention and control unit, Disease control division, Public Health Department, Ministry of Health Malaysia. Report on epidemiology of injury in Malaysia. December 1997.