

# An Exploratory Study on Quality of Life among Road Traffic Accident Victims in India

Lalithambigai Chellamuthu<sup>1\*</sup>, Devi Kittu<sup>2</sup>, Yogesh Bahurupi<sup>3</sup>, Kavita Vasudevan<sup>3</sup>

<sup>1</sup>Department of Community Medicine, Mahatma Gandhi Medical College and Research Institute, Puducherry, Tamil Nadu, India.

<sup>2</sup>Department of Community & Family Medicine, All India Institute of Medical Sciences Rishikesh, Uttarakhand, India.

<sup>3</sup>Department of Community Medicine, Indira Gandhi Medical College and Research Institute, Puducherry, Tamil Nadu, India.

## Abstract

**Background:** Road traffic accidents are India's sixth leading cause of mortality, with a substantial share of physical, psychosocial and economic losses in the productive age group.

**Objectives:** To explore the victims' and stakeholders' perceptions on quality of life among road traffic accident victims in India.

**Methods:** A qualitative study incorporating in-depth interviews among road traffic accident victims and key informant interviews among stakeholders was conducted from June to August 2019 (3 months) in Puducherry. Participants were selected using purposive sampling. Data was collected till the point of saturation with a semi-structured interview guide through six in-depth interviews among accident victims and six key informant interviews among stakeholders. Content analysis of the data was performed, and a conceptual framework was developed. Written informed consent from each participant was sought. Ethical clearance was obtained from the Institute Ethics Committee.

**Results:** Four themes were identified: reasons for road traffic accidents, problems faced by the victims, problems faced by the caretaker or family member, and preventive measures for road traffic injuries.

**Conclusion:** Physical, psychological, and financial problems were encountered by the victims, caretakers, and family members after a major road traffic accident. Accident victims felt that support from family members was indispensable in returning to normal life.

**Keywords:** Humans, Accidents, Traffic, Quality of Life, Surveys and Questionnaires, Family, Informed Consent.

## INTRODUCTION

According to World Health Organization (WHO), road traffic accidents are India's sixth leading cause of mortality, with a substantial share of physical, psychosocial and economic losses in the productive age group. Road traffic injuries also place a prodigious burden on the health sector with regard to pre-hospital stabilization, acute care, and long-term rehabilitation.<sup>[1]</sup> Annually, the national level economic repercussions due to road traffic accidents in the South Asian region ranges from 1.3 to 3.0% of gross domestic product (GDP).<sup>[2]</sup> A few studies revealed that in predominantly households with road traffic accidents, there was a decline in income and food consumption while an increase in indebtedness.<sup>[3,4]</sup> Some studies had also reported the loss of work for the road traffic accident victim

and their caretakers.<sup>[5,6]</sup> South Asian region contributes to one-fifth of the road traffic deaths worldwide.<sup>[2]</sup> By 2020, road traffic accidents are estimated to be the third leading cause of disability.<sup>[1]</sup> Impact on non-fatal accident victims' quality of life includes emotional, social, and physical well-being following the injury.<sup>[7,8]</sup> Considering this view, the present study explored the victims' and stakeholders' perceptions on quality of life among road traffic accident victims in India.

**Address for correspondence:** Lalithambigai Chellamuthu

Department of Community Medicine,  
Mahatma Gandhi Medical College and Research Institute, Puducherry, Tamil Nadu, India.  
E-mail: lalli.muthu@gmail.com

## Access this article online

Quick Response Code



Website:

www.iapsmupuk.org

DOI:

10.47203/IJCH.2023.v35i01.011

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**How to cite this article:** Chellamuthu L, Kittu D, Bahurupi Y, Vasudevan K. An Exploratory Study on Quality of Life among Road Traffic Accident Victims in India. *Indian J. of Com. Health.* 2023;35(1):60-65.

**Received:** 10-10-2022, **Accepted:** 15-02-2023, **Published:** 31-03-2023

Table 1: Content analysis of in-depth and key informant interviews among accident victims and stakeholders

Themes	Categories	Codes
Reasons for road traffic accidents	Administrative faults	No proper signage Road conditions Improper parking facilities Managing tourism
	General public attitude	Violation of traffic rules Negligence Drunken drive
	Physical problems	Difficulty in daily activities Dependency Poor outcome
Problems faced by victims after a road traffic accident	Psychological problems	Depression
	Financial problems	Debts No savings/ insurances Out-of-pocket expenditure
	Physical problems	Overburden
Problems faced by Caretakers/family members after a road traffic accident	Psychological problems	Depression
	Financial problems	Debts Compromise at work Unaware of insurances
	Administrative measures	Health education Multi-sectoral coordination Raise the penalties Removal of encroachments Regular certification of drivers and vehicles
Preventive measures for a road traffic accident	Administrative measures	Adherence to traffic rules Attitude change
	Public measures	

## METHODOLOGY

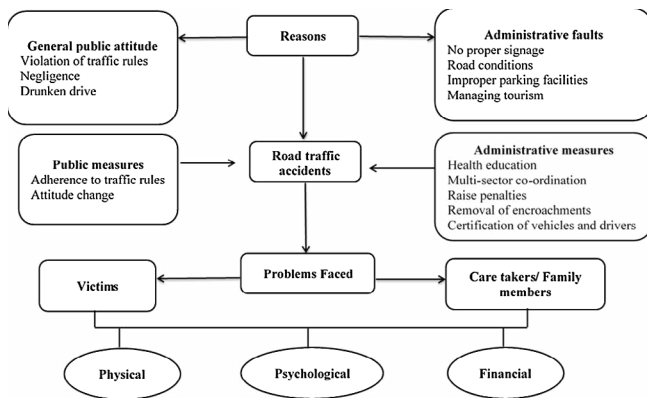
A qualitative study incorporating in-depth interviews among road traffic accident victims and key informant interviews among stakeholders was conducted from June to August 2019 (3 months) in Lawspet, one of the most densely populated urban constituencies in the Puducherry district.<sup>[9]</sup>

In this study, an adult was defined as an individual who had completed 18 years of age.<sup>[10]</sup> Operational definition of road traffic accident was contemplated as “an accident which occurred or originated on a way or street open to public traffic; resulted in one or more persons being injured, and at least one moving vehicle was involved.”<sup>[11]</sup> As per World Health Organization (WHO), simple injuries and serious injuries have a recall period of 3 and 12 months, respectively.<sup>[12]</sup> Therefore, the inclusion criteria for study participants were adults residing in Lawspet who met with a road traffic accident (as per operational definition) within 12 months from the day of the interview. Death due to road traffic crashes, repeat accidents to the same individual in the past 12 months, victim not giving consent for the study were all excluded. In this study, stakeholders refer to individuals who would share their acquired knowledge, experiences, and opinions pertaining to the topic of interest.

This exploratory study was based on the phenomenology approach in qualitative research. Criterion type of purposive sampling was employed to choose the road traffic accident

victims and stakeholders who were willing to talk freely and spontaneously for in-depth and key informant interviews, respectively. The researcher was trained and certified in conducting qualitative research. All interviews were conducted at a place where the accident victims and stakeholders were comfortable without any intimidation by his/her family members or other persons. Each interview lasted for 30 to 45 minutes, documented with field notes and audio recorded. The field notes and transcripts were returned to the participants for comments or modifications.<sup>[13]</sup> A semi-structured, pilot-tested interview guide was used for in-depth interviews. An interview guide based upon the findings of in-depth interviews was employed for key informant interviews. The information was obtained until saturation through six in-depth interviews among accident victims and six key informant interviews among stakeholders. A total of 12 interviews were conducted to collect data among participants till the point of saturation (that was no new information obtained after the 12 interviews)

All interviews transcripts were translated from local language (Tamil) to English by the researcher, verified by an independent individual oriented with Tamil to English translation. Data was analyzed according to stages suggested by Graneheim and Lundman.<sup>[14]</sup> After each interview, the content was transcribed, typed and read several times to extract initial codes. Then, similar codes were grouped to



**Figure 1:** Conceptual framework of victims' and stakeholders' perception on economic burden and quality of life

form categories, following which hidden concepts and data content were extracted to build a conceptual framework Figure 1.

Ethical clearance for this study was obtained from the Institutional Ethics Committee. Written informed consent from each participant was sought. (Ref. 17/IEC/IGMC/F-2017 dated: 21-11-20217)

## RESULTS

The saturation point was attained through six in-depth interviews among accident victims, including five males and one female. Key informant interviews were conducted till the point of saturation among the following six stakeholders: a caretaker of the accident victim, a family member of the accident victim, a Medical Officer from the primary health center of the study area, an ANM serving the study area, a

nearby tertiary level hospital's trauma care head, an in-charge of the traffic police department of the study area.

The themes for the study were formed using five stages: familiarization, identifying a thematic framework, indexing, charting, mapping and interpretation.<sup>[15]</sup> The following four themes were identified from the content analysis of in-depth and key informant interviews among accident victims and stakeholders, respectively: reasons for road traffic accidents, problems faced by the victims, problems faced by the caretaker or family member and preventive measures for road traffic injuries (Table 1).

### Perceived Reasons for Road Traffic Accidents

According to the study participants, road traffic injuries have risen, especially during night and peak hours due to poor road signage systems, bad road conditions worsening with climatic changes, improper parking facilities for vehicles, and lack of tourists crowd management. A 50-year-old male victim shared his experience that “... *I fell down while going in a two-wheeler near that junction.... As it was night time I couldn't see the two-wheeler which came on the opposite side without a headlight.... The main problem is no street lights in those areas, no road reflectors and no boards showing directions properly...*”

The tertiary level hospital's trauma care unit head, a 40-year-old male doctor mentioned, “...*reasons like very bad conditions of the roads, it has to be maintained by the concerned authority right after the rainy season and as well as take precautions start of rainy season...*” The traffic police department head, a 41-year-old male, reported that “...*You would have seen the weekend here. People from Chennai,*

**Table 2:** Perceived problems faced by victims after a road traffic accident

Codes	Statements
Difficulty in daily activities	<i>I had to depend on my wife and children for almost everything in a day. Sometimes, I would feel useless depending on another person for anything and everything.</i> A 50-year-old RTA victim
Dependency	Neighbors would sometimes help in taking care of him in my absence. He had to depend on the children or me for even small things, which made him sad many times. A 36-year-old care-taker
Poor treatment outcome	One note-worthy action taken by the current government is granting Rs.5000 when a person helps a victim get admitted to a hospital. This initiative would encourage the public to help victims, and thereby we could reduce the transport time and improve the patient's outcome. A 29-year-old male doctor (Medical Officer)
Depression	<i>I would feel useless depending on another person for anything and everything.</i> A 50-year-old RTA victim
Debts	I work on a daily basis. But after that accident, I couldn't work for almost 15days. We had to borrow a huge amount of money as we didn't have my wages. A 37-year-old RTA victim
No savings/ insurances	Still, many people are not aware of health insurance, which could help them during a crisis or protect them from financial burden during emergencies. Awareness should be created among people about the importance of health insurance. Trauma care unit head
Out-of-pocket expenditure	My husband had to borrow money for his treatment, operation, and hospital admissions. He preferred private hospitals as operations are done immediately, and relatives also suggested going for private hospitals. A 36-year-old care-taker

**Table 3:** Perceived problems faced by caretakers and family members

Codes	Statements
Overburden	I was fortunate enough to have my family's support and got recovered madam. But I used to feel that I am overburdening as I had to depend on them for every small work. A 50-year-old RTA victim
Depression	Not only the patients but also the family members and care takers would suffer after a major accident A 34-year-old ANM Not only the victims but also their care takers would be affected emotionally as well as economically. A 41-year-old traffic police
Loss of wages	patients lose their wages during the hospital stay and at home stay till they get fit to resume their routine. A 29-year-old male doctor (Medical officer)
Compromise at work	I had taken permissions, leaves to take care of him every day A 36-year-old care-taker The care taker being his/her family member if they are working, will also have to apply for leave to take care of the patient A 29-year-old male doctor (Medical officer)

Bangalore, Hyderabad, Kerala hail here like the honey bee. But our roads are narrow to manage such crowds and the public parking for vehicles is haphazardly creating more traffic..." A 42-year-old female traffic accident victim also said, "...Weekends here have become so crowded because of tourists and accidents are prone to happen in holidays due to the crowding and drunken driving..."

Violation of traffic rules by the public, negligence of the people and drunken driving were other perceived reasons for accidents. A 29-year-old male medical officer at Primary Health Center expressed with grief that "...We receive many cases during festivals, holidays, weekends and mostly many reported as drunken driving on those days..."

### Perceived Problems Faced by Victims After a Road Traffic Accident

Difficulty in carrying out daily routine; being dependent on others for most activities; the poor treatment outcome; mental health problems such as depression, post-traumatic stress disorder, feeling worthless; economic burden like debts and loss of wages were the perceived problems faced by accident victims.

### Perceived Problems Faced by Caretakers and Family Members

The problems faced by the family members and caretakers were overburdening of work in the house, depression and irritability, loss of wages and compromise at the workplace.

### Perceived Preventive Measures for Road Traffic Accidents

Health education as well as measures to change the attitude of the public for following traffic rules; multi-sector coordination; raise of penalties for not abiding traffic rules; removal of road side shops encroaching the roads; periodic and regular certification of vehicles & drivers were the perceived preventive measures for road traffic accidents. The police person highlighted that "... people's mentality should be changed. They should become responsible and more

awareness generation activities among people should be done..." ANM servicing the study population suggested that "...Youth clubs and NGOs should be involved in IEC activities about traffic rules..." The trauma care head recommended that "... Already they have increased the fine from Rs.2000 to Rs.10,000 for drunken driving. Likewise, other fines should also be raised to decrease the rules violation..." Traffic police insisted that "... these shops encroaching the roads should be removed for channeling the parking facilities of vehicles in main roads... Drivers should undergo a regular physical examination and should be issued a physical fitness certificate..."

## DISCUSSION

Physical, psychological and financial problems were the main consequences that victims, caretakers, and family members encountered after a major road traffic accident. The present study reflected that "supportive needs" (support from family members) was indispensable in returning to normal life. "Supportive needs" could be in different dimensions, such as treatment support, financial support and social support. Similar findings were reported from a qualitative study performed among accident victims in Sweden on the road traffic accident's health-related consequences.

The results were grouped into physical consequences, psychological consequences, everyday life consequences, and financial consequences. Besides, reported psychological and everyday life consequences following an accident showed substantial differences based on gender.<sup>[7]</sup> Another exploratory study by Wang CH *et al.*, from China suggested that road traffic accidents impacted victims' psychosocial well-being beyond physical consequences, which correlates with the present study findings.<sup>[16]</sup>

The study's accident victims opened up about their daily routine limitations, and dependency on others for everyday activities. Psychological and financial aspects such as depression, loss of wages, debts were also the concerns of accident victims after a major road traffic accident. A study with concurrent findings was conducted by Barnes J *et al.*, in

the United Kingdom on quality-of-life outcomes among road traffic accident victims, which concluded that road traffic accidents had an impact on everyday activities. Moreover, females appeared to exhibit psychological disturbances than males. The societal burden of accidents was perhaps high using QALYs. The return to work rate was 90%, but occupation type had an influence on the rate.<sup>[17]</sup>

An akin study from Australia on the economic burden faced by victims of serious injuries in road traffic crashes reported key themes such as financial impacts, out-of-pocket expenses, return to work. The study also described the perceived key factors in reducing injured persons' financial burden like accident compensation schemes & income protection policies, supportive employers, and return to work programs.<sup>[18]</sup> The present study showed that accident victims felt that family members' support was inevitable in returning to normal life. Supportive needs could be in different dimensions, such as treatment, financial, and social support. These findings resonate with the findings of an Iranian study among 18 road traffic accident patients with disabilities.<sup>[19]</sup>

In this study, drunken driving had emerged to be one of the reasons for road traffic accidents. This finding was parallel with qualitative research from England among road traffic accident victims.<sup>[20]</sup>

Under the theme "problems faced by accident victims" in this study, one of the codes was "the poor treatment outcome", which was dependent on delay in first aid, delay in transporting the victim to an appropriate health care facility, lack of trained pre-trauma health care workers. Similarly, a study from Nepal described the findings of key informant interviews under two themes current facilities and practices for post-crash response and reasons of delay in post-crash response.<sup>[21]</sup>

A qualitative study from Ghana among accident victims came out with reasons for not reporting accidents, non-adherence to traffic rules and factors accountable for accident victims' social costs, which were similar to the present study findings.<sup>[22]</sup>

The economic burden and improvement in the quality of life following a road traffic accident mainly depends on the severity of the injury and existing "supportive needs," which could be treatment support, financial support and social support from the family members.

Road traffic accidents prevention and reduction need inter-sectoral coordination. It is pertinent to intensify traffic rules enforcement and intensify awareness programs regarding traffic safety. The pre-hospital trauma care and the first-aid facility should be strengthened to minimize accident victims' transportation time, which will eventually impact the treatment outcome. Every district should have a trauma care center. All government health facilities, including the primary health centers, should be well-equipped regarding drugs, supplies, and diagnostics to curtail OOP (Out-of-pocket) expenditure.

This study's strength lies in the fact that it stands among the few community-based studies in India that explored the perception of accident victims and stakeholders to get a clear cognizance about the economic burden to the households and improvement in quality-of-life following road traffic accidents.

This study's possible limitation could be that in-depth interviews were not conducted until the point of saturation among each gender to understand victims' perception on the financial burden and improvement in quality of life following road traffic accidents.

## FINANCIAL SUPPORT AND SPONSORSHIP

Nil.

## CONFLICTS OF INTEREST

There are no conflicts of interest.

## REFERENCES

1. Peden M, Scurfield R, Sleet D, Hyder AA, Mathers C, Jarawan E, et al. World Report on Road Traffic Injury Prevention. World Health Organization;2004. [internet]; (accessed 11 January 2021). Available from [http://www.who.int/violence\\_injury\\_prevention](http://www.who.int/violence_injury_prevention).
2. Alam K, Mahal A. The Economic Burden of Road Traffic Injuries on Households in South Asia. Nugent RA, editor. PLOS ONE.2016;11(10):e0164362.
3. Aeron-Thomas A, Jacobs DGD, Sexton MB, Gururaj DG, Rahman DF. The involvement and impact of road crashes on the poor: Bangladesh and India case studies.2004;42.
4. Silcock R. Guidelines for estimating the cost of road crashes in developing countries. London: Department for International Development.2003.
5. Razzak JA, Bhatti JA, Ali M, Khan UR, Jooma R. Average out-of-pocket healthcare and work-loss costs of traffic injuries in Karachi, Pakistan. Int J Inj Contr Saf Promot.2011;18(3):199–204.
6. Nithershini P, Dharmaratne S, Nugegoda D, Østbye T, Lynch C. The incidence of road traffic injuries in Kandy, Sri Lanka. Inj Prev.2012;18(1):A213.1-A213.
7. Hasselberg M, Kirsebom M, Bäckström J, Berg H-Y, Rissanen R. I did NOT feel like this at all before the accident: do men and women report different health and life consequences of a road traffic injury? Inj Prev.2019;25(4):307–12.
8. Paiva L, Alcalá Pompeo D, Aparecida Ciol M, Oliveira Arduini G, Spadoti Dantas RA, Venâncio de Senne EC, et al. Health status and the return to work after traffic accidents. Rev Bras Enferm.2016;69(3).
9. District census handbook of Puducherry [Internet]. Directorate of census operations, Puducherry UT, Ministry of home affairs; 2011 [cited 2021 January 11]. Available from: [https://censusindia.gov.in/2011census/dchb/3402\\_PART\\_B\\_DCHB\\_PUDUCHERRY.pdf](https://censusindia.gov.in/2011census/dchb/3402_PART_B_DCHB_PUDUCHERRY.pdf)
10. Government of India. The Indian Majority Act, 1875 [Internet]. [cited 2021 Jan 11]. Available from: <https://indiankanoon.org/doc/80664820/>
11. OECD health statistics 2017 definition, sources and methods

- on injuries in road traffic accidents [Internet]. [cited 2021 January 11]. Available from: <https://www.coursehero.com/file/24146792/HEALTH-STAT-12-Injuries-in-road-traffic-accidentspdf/>
12. McGee K, Sethi D, Peden M, Habibula S. Guidelines for conducting community surveys on injuries and violence. *Inj Control Saf Promot.*2004;11(4):303–6.
  13. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care.* 2007;19(6):349–57.
  14. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse education today.*2004;24(2):105-12.
  15. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. *Qual Res Companion.*2002;573(2002):305–29.
  16. WC Tsay SL, Elaine Bond A. Post-traumatic stress disorder, depression, anxiety and quality of life in patients with traffic-related injuries. *J Adv Nurs.*2005;51(1):22–30.
  17. Barnes J, Thomas P. Quality of Life Outcomes in a Hospitalized Sample of Road Users Involved in Crashes. *Annu Proc Assoc Adv Automot Med.*2006;50:253–68.
  18. Gabbe BJ, Sloney JS, Gosling CM, Wilson K, Sutherland A, Hart M. Financial and employment impacts of serious injury: a qualitative study. *Injury.*2014;45(9):1445–51.
  19. Sabet FP, Tabrizi KN, Khankeh HR, Saadat S, Abedi HA, Bastami A. Road Traffic Accident Victims' Experiences of Return to Normal Life: A Qualitative Study. *Iranian Red Crescent medical journal.*2016;18(4):e29548.
  20. Pilkington P, Bird E, Gray S, Towner E, Weld S, McKibben MA. Understanding the social context of fatal road traffic collisions among young people: a qualitative analysis of narrative text in coroners' records. *BMC public health.*2014;14(1):78.
  21. Choulagai B, Ling H, Sharma P, Mishra SR, Ahmed M, Chand PB. Epidemiology of road traffic accidents in Nepal: data review and qualitative analysis. *SM J Public Health Epidemiol.*2015;1(3):1014.
  22. Kudebong M, Wurapa F, Nonvignon J, Norman I, Awoonor-Williams JK, Aikins M. Economic burden of motorcycle accidents in Northern Ghana. *Ghana medical journal.*2011;45(4).135-42