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Study of post traumatic stress disorder among survivors of road traffic accident

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Abstract---Introduction: Road traffic accidents (RTAs) are a rapidly growing burden, especially in developing countries, posing a high economic burden on low- and middle-income countries. Over 50 million people worldwide experience trauma through RTA every year, it is the 3rd leading cause of disability. Objectives of our study: The objectives of our study is to estimate the prevalence of PTSD among the survivors of RTA visiting out tertiary care centre. Methodology: Demographic information, accident profile and clinical profile of the subjects included in the study were noted. Diagnosis of PTSD was based on DSM-5 diagnostic criteria for PTSD, it consisted of 20 item self-report measure, each item score ranges from 0 to 4, 0 indicates not at all, 1 indicates little bit, 2 indicates moderately, 3 indicates quite a bit and 4 indicates extremely. The total score is 80 and obtained by summing the scores of the 20 items. A cutoff score >33 was used for the provisional diagnosis of PTSD. Results: Out of the 300 subjects met with RTA, 68 subjects met the criteria of diagnosis of PTSD at 95% Confidence Interval [CI = 22.68 - 28.54], the prevalence was found to be 22.6%. Discussion and Conclusion: We found the prevalence of 22.6% PTSD among RTA survivors. The prevalence of PTSD among RTA survivors varied significantly across studies in relation to the instrument used to assess PTSD, country, race, gender, and education level. The various other factors that account for the differences include poor roads, violation of traffic rules etc.

Keywords---post-traumatic stress disorder, road traffic accident, prevalence, disability, RTA survivors.

Introduction

Road traffic accidents (RTAs) are a rapidly growing burden, especially in developing countries, posing a high economic burden on low- and middle-income countries. Over 50 million people worldwide experience trauma through RTA every year, it is the 3rd leading cause of disability. “Every year, the lives of

approximately 1.35 million people are cut short due to a road traffic crash worldwide. Motor vehicle accidents (MVAs) are now the primary cause of death, mainly among people aged 15–29 years. Furthermore, between 20 and 50 million more people suffer nonfatal injuries, with many incurring a disability as a result of their injury.”¹⁻⁴ Motor vehicle accidents (MVAs) are the leading cause of death and have also been proven debilitating for their survivors. In India, with poor road infrastructure and low maintenance, MVAs are quite apparent. With a significant focus of treatment on physical health, psychological consequences linked to these traumas are often neglected. Accumulated evidence has shown that involvement in RTA may put individuals at increased risk for a wide range of psychiatric disorders, including post-traumatic stress disorder, anxiety and depression.⁴⁻⁶

According to DSM-IV, to be diagnosed with Post-Traumatic Stress Disorder (PTSD), a person must have re-experiencing symptoms (e.g. intrusive memories, nightmares), avoidance (e.g. avoiding reminders of the trauma) and hyperarousal (e.g. insomnia, startle response). Although it can begin right after a traumatic event, it is not diagnosed unless the symptoms last for at least 1 month, and either causes significant distress or interfere with work or home life. The disorder may occur in people of any age who have been exposed to one or more exceptionally threatening or horrifying events. In the adult population, the lifetime prevalence of PTSD found in community-based studies is approximately 8%. Worldwide, PTSD is known as the most frequent mental disorder occurring in the aftermath of traumatic exposure. It refers to deep emotional wounds results from exposure to an overwhelmingly stressful event, such as war, rape, accidents or physical abuse. The epidemiologic research found that a considerable proportion of RTA survivors will develop psychological disorders following a RTA. PTSD is the most common disorder following RTAs. Prevalence rates of PTSD following a RTA vary from 6 to 45% depending on the study. Hence we have taken up this study to estimate the prevalence of PTSD among the survivors of RTA.⁷⁻¹²

Objectives of the study

The objectives of our study is to estimate the prevalence of PSTD among the survivors of RTA visiting out tertiary care centre.

Materials and Methods

Study site: This study was conducted at the Department of Psychiatry.

Study population: Subjects visiting to various departments of OPD of our hospital aged between 20 and 60 years, literate and who survived MVA/RTA at least 1 month to 12 months before data collection were included in the study.

Study design: We conducted a cross-sectional study from January 2020 to December 2020.

Sample size: Sample size was calculated using the formula $n = Z^2P(1-P)/d^2$, we included a total of 300 subjects as per inclusion and exclusion criteria.

Inclusion criteria

We included the subjects who were willing to give voluntary consent, in the age group of 20-60 literate and who survived MVA/RTA at least 1 month to 12 months before data collection years diagnosed with PSTD as per the diagnostic criteria mentioned in the checklist.

Exclusion criteria: we excluded the following subjects with

- Substance intoxication
- Family history of psychiatric illness
- Head injury at the time of RTA
- History of psychiatric illness
- Medical and surgical comorbid conditions

Data collection

Demographic information, accident profile and clinical profile of the subjects included in the study were noted. Diagnosis of PTSD was based on DSM-5 diagnostic criteria for PTSD, it consisted of 20 item self-report measure, each item score ranges from 0 to 4, 0 indicates not at all, 1 indicates little bit, 2 indicates moderately, 3 indicates quite a bit and 4 indicates extremely. The total score is 80 and obtained by summing the scores of the 20 items. A cutoff score >33 was used for the provisional diagnosis of PTSD.

Statistical analysis

Statistical analysis was done using Microsoft Excel spreadsheet, and statistical package for the social sciences (SPSS) version 20.0 software.

Results

We included a total of 300 subjects based on the inclusion criteria and diagnostic criteria of PTSD, in the age group of 20-60 years. Out of 300 subjects 252 were males and 48 were females. Majority of the subjects were in the age group of 25-35 years.

Table 1: Shows the demographic characteristics of RTA survivors of the subjects

Variable	Responses	Number	Frequency
Gender	Male	252	
	Female	48	
Residence	Rural	138	
	Urban	162	
Occupation	Govt employee	56	
	Private employee	59	
	Self employed	34	
	Farmer	49	
	House wife	19	
	Daily worker	30	
	Student	38	
	Unemployed	15	
Type of vehicle	Two-wheeler	60	
	Three-wheeler	30	
	Four-wheeler	40	
	More than 4-	70	

	wheeler		
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It is evident that out of the 300 subjects 252 were males and 48 were females, 138 were from rural and 162 were from urban area, 60 of them met 2-wheeler accident, 30 met with three-wheeler accident, 40 had four-wheeler accident and majority (70) had more than 4-wheeler accident. Out of the 300 subjects met with RTA, 68 subjects met the criteria of diagnosis of PTSD at 95% Confidence Interval [CI = 22.68 - 28.54], the prevalence was found to be 22.6%.

Discussion

The present study aimed to determine the prevalence post-traumatic stress disorder (PTSD) at approximately 12 months in road accident survivors. Results showed that the prevalence of PTSD was 22.6%. The associated factors were female gender, hospitalization of the survivor after the accident, not having returned to work at the 12-month follow-up, and negative impact of the accident on the survivor's income.

The results of our study were similar to the study conducted by by Iteke et al and Yohannes which is 26.7% and 22.8% respectively in road accident survivors. Nevertheless, it is higher than the 12.6% observed by Alenko et al. These authors used another PTSD screening tool, the Trauma Screening Questionnaire (TSQ). In addition, the collection was limited to the group of male drivers of public transport vehicles. In other studies, Bedaso et al and Kim et al found a similarly low prevalence of 15.4% and 5.6% respectively. Although Bedaso et al used the PCLS tool in hospital-recruited road accident survivors, the difference in prevalence may be due to the fact that the assessment was performed within only one month after the road accident. In the Kim et al study, this difference could be related to the tool used for the assessment of PTSD. This tool was the Korean version of the Composite International Diagnostic Interview (K-CIDI 2.1). A WHO survey found a low prevalence of PTSD of 2.5% among survivors of potentially fatal road accidents. The prevalence found in this study is nevertheless lower than that observed in several other studies. This wide variability in PTSD prevalence was found in a meta-analysis conducted by Lin et al who observed prevalence ranging from 6.3% to 58.3%.¹³⁻¹⁸

Some of the studies results have shown that women were at greater risk for PTSD than men. This excess risk for women is consistent in most of the studies found in the literature. However, Sadat et al found no association between PTSD and the gender of survivors. This is explained by Benin context when the patient is a woman, as she plays a central role in the household and society with important responsibilities towards children, husbands and the family in general. Some authors have linked this to women having a lower capacity to cope. Still others have justified it by women adapting poorly, interpreting trauma more negatively than men. Other risk factors identified were hospitalization, not returning to work, and negative economic impact of the accident on income. PTSD is related to a negative economic impact of the traffic accident on the victim is thus verified. Similar results have been found by other authors in survivors with severe initial injuries as well as in hospitalized patients. In addition, some authors had noted

that perceived social deprivation and loss of professional activity due to the accident were risk factors for PTSD.¹⁹⁻²⁰

Conclusion

We found the prevalence of 22.6% PTSD among RTA survivors. The prevalence of PTSD among RTA survivors varied significantly across studies in relation to the instrument used to assess PTSD, country, race, gender, and education level. The various other factors that account for the differences include poor roads, violation of traffic rules etc.

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