BARRIERS AND FACILITATORS OF COMMUNITY-BASED FIRST RESPONDERS IN PROVIDING FIRST AID TO THE POST-CRASH VICTIMS IN THE ROAD ACCIDENT BLACKSPOTS OF ALAPPUZHA DISTRICT, KERALA.

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DECLARATION

I hereby declare that this dissertation titled “Barriers and Facilitators of Community First Responders in Providing First Aid to the Post-Crash Victims in the road accident blackspots of Alappuzha District, Kerala” is the bonafide record of my original research. It has not been submitted to any other University or Institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

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CERTIFICATE

Certified that the dissertation titled “Barriers and Facilitators of Community First Responders in Providing First Aid to the Post-Crash Victims in the Road Accident Blackspots of Alappuzha District, Kerala” is a record of the research work undertaken by Dileep Kumar S R in partial fulfilment of the requirements for the award of the degree of Master of Public Health under my guidance and supervision.

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GLOSSARY OF ABBREVIATIONS

RTA	Road Traffic Accidents
RTI	Road Traffic Injuries
VRU	Vulnerable Road Users
WHO	World Health Organization
NATPAC	National Transportation Planning and Research Centre
NH	National Highway
SH	State Highway
BLS	Basic Life Support
ALS	Advanced Life Support
EMR	Emergency Medical Support
MVD	Motor Vehicle Department
CI	Confidence Interval
OR	Odds Ratio
COR	Crude Odds Ratio
AOR	Adjusted Odds Ratio
PI	Principal Investigator
IEC	Institutional Ethics Committee
SCRB	State Crime Records Bureau

ABSTRACT

Background:

Road traffic accidents (RTAs) are one of the major public health concerns, with 90% of fatalities in low- and middle-income countries. Two-thirds of deaths from RTAs are among those aged 18-59, impacting health, social well-being, and economies. Immediate prehospital care and first aid by potential first responders are pivotal in improving survival rates for RTA victims. Understanding the barriers and facilitators faced by potential first responders is crucial for adequate emergency support and first aid.

Methodology:

A cross-sectional study was done among 358 potential first responders across 35 high-risk road accident blackspots in the Alappuzha District. The data collection was done using an interview schedule. The interview schedule included questions related to sociodemographic characteristics, knowledge, and practices on first aid and emergency care. The collected data was subsequently analyzed using IBM SPSS Statistics 28 for Windows.

Result:

All study participants were men with a mean age of 48 years. Out of the 358 study participants, 273(76%) were autorickshaw drivers, 18(5%) were taxi drivers, and 67(19%) were engaged as shopkeepers or shop workers. Most participants (62.57%) had at least secondary education. Emergency support and First aid in road crash injuries were associated with training in First aid and knowledge of First aid and emergency support. Emergency assistance was found to be strongly associated with composite knowledge of first aid and emergency support (adj. OR: 3.75, 95% CI: 1.829 to 7.672). Additionally, composite knowledge of first aid and emergency support was associated with first aid training (adj. OR: 3.80, 95% CI: 2.282 to 6.332).

Conclusion:

The present study revealed that composite knowledge of first aid and emergency support was associated with providing first aid and emergency support to victims of road traffic accidents. The study also highlights the importance of first aid training and awareness of first aid in rendering emergency support during RTAs by the potential first responders.

CHAPTER-1

1. INTRODUCTION

1.1 Background:

Road traffic accidents (RTAs) are one of the major public health challenges that necessitate urgent and coordinated action. Because of the rising frequency of these incidents and the global increase in vehicles, road traffic accidents are progressively turning into public health emergencies. Road traffic injuries (RTI) rank ninth in 2004 and rank fifth in 2030, with a projected 2.4 million fatalities yearly, positioning it among the leading causes of death **(Hyder AA, Puvanachandra P, Allen KA, 2013).** The World Bank estimates that, in addition to their potential economic benefits, reducing road accidents requires worldwide attention to develop human capital, which is one of their top priorities. According to the analysis, reducing the number of road traffic accidents by half in certain countries may have an impact in the GDP per capita to the tune of 7 to 22 percent over 24 years. This would translate to six times the welfare benefit amount **(The World Bank, 2021).**

Global scenario

Road Traffic Accidents (RTAs) significantly contribute to death and disease rates, mainly due to the growing number of automobiles, lifestyle alterations, and the propensity for risk-taking among the public. The majority of RTA fatalities involve "vulnerable road users," such as bicyclists, motorcyclists, and pedestrians. Due to the increased diversity and magnitude of traffic, this is particularly prevalent in low- and middle-income nations. Several studies have shown that different demographics of road users, as well as road users in nations with different wealth levels, have significantly different fatality rates. Even in wealthy nations, those from lower socioeconomic backgrounds or who reside in economically disadvantaged regions are

more likely to be involved in a traffic accident and suffer fatalities or serious injuries as a consequence (**Margie Peden, Richard Scurfield, et al., 2004).**

Annually, over 1.24 million deaths are happening out of road accidents worldwide. These incidents result in the injuries or impairments of an extra 20-50 million people. Public safety in low- and middle-income countries (LMICs) is gravely endangered by traffic accidents. Despite just 54% of all registered automobiles worldwide, LMICs contribute to 92% of road traffic fatalities and nearly 97% of all accidents involving vehicles. The fact that a road-related incident claims a life in a low-income country (LMIC) every six minutes is a frightening reality **(International Federation of the Red Cross and Red Crescent Societies (IFRC)Geneva, 2023).** Moreover, many of those who die from road crash injuries are aged 15-44 years and are the most productive members of society (**Geneva,World Health Organization, 2002).**

There are three peaks of death after trauma. The first peak happens very quickly, within seconds or minutes. It is usually caused by severe damage to the brain, heart, or major blood vessels. These injuries are complex to treat and often fatal. The second peak happens within hours. It is caused by various injuries such as bleeding in the brain, collapsed lung, ruptured spleen, broken bones, and blood loss. These injuries can be life-threatening, but they can be prevented or treated if the patients receive prompt and proper care. The third peak is from late deaths, within days to a week after injury, typically due to multi-organ failure, and optimal early management may reduce the late deaths. The early management of trauma is based on triaging crash victims and top-priority care is offered to those who have problems with their airway, breathing, or circulation. The first hour after trauma is crucial for saving lives. It is called the “golden hour” **(Di Bartolomeo et al., 2007)**. The airway is the most important thing to secure. No other treatment or evaluation should be done before the airway is clear. Prehospital care is crucial for the early resuscitation of trauma patients. However, in India, prehospital care is almost absent. There is a pressing need to train paramedics in trauma care to reduce the death and disability caused by trauma **(Abhilash and**

Sivanandan, 2020). In addition to causing significant distress, traffic accidents have an extensive public health burden with substantial financial repercussions. These expenses affect not just the individuals who suffer, but also their families and entire countries. Surprisingly, traffic accidents cause up to 3% of GDP losses in certain nations(**Geneva, World Health Organization, 2015).** Prehospital care is highly essential for improving the outcomes of road crash victims. But this service is poor in developing countries (**Geneva,World Health Organization., 2009**) The World Health Organisation documents that up to 500,000 traffic deaths could be avoided every year if the death rates from severe injuries in countries with low- and middle-income are reduced **(Geneva, World Health Organization, 2018)**.The "UN General Assembly" officially declared the "Decade of Action for Road Safety" 2021–2030 in September 2020. The bold goal is to prevent at least half of all road deaths and injuries by 2030 **(Geneva,World Health Organization, 2023).**

Indian Scenario

India has ~1% of global vehicles, although it accounts for 6% of Global **RTIs (Ministry of Road Transport and Highways, 2022).** With more than 400 road crash deaths each day, India is among the top-ranked countries regarding deaths due to RTIs **(Geneva: World Health Organization, 2018)**.One of India's most serious problems appears to be inadequate prehospital treatment, especially in rural areas where transportation and institutional trauma care are delayed. On Indian roadways, there have been 1.3 million (13 lakh) fatalities and 5 million (50 lakh) injuries in the past ten years (**Ministry of Road Transport and Highways, 2018).**

Compared to high-income countries, the rate of road crash fatalities in low-income countries is three times higher (**The World Bank, 2021**). In India, the situation is especially alarming that every minute, there is a road accident, and every four minutes, there is a road accident death. Along with the emotional trauma of losing a loved one, the death or incapacity of the family's primary breadwinner or head of the household can have detrimental impacts on the family, resulting in lowered living standards and poverty (Sharma et al., 2023). Road accidents happen

more often in cities than in villages **(International Federation of the Red Cross and Red Crescent Societies (IFRC)Geneva, 2023).** It is anticipated that motor vehicle crash patterns will differ to a larger extent between rural and urban areas, mainly due to the traffic conditions prevailing within the district and on highways. Pedestrians were commonly hit by heavy vehicles like buses, lorries, and trucks (61%), followed by motor cars (16%) and two-wheelers (14%) in fatal crashes. A study conducted in south India found that 46% of road traffic fatalities died at the crash site within minutes after the crash, and 17% died on the way to hospital. Nearly one-third died in the hospital, either at the first contact hospital or in the definitive hospital (Gururaj et al., 2016)**.** According to figures reported for 2021, there were 153,972 road accident-related deaths in India. Surprisingly, for the fourth year running, most of these unfortunate events have involved young people in the productive age group. A total of 84.5% of traffic accident deaths were working-age adults, specifically those between the ages of 18 and 60. Statistics show that motorbikes or scooters are involved in 60.2% of accidents in India (**Ministry of Road Transport and Highways, 2022).**

Trauma care in India is still an evolving urban phenomenon. Lack of first aid, delay in transport, late arrivals to a definitive hospital, a greater number of referrals, absence of triage, human resource constraints, infrastructure deficiencies, and rising cost of care are a few of the contributing factors to deaths and poor trauma outcomes in India and other LMICs. Nearly two out of three deaths occur during the transportation of the injured to the health facility or in the hospital, indicating the criticality of organizing efficient pre-hospital and acute trauma care in rural areas **(Gururaj, 2008; Gururaj et al., 2016; Joshipura et al., 2003; Margie Peden, Richard Scurfield, et al., 2004; Pallavisarji et al., 2013**). It was observed that RTIs in both urban and rural settings impacted young men. Only 20% of participants received first aid, and a similar percentage made it to the institution before the golden hour **(Sharma et al., 2023).** According to research, bystanders in India are hesitant to provide medical aid for various reasons, including

a lack of training, ignorance, the assumption that other onlookers will step in, concerns about providing substandard treatment, and the possibility of contracting an infection **(Bhalla et al., 2019).**

Kerala Scenario

After Tamil Nadu and Maharashtra, Kerala became India's third most accident-prone state in 2023, accounted a 9.6 percent increase in the number of traffic events. In the year 2022, road safety experts estimate an average of twelve deaths caused by traffic accidents in the state of Kerala with an average of five motor vehicle crashes hourly. Not only did the number of accidents rise by 32% in 2022 compared to the previous year, but the number of fatalities caused by these accidents also increased by 24%. An analysis was conducted on road accident data stretching from 2018 to 2022 in a recent study, emphasizing the significant scale of the issue. During this period, Kerala experienced an exceptional 186,375 traffic incidents, which led to 2,11,534 injuries and 19,460 fatalities. It is very distressing that one or several individuals die in every ten traffic collisions. Moreover, those in the age group of 18 to 45, who are most susceptible, constituted over 60.5% of all fatalities resulting from accidents (**A P Shojan, 2023).**

As per the data published by the Police Department (State Crime Records Bureau, Government of Kerala, 2023), during the year 2022, there were 43910 road accidents in Kerala. 49307 people were injured overall, and 4317 people died because of RTAs in the State. The Alappuzha district, which only encompasses 3.6% of the state's total area, accounts for 8% of all traffic accident fatalities. There were 3422 motor vehicle crashes during 2021-22, resulting in 3616 injuries and 320 deaths. As per the latest NATPAC statistics (2022), 35 of the 238 accident-prone Blackspots in the State are in the Alappuzha District. In total, there are 35 black spots; 33 are on national highways and have remained thus since 2012 **(State Crime Records Bureau, Government of Kerala, 2023).**

1.2 Review of Literature

The literature review was completed by performing a comprehensive search using the keywords "community-based first responders," "first responders," "prehospital care," and "road traffic injuries" on PubMed and Google Scholar. We looked for relevant records on the World Health Organization's official website, the Ministry of Road Transport and Highways (**MoRTH**), and the State Police Department.

Working definitions

1.2.1 Road Accident Blackspot on National Highways

According to the Ministry of Road Transport & Highways (MoRTH), Government of India, "road accident black spot on National Highways is a road stretch of about 500m in length in which either five road accidents (involving fatalities/grievous injuries) took place during last three calendar years or ten fatalities took place (in all three years out together) took place during the last three calendar years" **(Ministry of Road Transport and Highways, 2015).**

1.2.2 Community-based first responders

"Community-based first responders are volunteers trained and equipped to provide basic trauma care to traffic injury victims at the crash scene. They can help reduce the mortality and morbidity of road traffic injuries by providing timely and appropriate interventions" **(Moussally et al., 2022).**

1.2.3 Prehospital care in the community

"The whole spectrum of care ranging from immediate first aid to the post-crash victim at the accident spot to the best locally available means of transporting injured people to the nearest appropriate health-care facility, whether it is a clinic or a district hospital shall be covered in the Pre-Hospital care in the community for the post-crash victims" **(Sasser S,Varghese M, Kellermann A, Lormand JD, 2005).**

Emergency systems in most LMICs are limited and inefficient, and only a small fraction of the injured in RTAs get proper medical care at the crash site and safe ambulance transport. Moreover, only 50 percent of the injured receive first aid from bystanders at the site, and many of the injured are taken to medical facilities by drivers or laypeople **(Kobusingye et al., 2005; Margie Peden, Richard Scurfield, et al., 2004; Sasser S,Varghese M, Kellermann A, Lormand JD, 2005)**. Given that in most motor vehicle crash situations, laypeople are more likely to arrive at the crash site before the emergency services, utilizing the presence of these laypeople and providing them with first responder training can significantly reduce the complications resulting from RTIs (**Heidari** et al., 2019)**.** According to the World Health Organization, the first line of defence in providing timely medical attention is first responders, who might be bystanders or pre-hospital care providers (Sasser S, Varghese M, Kellermann A, Lormand **JD, 2005)**. Even if prehospital care is an essential component of trauma management, it faces many challenges in low-resource settings. Commercial drivers, volunteers, and other bystanders provide most prehospital transport and first aid. To improve prehospital care in underserved or unserved areas, existing networks of first responders could be utilized and enhanced (**Nielsen et al., 2012**)**.** When a formal pre-hospital system is unavailable, community members with basic first-aid training may step in to provide care. One way to enhance this resource is to train and employ those who are more prone to dealing with emergencies, such as bus or taxi drivers, to serve as pre-hospital care (**Mock et al., 2004**)**.**

One of the research projects in six low- and middle-income countries (Afghanistan, Brazil, Iraq, Islamic Republic of Iran, Mexico, and Trinidad and Tobago) evaluated the implications of prehospital care and found that it could reduce the risk of fatalities caused by injuries by 25 percent (**Henry and Reingold, 2012**)**.** Even with inexpensive procedures, people can die from preventable causes when pre-hospital transport is inadequate or non-existent **(Mock et al., 1998)**. The presence of untrained individuals at the scene of an accident might have far-reaching

consequences in more ways than one. It was well documented that training first responders is an effective strategy to improve outcomes in emergencies **(Margie Peden, Richard Scurfield, et al., 2004).** Those who arrive at the spot of the accident without any prior experience or training in providing relief, rescue, or first aid to RTI victims are the potential first responders (**Heidari et al., 2019**). Another study in Norway (**Bakke et al., 2016**)**,** highlighted that the interventions by laypeople, such as opening the airway and stopping bleeding, were done correctly in 81% of the cases reported.

Research suggests that laypeople can support emergency medical assistance systems and significantly reduce the illness and death rates associated with road traffic accidents(RTAs), provided they get appropriate instructions at the accident scene (**Tannvik et al., 2012)**. Access to prehospital treatment can affect the reduction of road traffic accident disability, sequelae, and lethality, even though safety initiatives are essential for lowering injuries and fatalities. Research indicates that receiving high-quality pre-hospital and hospital care early on can both avoid and reduce the risk of dying (**Tobias et al., 2021**)**.**

An earlier study by Pallavisarji *et al.* found that one-third of the first responders avoided giving any first aid to accident victims because of a lack of knowledge, and 42% lacked sufficient confidence in their pre-hospital care skills delivery of pre-hospital system care is rudimentary in many low- and middle-income countries, leaving the initial stabilization and transportation of the injured to untrained laypersons (**Pallavisarji et al., 2013**).Research has shown that short and intensive trauma training can improve the care delivery and confidence of first responders **(Joseph et al., 2021)**. To ensure that the injured get fair and prompt care, improving the emergency care systems that are the first to respond to RTAs in the world is vital. Injury care needs to be consistent and coordinated across different levels of care, such as first aid, prehospital care, emergency unit care, and early critical and surgical care as needed **(Geneva, World Health Organization., 2021).**

Compared to high-income countries with developed emergency treatment systems, mortality rates from serious injuries are substantially higher in low- and middle-income **(Henry and Reingold, 2012).** According to estimates, at least twice as many patients in low- and middle-income countries die before being admitted to a hospital as compared to developed nations with high income, which suggests that improving pre-hospital services will have an impact worldwide. A responsive emergency medical establishment that can judiciously rearrange and position ambulances with skilled personnel and extrication can deliver the best pre-hospital treatment. There are numerous approaches to enhance basic treatment at the collision site. It has been demonstrated that organized systems for training and deploying trained lay providers improve care in many nations **(Geneva, World Health Organization, 2016)**. Recent studies point out that laypeople frequently demonstrate a critical role in helping transport road traffic accident (RTA) victims to nearby medical facilities. However, a significant challenge develops when transferring to treatment centres. Severely injured patients are occasionally transported to clinics or hospitals of lesser competency regarding resources and services, leading to delays and wasted time. Encourage the education of volunteer first responders, particularly in areas with a shortage of prehospital care or long response times, and also bring positive changes (**Geneva, World Health Organization, 2017**).

There are instances worldwide where educating the public and emergency personnel may have improved the outcome of injuries sustained in traffic accidents. Putting things first, Uganda Police, cab drivers, and community leaders in Kampala, Uganda, where there is no official prehospital system, received a focused first aid training curriculum (**Brown et al., 2023**) . The follow-up studies on the effectiveness of the training and the self-reported practices were also encouraging (**Jayaraman et al., 2009**).

Commercial Driver Trauma Education Programme in Ghana (**Mock et al., 1998**), Emergency First Aid Responder (EFAR), “Village university” training concept in Iraq (Murad and Husum, 2010),

are some of the different models that explored the training of the first responders for prehospital post-crash care and found as one of the critical interventions in reducing the morbidity and mortality from Road crash injuries. Drivers can help the victims of road accidents by giving them first aid. Auto rickshaw drivers witness many road accidents as part of their job. They can help clear the road and save lives if they know how to give first aid. Drivers can help the victims of road accidents by giving them first aid **(Kailash Nagar, Divyasri D.S, 2019).**

One of the studies in the Udupi District of south India among autorickshaw drivers found that community involvement in early trauma management is a solution for India, where the rate of accidents, trauma, and injuries is very high, and resources are scarce. The government's initiatives and policies to increase road safety and lessen the impact on casualties will be supplemented by the suggested techniques of including drivers in the early management of accidents and trauma (**Vinish et al., 2020**). Another study in the Mehsana district revealed that 16% of people had good knowledge regarding the prevention of road traffic accidents, 32% of people had average knowledge, and the majority, 52% of people, had poor knowledge. It was observed that the knowledge and awareness regarding the prevention of road traffic accidents among people was poor **(Patidar et al., 2020).** Another study on the factors influencing the post-crash emergency treatment of traffic injuries in the Aligarh District of Uttar Pradesh found that 58.8% of respondents said the layperson or common man was the first to react at the crash scene. 98.8% of respondents said a layperson could call for assistance by phoning different helplines. A sizable portion of respondents also viewed the police and roadside vendors as facilitators **(Urfi et al., 2022).**

1.3 Rationale for the study

Strengthening prehospital care by enabling and equipping layperson/community-based first responders to ensure careful crash victim extrication, prompt care at the crash scene, airway safeguarding, control of external haemorrhage, immobilization of external fractures, calling for emergency transportation, and prompt transportation to the appropriate health facility is the recommended corrective action for addressing the high morbidity and mortality rate associated with road crash. There are significant disparities in the degree of care between countries based on the availability of resources. In situations with no established pre-hospital system, the initial level of care may involve laypersons who have received training in fundamental first aid methods, sometimes referred to as first responders—enlisting and instructing highly motivated individuals, such as public transit drivers, who are more inclined to handle emergency circumstances, to serve as pre-hospital care providers might enhance this asset **(Mock et al., 2002).**

A research study was undertaken in the Tumkur District of Karnataka to investigate the application and perception of first aid by laypeople. The aim was to provide a foundation for improving the prehospital care system. The survey revealed that 37% of the individuals refrained from offering assistance once, while 35% refrained from doing so multiple times when asked to help in an emergency within the past six months. Out of the responses, 79 individuals (30%) cited not comprehending the exact instructions as the most common **(Pallavisarji et al., 2013).**

One of the qualitative studies in a South Indian district that examined the care provided to road traffic injury victims found that the main factors that delayed their transport were the first responders' fear of legal problems (36.9%) and the slow arrival of ambulances (41.5%). More than a quarter of the participants (26.1%) suggested that awareness creation among the public may reduce the transport delay **(Sathyanath et al., 2021) .** As per State Crime Records Bureau data of 2022, Alappuzha district of Kerala had 3666 accidents, leading to 4519 injuries and 365

deaths. The Alappuzha district only encompasses 3.6% of the state's total area, but it accounts for 8% of all fatal traffic accident **(State Crime Records Bureau, Government of Kerala, 2023).**

According to the data gathered and analyzed through the National Transportation Planning and Research Centre (**NATPAC**) regarding the road-crash statistics for 2021- 22, there are 420 accident-prone blackspots in Alappuzha District. 35 out of the 420 blackspots are listed as high-risk blackspots. Among the 35 blackspots, 31 are on national highways and have remained similar since 2012. Despite the district experiencing many road incidents and fatalities, the trauma treatment readiness in Alappuzha was found **(B M Asheel, B Soman, V G Kuriakose, S Francis, T Mathew, 2010)**. One of the recent studies that examined the road accident cases reported in Kerala from 2018 to 2022 showed that the maximum number of road accidents and injuries between the 2018 to 2022 period was from Ernakulam rural region with 17,239 cases, followed by Alappuzha region with 16,230 cases. Both Ernakulam and Alappuzha districts were having the highest number of injured people from motor vehicle crashes between 2018 to 2022 **(A P Shojan, 2023).**

The care of the road crash victims in the Golden Hour is important to save the lives of the victims and to reduce both morbidity and mortality. This may be facilitated by training community-based first caregivers. The studies documenting the facilitators and barriers being faced by community-based first responders in providing first aid to the post-crash victims are currently lacking. Moreover, there are studies that evaluated how first responders access institution-based comprehensive trauma care in the Golden hour for post-crash victims. Hence, the present study was envisaged.

1.4 Goals and objective

1.4.1 Overall Goal

To assess the barriers of community-based First Responders in accessing Institution-based Trauma Care for Post crash Victims around road accident blackspots in Alappuzha District.

1.4.2 Research Question

What are the barriers and enablers of community-based First Responders in providing First Aid to the Post-Crash Victims in the 'blackspots' of Alappuzha District?

1.4.3 Major Objective

To assess the barriers and facilitators of community-based First Responders in providing 'First Aid' to the Post-crash Victims in the road accident blackspots of Alappuzha District.

1.4.4 Minor Objective

To assess the barriers of community-based First Responders in accessing institution-based Trauma Care for post-crash Victims around road accident blackspots in Alappuzha District.

CHAPTER 2

2. Methodology

2.1 Study design

Quantitative Research- Cross-Sectional Study

2.1.1 Study setting

The study was conducted across 35 road accident blackspots in Alappuzha District, Kerala

2.1.2 Sample size

The samples were selected through a non-probability purposive sampling technique. As per the literature review, the proportion of the population withheld themselves from rendering help during emergencies post-crash was **37% (Pallavisarji et al., 2013).**

Calculations of the Sample size was done using the formula $N=^{(Z_{\alpha/2})2\ p(1-p)/d2}$

N= sample size (the proposed number of participants)

P= the proportion of the population reluctant to offer first aid or emergency help to post-crash victims.

Zα/2= The critical value of the normal distribution at **α/2.**

For a confidence Interval of 95%, the critical value is 1.96.

D -The precision or margin of error is taken as 5%

Hence **N= 1.96*1.96*0.37*0.63/ (0.05*0.05)** =358

On average, 11 study participants were recruited from all 35 Road accident Blackspots.

2.2 Sample selection

2.2.1 The current cross-sectional research was done among potential community-based first responders, specifically autorickshaw drivers, taxi drivers, and shopkeepers or shop workers within a 200-meter radius of the blackspots. Blackspots refer to areas with high rates of road traffic incidents (RTIs) and fatalities. The sampling strategy adopted in the present research was non-probability purposive(consecutive) sampling. There were 35 high-risk road accident blackspots in Alappuzha, as shown in Figure 1. The PI visited all 35 blackspots at different times to recruit the samples to get the perceptions of the participants working in different operational time slots. The participants were met one-on-one at their working station by ensuring privacy and were explained the research topic, the requirement of voluntary participation, and the process of withdrawal from the study. The PI clarified the doubts of the potential participants and collected informed consent forms in hard copy. After gathering informed consent from the study participants, the data was collected by the PI with the help of a structured interview schedule. The recruitment of the participants was completed by including participation from all three groups of potential participants to ensure the representation of each subgroup. In cases where there's a lack of responders from specific subgroups (e.g., auto-taxi drivers, shopkeepers) a contingency plan was adopted including subgroups from other blackspots with similar levels of reported RTIs and fatalities.

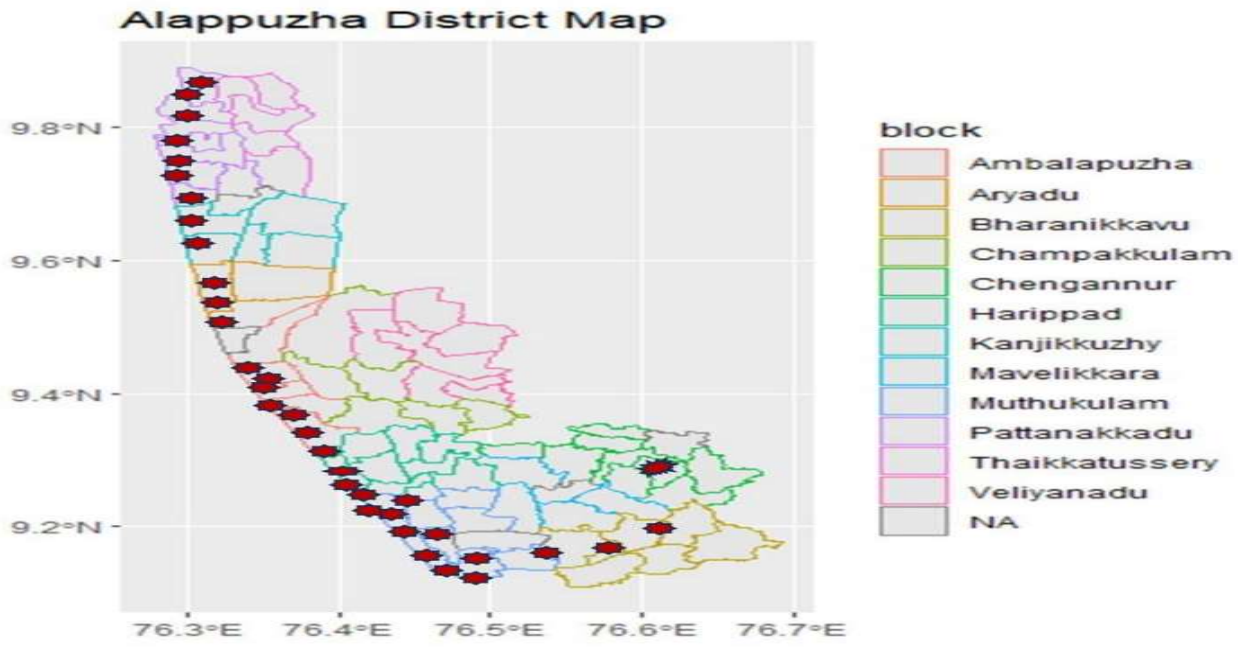

Figure 1 Road accident blackspots in Alappuzha District

2.2.1 Inclusion Criteria

Study participants were recruited from Autorickshaw-taxi drivers, shopkeepers/shop workers within a 200-meter radius of the road accident blackspots in the age group 18-59 years who were engaged in the current occupation in the data collection area for at least 06 months. They had rendered informed consent.

2.2.2 Exclusion Criteria

Those who were unwilling to participate in the current research were excluded.

2.2.3 Data collection tools

The Principal Investigator (PI) visited all the high-risk road accident black spots, and study participants were purposively selected after obtaining informed consent from each participant. The acquisition of data was carried out by the Principal Investigator (PI) through a one-on-one interview with participants using a predetermined interview schedule. The study participants included community-based first responders, specifically autorickshaw drivers, taxi

drivers, and shopkeepers/workers operating near blackspots. The participants were selected from the age group of 18-59 years.

The interview schedule had six major themes.

- Occupational information
- Socio-Demographic information
- Knowledge about emergency support and First Aid to the Road crash victims
- Awareness of accessing health services, transportation facilities, government-sponsored BLS ambulance systems, and health facilities.
- Barriers to providing First Aid to the road crash victims
- Facilitators in providing First Aid to the road crash victims

The potential study participants were not compelled or persuaded to enroll in the study and had the option to withdraw their consent at any point of time during the study.

2.2.4 Data collection and analysis

Data collection: -

The Principal Investigator (PI) personally approached each participant at their workplace (referred to as 'black spots') and data collection was done between January and March 2024. The PI introduced the research topic, addressed doubts, obtained informed consent, and conducted interviews using a structured interview schedule. Privacy and voluntary participation were ensured for each participant. Each 'black spot' was assigned a unique identification number ('ALP-00' to 'ALP-35'), and each participant received an identification code ('ALP-PID-001' to 'ALP-PID-358').

2.2.5 Data entry and storage

The information collected via interview schedules was recorded through the Open Data Kit (ODK) platform, with subsequent output exported to SPSS version 28. Hard copies of the completed interview schedules were securely stored by the PI, who holds full responsibility for maintaining their confidentiality. Soft data derived from these hard copies do not contain personally identifiable information, as all forms are coded with a Blackspot identification number and a unique participant identification number. This soft data is stored in encrypted format on a password-protected computer. The Principal Investigator is committed to ensuring the safety and security of the data, as promised to the Institutional Ethics Committee (IEC).

2.2.6 Data analysis

Data was analyzed using IBM SPSS licensed version 28 for Windows. For all kinds of statistical tests, a p-value of less than 0.05 was assumed to be statistically significant. For categorical factors, frequencies and proportions were determined. The Pearson's chi-square test was used to compare categorical variables using bivariate analysis. The strength of association between variables was determined through Odds Ratio and 95% Confidence Interval (CI). Multivariate analysis was done to find the best model for predicting the outcome of interest.

2.2.7 Study period

The data collection was done by the PI between 12th January 2024 and 10th March 2024 after getting the approval of the Institutional Ethics Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology.

2.2.8 Ethical Considerations

The study was done with the approval of the Institutional Ethics Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) vide letter number SCT/IEC/2165/DECEMBER/2023 Dated 11/01/2024. Before interviewing the participants as part of data collection, informed consent in hard copy was gathered in the IEC-approved form. Each participant was given an identification number in the interview schedule while collecting the information. Utmost priority was given to protecting the participant's privacy and confidentiality; the collected information will be kept under the safe custody of the principal investigator without sharing it with anybody.

2.2.9 Operational definitions of variables

Knowledge: Knowledge refers to familiarity, awareness, understanding, or acquaintance with facts, information, or skills. It encompasses what we have learned through experience, study, or observation **(Merriam-Webster.com Dictionary, 2021).**

Vulnerable Road Users (VRUs): The National Safety Council (NSC) broadly defines a Vulnerable Road User as anyone not protected by an outside shield (such as the body of a car) while on the road (**National Safety Council, 2017**). More narrowly, the term Vulnerable Road User is typically used to refer to pedestrians and cyclists but may also apply to motorcyclists, road workers (who are also considered pedestrians), and other road users not inside a vehicle such as a car, truck, or bus.

Road traffic accident (RTA): "A road traffic accident is any accident involving at least one road vehicle in motion on a public road or private road to which the public has the right to access, resulting in at least one injured or killed person" **(United Nations Office for Disaster Risk Reduction(UNDRR), 2019).**

Emergency care and support: Emergency care and support refer to immediate assistance or treatment provided to individuals facing urgent medical, psychological, or social crises. Emergency care and support may include medical interventions, such as first aid, resuscitation, or trauma care **(Geneva, World Health Organization, 2019).**

First Aid: It is all kinds of helping behavior (including making a call to the police, ambulance, or family members of the victim and transporting the RTA victim to the health facility or police post) and initial care provided for an RTA injury to the victim **(Awasthi et al., 2019).**

Awareness of First Aid: Awareness of first aid refers to having knowledge and understanding of primary medical care and emergency procedures. First aid awareness includes recognizing signs of distress, knowing when to seek professional help, and having the ability to provide initial assistance until medical professionals arrive **(Occupational Safety and Health Administration(OSHA), 2021).**

Knowledge of First Aid: Knowledge of First Aid refers to understanding and familiarity with the immediate care and initial medical assistance provided to someone who has suffered an injury or illness. The primary goals of First Aid, often referred to as the "Three P's," are to preserve Life, Prevent Further Harm, and Promote Recovery **(Mohsin Wahocho, 2023).**

The interview schedule contained 09 distinct questions regarding the provision of emergency support, first aid, and critical handling of post-crash victims (**NHS Inform First aid, 2020**). Each correct response to a question was awarded '1 mark', while incorrect responses received '0 mark'. The participants' composite knowledge scores were calculated by summing the scores awarded for all questions. Based on the median composite knowledge score of '5' the study participants were grouped into two. Those participants with composite knowledge scores below '5' were classified as having 'inadequate knowledge,' while those with scores equal to or above '5' were categorized as having 'adequate knowledge.'

Self-reported experience: Data regarding the field experiences in witnessing Road crashes and the First Aid/emergency support provided in each case was gathered from the study participants. The participants were asked about witnessing road crashes and the follow-up first responses to each incident.

Barriers: A barrier is a physical, psychological, or conceptual obstruction that prevents or hinders progress, access, or communication. When it comes to providing first aid, several barriers can hinder effective assistance. It may be a Language Barrier, information barrier, barrier due to lack of training, barriers due to legal concerns, fear and anxiety, and lack of confidence.

2.2.10 Definitions and Classifications of variables used for analysing associations

Outcome variable/Dependent variables

a) **Emergency support and First Aid provided to the Road crash victims: -**

The participants witnessing Road crashes in the past one year were grouped into two groups based on the emergency support and First Aid provided status as 'service rendered' and 'service not rendered.'

b) Composite knowledge score:

The potential first responders were grouped into participants with adequate knowledge and inadequate knowledge.

c) **Training status:** Participants were grouped based on their training status. Those who received training in First Aid and emergency care were categorized under the 'received training group,' while the remaining participants were placed in the 'not received training group.'

d) **Awareness of First Aid for Road crash victims:** The study participants were divided into two groups based on their awareness of First Aid in RTAs. Those who were aware about First Aid to road crash victims were classified under the 'aware group,' while the remaining participants were designated as the 'not aware group.'

Exposure variable/Independent variable

a) **Age:** Median and Range of the Age were calculated. The study participants were allocated into two groups based on their median age. The first group with <median age, and the second group with ≥ median age.

b) **Educational status:** The educational status of the participants is further grouped into two categories. The first group consisted of those participants with 'education up to secondary school' and the second group had 'education more than secondary school'**.**

c) **Current occupation:** The study participants were recruited from occupational groups of Taxi drivers, Autorickshaw drivers, shopkeepers, and shop workers**.** After the univariate analysis, the participants were grouped into driver group with Taxi-auto drivers and non-driver group with shopkeepers and shop workers.

d) **Duration of engagement in the current occupation:** The participants were grouped into duration of engagement in the current occupation 'less than 01 year' and 'more than 01 year'.

e) **Timing of daily occupational engagement:** The participants were in two different operational timing groups. '08AM to 08 PM' and '08 PM to 08 AM'.

f) **Awareness regarding Government sponsored Ambulance services:** 'Aware' and 'Not aware'

g) **Awareness regarding Government Ambulance station point:** 'Aware' and 'Not aware'

h) **Awareness regarding payment system in Government sponsored Ambulance services:** 'Aware' and 'Not aware'

i) **Awareness regarding the additional facilities in Government sponsored Ambulance services:** 'Aware' and 'Not aware'.

CHAPTER 3

3. RESULT

This chapter describes the study participant's sociodemographic details, knowledge, and awareness status of first responders on RTAs, barriers, and facilitators of the potential first responders in providing emergency support and first aid, each discussed under different headings.

3.1 Sociodemographic characteristics of study participants

The age distribution of the study participants is shown in Figure 2. The median age of the potential first responders in the current study was 48 years, ranging from 20 to 59 years. The sociodemographic profile of the study population is shown in Table 1. Of the 358 participants, 76.3 percent were auto drivers, followed by shopkeepers or shop workers (18.7%), and taxi drivers (5%). Of the 358 participants, 62.5% had education up to secondary school, and the rest (37.5%) had education above secondary school. While considering the duration of engagement in the current occupation, 73.7 percent had experience of more than one year.

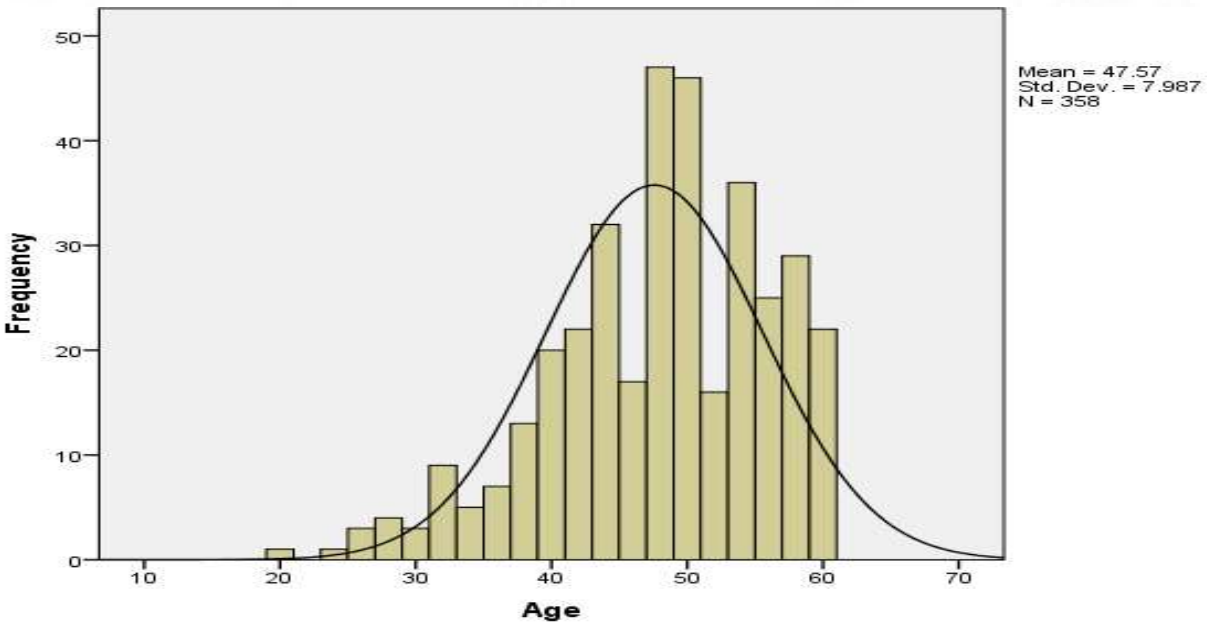

Figure 2 Age distribution of the study participants

Table 1 Socio-demographic characteristics of the study participants (N = 358)

Variable	Number (%)
Median age in years(range)	48(20-59)
Age groups	
Age<48 years	154 (43.0)
Age ≥ 48 years	204 (57.0)
Current occupation	
Taxi Driver	18 (5.0)
Auto Driver	273 (76.3)
Shopkeeper or shop worker	67 (18.7)
Duration of tenure in the current occupation	
< 6 months	5 (1.4)
6 months to 1 year	89 (24.9)
> 1 year	264 (73.7)
Educational status	
Formal-Primary education (up to 7th Std)	22 (6.1)
Secondary education	202 (56.4)
Senior Secondary Education (Higher secondary)	113 (31.6)
Graduate and above	21 (5.9)
Timing of daily occupational engagement	
08.00 AM to 08.00 PM	286 (79.9)
08.00 PM to 08.00 AM	72 (20.1)

3.2 Awareness and training on first aid and emergency support of potential first aid responders

3.2.1 Awareness of First aid and emergency support of potential first responders.

As detailed in Table 2, among the 358 participants, around ninety percent (n=319) were aware of first aid methods to assist road crash victims. A smaller proportion of 10.9 percent (n=39) reported lacking awareness in this particular field. On further analysis, it was understood that Departments like Health, Police, and Motor Vehicle as the source of information in 42.6 percent and various media platforms such as television, radio, and internet in 32.6 percent. Additionally, 24.8 percent of individuals mentioned friends, coworkers, or colleagues as a source of information.

Among different occupational groups, drivers got more awareness compared to non-driver groups. Even among drivers, taxi drivers got 100 percent awareness compared to Autorickshaw drivers, who have 97.8 percent.

Table 2 Awareness status of potential first responders in first aid and emergency support

Variable	Number (%)
Awareness of first aid to road crash victims (n=358)	
Not Aware	39 (10.83)
Aware	319 (89.17)
Source of awareness (n=319)	
Media (TV, Radio, News Paper, etc)	104 (32.6)
Friends/coworkers/colleagues	79 (24.8)
Departments like MVD/Health/Police	136 (42.6)

Awareness among different occupational groups(n=319)		
Current occupation	**Aware (%)**	**Not aware (%)**
Taxi driver	18(100)	00
Autorickshaw driver	267(97.8)	6(2.2)
Shopkeeper/shop worker	34(50.7)	33(49.3)

3.2.2 Training status of potential first responders in First aid and emergency support

As detailed in Table 3, of the 358 participants, 54.7 percent of the participants reported that they had not undergone training in First Aid and emergency assistance, while 45.3 percent received First Aid training. Among different organizations that provided the training, the Motor Vehicle Department trained largest group, with 46.3 percent followed by Police department with 42.00 percent. The Health Department and Non-Governmental Organizations also contributed, albeit to a lesser extent, training 6.7% and 3.1% of the individuals, respectively. The Road Safety Authority trained the smallest group, with only 1.9% of the individuals. There exists a disparity between different occupational groups regarding training. Of the 67 non-driver groups (shopkeepers/shop workers), only 6 percent got some sort of training in first aid to RTA victims, while 44 percent of taxi drivers and 55 percent of auto drivers were trained.

Table 3 Training status of potential first responders in First aid and emergency support

Variable		Number (%)
Training on First Aid to Road crash victims (n=358)		
No training received		196 (54.7)
Training received		162 (45.3)
Organizations providing the training (n=162)		
Motor Vehicle Department (MVD)		75 (46.3)
Police Department		68 (42.0)
Health Department		11 (6.7)
Non-Governmental Organizations		5 (3.1)
Road Safety Authority		3 (1.9)
Training status among different occupational groups(n=162)		
Current occupation	**Trained (%)**	**Not trained (%)**
Taxi driver	8(44.4)	10(55.6)
Autorickshaw driver	150(54.9)	123(45.1)
Shopkeeper/shop worker	4(6.00)	63(94.00)

3.3 Knowledge of potential first responders in first aid and emergency support

3.3.1 Responses of the potential first responders to the questions on knowledge about First Aid and emergency support

Table 4 details the perceptions and responses of the potential first responders on first aid and emergency support in road traffic accidents. It was found that 40.50% of respondents failed to correctly identify the primary causes of immediate fatalities in road crashes. Even if most of the potential first responders accurately responded to the question on immediate response to road crashes, a notable portion of respondents (80.45%) provided incorrect responses regarding the safe and essential handling of collision victims. Moreover, a larger proportion of respondents (56.42%) provided incorrect answers regarding removing a helmet from a conscious post-crash victim. When asked about the initial steps to take for a post-crash victim with a penetrating injury, responses were nearly evenly divided. For a post-crash victim with an open fracture, more respondents (59.38%) correctly identified the first response, but only 1.68% of respondents accurately identified the initial course of action for a post-crash victim experiencing choking and respiratory distress.

Table 4 Responses of the potential first responders to the questions on knowledge about First Aid and emergency support(n=358)

Variable	Correct response (%)
The first response towards the post-crash victim with Burn injury	336(93.85)
First response towards post-crash victim immediately following the crash	334(93.3)
The first response towards the post-crash victim with an open fracture	209(59.38)
Commonest causes of immediate fatality in Road traffic accidents	233(59.24)
The first response towards the post-crash victim with penetrating injury with bleeding	170(47.49)
Knowledge of the removal of helmet from the head of a conscious Road crash victim	156(43.58)
Necessity of critical handling and safe transportation of the post-crash victim	70 (19.55)
The first response towards the post-crash victim with Seizure	69(19.27)
The first response towards the post-crash victim with respiratory distress and chocking	6(1.68)

3.3.2 Association of sociodemographic factors with responses of the potential first responders to the questions on First Aid and emergency support

Table 5 shows the association between potential first responder's responses to questions regarding first aid and emergency assistance and their sociodemographic characteristics. The findings show that factors such as occupational group, level of education attained, duration of employment, and working hours significantly impact respondent's responses.

Compared to non-drivers, those who are actively working as auto and taxi drivers have higher odds of correctly responding to the questions about the causes of immediate fatalities in traffic accidents (odds ratio [OR] = 2.85 (95% confidence interval [CI]: 1.654 to 4.895) and appropriate first aid to post-crash patients with penetrating injuries (OR of 3.26, 95% CI: 1.796 to 5.921). Additionally, the respondents who had education more than secondary school compared to those who had only education up to secondary school had higher odds of giving correct answers to the questions about the causes of immediate fatalities in traffic accidents (OR of 2.263 (95% CI: 1.40 to 3.65), appropriate first aid to post-crash patients with penetrating injuries OR of 2.206 (95% CI 1.426 to 3.413) and removal of a helmet from the head of a conscious victim of a traffic accident; this difference was shown by an OR of 1.672 (95% CI: 1.085 to 2.576).

Furthermore, those who had been working in their current field for more than a year showed higher odds of giving accurate responses when it came to comprehending the most common causes of immediate fatality in road traffic accidents (OR=1.761, 95% CI: 1.09 to 2.86) as well as first response towards post-crash victim immediately following the crash (OR=2.559, 95% CI: 1.104 to 5.930).

Compared to those working during the night, those working from 8:00 AM to 8:00 PM showed higher odds of comprehending the need for critical handling the road-crash victim (OR=2.609, 95% CI: 1.457 to 4.672) as well as the appropriate first response to post-crash patients with open fractures (OR of 1.591, 95% CI: 1.040 to 2.434).

Table 5 Association of sociodemographic factors with responses of the potential first responders to the questions on First Aid and emergency support

Most common causes of immediate fatality in Road traffic accidents(n=358)				
Sociodemographic variables	**Category (%)**	**Wrong response**	**Correct Response**	**OR (95%CI)**
Current occupational group	Non-Drivers (Shopkeeper/shop worker)	37(55.22)	30(44.78)	**Reference**
	Taxi and auto drivers	88(30.24)	203(69.76)	**2.85 (1.654 to 4.895)**
Educational status	Up to Secondary education (%)	93(41.52)	131(58.48)	**Reference**
	>Secondary education (%)	32(23.88)	102(76.12)	**2.263 (1.40 to 3.65)**
Duration of engagement in the current occupation	<01 year	42(44.68)	52(55.32)	**Reference**
	> 01 year	83(31.44)	181(68.56)	**1.761 (1.09 to 2.86)**
First response towards post-crash victim immediately following the crash(n=358)				
Duration of engagement in the current occupation	<01 year	11(11.7)	83(88.30)	**Reference**
	> 01 year	13(4.92)	251(95.08)	**2.559 (1.104 to 5.930)**
Necessity of critical handling and safe transportation of the post-crash victim(n=358)				
Timing of daily occupational engagement	08.00 AM to 08.00 PM	240(83.92)	46(16.08)	**Reference**
	08.00 PM to 08.00 AM	48(64.86)	24(35.14)	**2.609 (1.457 to 4.672)**

Knowledge of the removal of helmet from the head of a conscious Road crash victim(n=358)				
Sociodemographic variables	**Category (%)**	**Wrong response**	**Correct Response**	**OR (95%CI)**
Educational status	Up to Secondary education (%)	137(61.16)	87(38.84)	**Reference**
	>Secondary education (%)	65(51.49)	69(48.51)	**1.672 (1.085 to 2.576)**
Current occupational group	Non-Drivers (Shopkeeper/shop worker)	49(73.13)	18(26.87)	**Reference**
	Taxi and auto drivers	153(52.58)	138(47.42)	**2.46 (1.365 to 4.417)**
The first response towards the post-crash victim with penetrating injury(n=358)				
Current occupational group	Non-Drivers (Shopkeeper/shop worker)	50(74.6)	17(25.4)	**Reference**
	Taxi and auto drivers	138(47.4)	153(52.6)	**3.26 (1.796 to 5.921)**
Educational status	Up to Secondary education (%)	134(59.82)	90(40.18)	**Reference**
	>Secondary education (%)	54(40.3)	80(59.7)	**2.206 (1.426 to 3.413)**
The first response towards the post-crash victim with open fracture(n=358)				
Timing of daily occupational engagement	08.00 PM to 08.00 AM	38(52.78)	34(47.22)	**Reference**
	08.00 AM to 08.00 PM	111(38.81)	175(61.19)	**1.591 (1.040 to2.434)**

3.3.3 Composite knowledge of the First responders in First aid and emergency support to the Road crash victims.

The distribution of the composite knowledge score of the study participants is shown in Figure 3. The study participants were divided into two groups based on a composite knowledge score of '5'. Those participants with composite knowledge scores below the score of '5' were classified as having 'inadequate knowledge,' while those with scores equal to or above the score of '5' were categorized as having 'adequate knowledge.' Among the 358 participants, 55% had adequate knowledge about first aid and emergency support for post-crash victims, and 45% had inadequate knowledge.

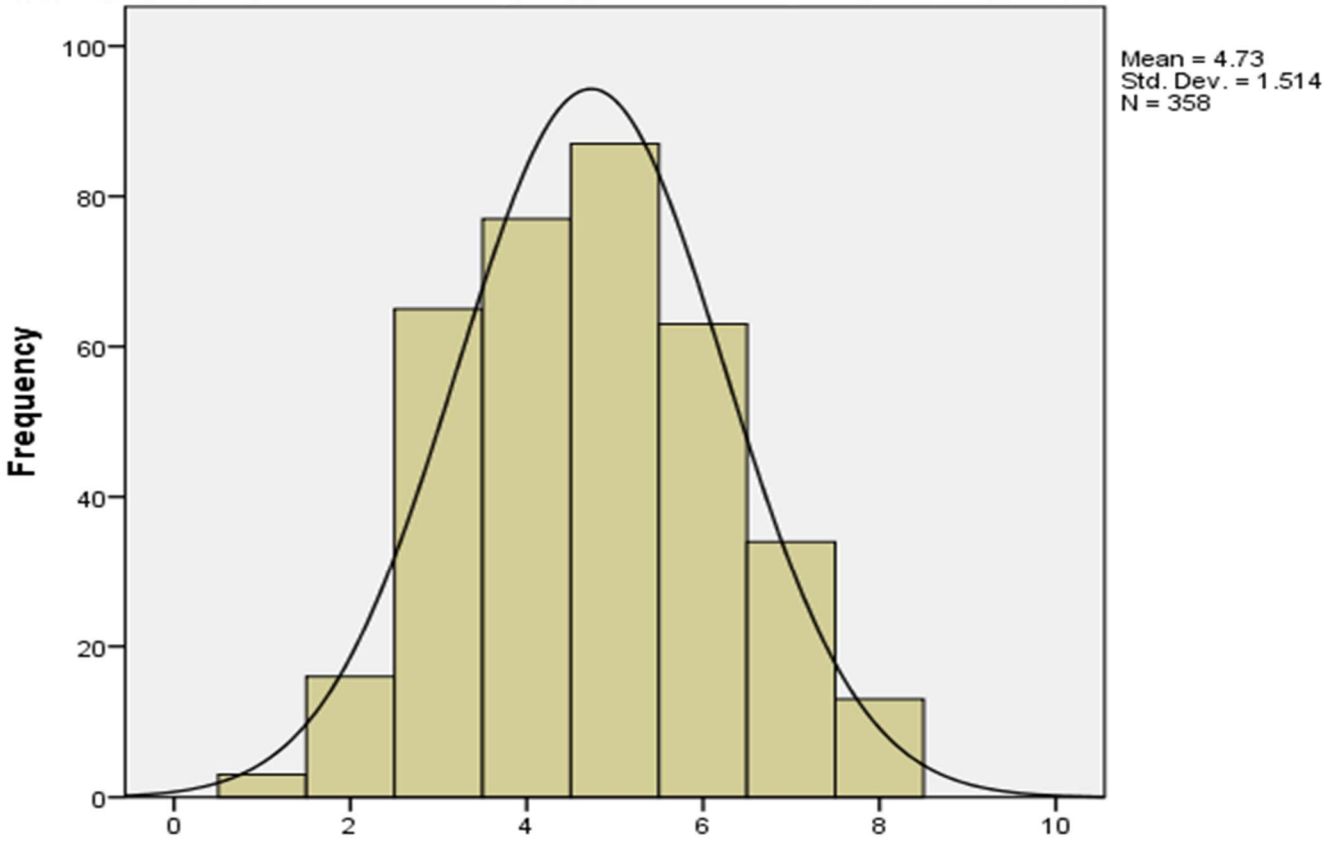

Figure 3 Distribution of composite knowledge score of the study participants

3.3.4 Association of composite knowledge and responses of potential first responders to the question about First Aid and emergency support to Road crash victims

The association of composite knowledge and responses of potential first responders to the question of awareness of first aid and emergency support for road crash victims is shown in Table 6. Potential first responders with adequate knowledge had 11 times higher odds of correctly identifying the most common causes of immediate fatalities in traffic accidents compared to those with inadequate knowledge. Similarly, participants with adequate knowledge had four times higher odds of correctly recognizing the initial response to a post-crash. Individuals with adequate knowledge were having five times higher odds of identifying the importance of safe and critical handling of post-crash victims. Furthermore, potential first responders with adequate knowledge were having 13 times higher odds of correctly understanding the appropriate steps to remove a helmet from a conscious road crash victim. The study participants with adequate knowledge were having roughly 11 times higher odds of accurately identifying the initial response for a post-crash victim with a penetrating injury. However, there was no statistically significant difference in knowledge between individuals who correctly or incorrectly identified the initial response for a victim experiencing respiratory distress and choking or an open fracture following a Road crash. Additionally, participants with adequate knowledge were having three times higher odds of rightly identifying the initial response to a post-crash victim experiencing a seizure. Similarly, potential first responders with adequate knowledge were having four times higher odds of accurately recognizing the initial response to a burn injury victim following a collision. The study concludes that better overall knowledge ratings correlate positively with accurate knowledge of various aspects of traffic accidents and post-crash responses.

Table 6 Association of composite knowledge and responses of potential first responders to the question on First Aid and emergency support

Variable	Composite Knowledge		p-value (Chi-Square test)	*OR (95%CI)
	Inadequate knowledge (%)	Adequate knowledge (%)		
Commonest causes of immediate fatality in Road traffic accidents				
Wrong response (%)	100(80.0)	25(20.00)	**<0.001**	**Reference**
Correct response (%)	61(26.18)	172(73.82)		**11.279 (6.661 to 19.09)**
First response towards post-crash victim immediately following the crash				
Wrong response (%)	18(75.00)	6(25.00)	**0.002**	**Reference**
Correct response (%)	143(42.81)	191(57.19)		**4.007 (1.551 to 10.35)**
Necessity of critical handling and safe transportation of the post-crash victim				
Wrong response (%)	17(77.27)	5(22.73)	**0.002**	**Reference**
Correct response (%)	144(42.86)	192(57.14)		**5.830 (2.942 to 11.55)**
Knowledge of the removal of helmet from the head of a conscious Road crash victim				
Wrong response (%)	139(68.81)	63(31.19)	**<0.001**	**Reference**
Correct response (%)	22(14.10)	134(85.90)		**13.439 (7.829 to 23.07)**
The first response towards the post-crash victim with penetrating injury				
Wrong response (%)	132(70.21)	56(29.79)	**<0.001**	**Reference**
Correct response (%)	29(17.06)	141(82.94)		**11.46 (6.90 to 19.035)**

Variable	Composite Knowledge		p-value (Chi-Square test)	*OR (95%CI)
	Inadequate knowledge (%)	Adequate knowledge (%)		
The first response towards the post-crash victim with an open fracture				
Wrong response (%)	73(48.99)	76(51.01)	**0.236**	**Reference**
Correct response (%)	88(42.10)	121(57.90)		**1.321 0.866 to 2.015**
The first response towards the post-crash victim with respiratory distress and choking				
Wrong response (%)	160(45.33)	193(54.67)	**0.384**	**Reference**
Correct response (%)	1(20.00)	4(80.00)		**3.316 0.367 to 29.967**
The first response towards the post-crash victim with Seizure				
Wrong response (%)	144(49.83)	145(50.17)	**<0.001**	**Reference**
Correct response (%)	17(24.64)	52(75.36)		**3.038 (1.677 to 5.503)**
The first response towards the post-crash victim with Burn injury				
Wrong response (%)	17(77.27)	5(22.73)	**0.002**	**Reference**
Correct response (%)	144(42.86)	192(57.14)		**4.533 (1.634 to 12.58)**

**OR – Odds Ratio; CI – Confidence Interval*

3.3.5 Facilitators and Barriers to composite knowledge of first aid and emergency support among potential first responders

As per Table 7, a detailed analysis regarding different sociodemographic factors with the composite knowledge of first aid and emergency support was done. The current occupation, training and awareness status, educational status, age group, and duration of engagement in the current occupation were the factors considered for the association with adequate knowledge of first aid and emergency support. Among these, the current occupation, training status, awareness

status, and educational status of the potential first responders showed an association. In comparison to the non-driver group, those participants from the auto-taxi driver group had 3.98 times higher odds of having adequate knowledge. Potential first responders with more education than those in secondary school had 2.02 times higher odds of possessing adequate knowledge compared to those participants with education up to secondary school. Those who got the opportunity to be trained in first aid and emergency support had 4.92 times higher odds of having adequate knowledge compared to other untrained participants. Similarly, those potential first responders who were aware of the first aid in Road traffic injuries had 3.9 times higher odds of possessing adequate knowledge compared to an unaware group of participants. In order to identify the independent association among these variables with the composite knowledge of the potential first responders, multiple logistic regression was performed in which current occupational status and training on first aid and emergency support were found to have an association.

The potential first responders who received First Aid training are approximately 3.8 times more likely than those who have not been trained in First Aid and Emergency support will have adequate knowledge of First Aid and emergency support with an adjusted OR of 3.80 (95% confidence interval: 2.282 to 6.332). Additionally, Drivers (such as taxi and auto drivers) have an adjusted odds ratio of 2.32 (95% CI: 1.101 to 4.869) when compared to non-drivers (shopkeepers/shop workers), which demonstrates that the possibility of drivers being 2.32 times more likely to be knowledgeable about emergency support and first aid than the non-driver category of potential first responders. These results imply that the composite knowledge levels of responders concerning first aid and emergency care for post-crash victims are related to specific sociodemographic characteristics, such as current occupational status and education beyond senior secondary. Notably, persons who attained education higher than secondary school and taxi-auto drivers are likelier to have adequate knowledge of first aid and emergency support.

Table 7. Barriers to composite knowledge among first responders on First Aid and Emergency support to road crash victims

Variable	Composite Knowledge level		p-value (Chi-Square test)	*OR (95%CI)	Adj OR (95%CI)
	Inadequate knowledge	Adequate knowledge			
The age group of the participants					
Age <48 years	68(44.16)	86(55.84)	0.871	**Reference**	
Age ≥48 years	93(45.59)	111(54.41)		0.94 (0.620-1.437)	NA
Current occupational status					
Non-Drivers (Shopkeeper/shop worker)	48(71.64)	19(28.36)	<0.001	**Reference**	
Taxi-auto drivers	113(38.83)	178(61.17)		**3.98 (2.23-7.12)**	**2.32 (1.101-4.869)**
Educational status					
Up to Secondary education	115(51.4)	109 (48.6)	0.003	**Reference**	
More than secondary education	46(34.32)	88 (65.68)		**2.02 (1.29-3.14)**	**1.22 (0.740 – 2.008)**
Duration of engagement in the current occupation					
< 1 year	48(51.06)	46(48.94)	0.207	**Reference**	
> 1 year	113(42.8)	151(57.2)		**1.39 (0.87-2.24)**	**NA**

Variable	Composite Knowledge level		p-value (Chi-Square test)	*OR (95%CI)	Adj OR (95%CI)
	Inadequate knowledge	Adequate knowledge			
Training on First Aid to the road crash victims					
No	121(61.73)	75(38.27)	**<0.001**	**Reference**	
Yes	40(24.69)	122(75.31)		**4.92 (3.110-7.785)**	**3.80 (2.282 – 6.332)**
Awareness on First aid to the road traffic injuries					
Not aware	27(69.23)	12(30.77)	**0.002**	**Reference**	
Aware	134(42.00)	185(58.00)		**3.11 (1.519 - 6.35)**	**0.85** (0.344 -2.114)

3.3.6 Facilitators and Barriers to training on First aid and emergency support among potential first responders

Extensive research on various sociodemographic factors associated with responder training in first aid and emergency support was carried out since it turned out that training significantly influences the composite knowledge of potential first responders regarding post-crash victim care. The current occupation, job duration, daily engagement in the current occupation and the education status of the potential first responders were included as the independent variables as detailed in **Table 8,** and all the variables shown an association with the training status of the participants.

Those participants who attained higher than secondary school had 4.32 times higher odds of receiving training on first aid and emergency support than those with education up to secondary school. Likewise, compared to the non-driver group of shopkeepers and shopworkers, the auto-taxi drivers had 18.7 times higher odds of receiving training. Compared to those who engaged in the current job for less than one year, those potential first responders with a job duration higher than 01 year had 2.59 times higher odds of training.

Those potential first responders engaged in their daily jobs during the nighttime (8 PM to 8. AM) had 2 times higher odds of receiving training than others who operate in daytime. Multiple logistic regression was done with the above variables to find the independent association while adjusting for other variables. Being a driver with an education status of more than secondary school was found to be independently associated with training in first aid and emergency support. While adjusting for other variables compared to non-drivers, the auto-taxi drivers had 22 times higher odds of receiving training with adjusted OR 22.28 and 95% CI (6.773-73.28). Those potential first responders with education higher than secondary school had almost 4 times higher odds of receiving training (Adjusted OR 3.94,955CI (2.392 - 6.455) in comparison to those who had education up to secondary school.

After controlling for other factors, these results still show that one's present educational and occupational status is a strong predictor of having received first aid and emergency support training. Participants with higher levels of education and those who drive auto-taxis are more likely to have received training.

Table 8.

Barriers to training on First aid and emergency support among potential first responders

Variable	Training on First Aid and Emergency support(n=358)		p-value X^2 test	Crude OR (95%CI)	Adj OR (95%CI)
	Training received (%)	Training not received (%)			
Present job duration					
<01 year (%)	27 (28.72)	67 (71.28)	<0.0001	**Reference**	
>01 year (%)	135 (51.14)	129 (48.86)		2.59 (1.56 to 4.31)	0.66 (0.322- 1.350)
Educational status					
Up to Secondary education (%)	72 (32.14)	152 (67.86)	<0.0001	**Reference**	
Higher secondary and above (%)	90 (67.16)	44 (32.84)		4.32 (2.74 to 6.81)	**3.94 (2.392 - 6.455)**
Current occupational status					
Non-Drivers (%) (Shopkeeper/shop worker)	4 (6.00)	63(94.00)	<0.0001	**Reference**	
Taxi-auto drivers (%)	158 (54.3)	133 (45.7)		18.71 (6.63 to 52.75)	**22.28 (6.773-73.28)**
Timing of engagement in the present occupation					
08 AM to 08.00 PM (%)	120 (41.96)	166 (58.14)	0.018	**Reference**	
08 PM to 0.8.00 AM (%)	42 (58.33)	30 (41.67)		1.94 (1.15 to 3.27)	**1.27 (0.707 - 2.292)**

3.4 Instances of Road accidents witnessed the type of First aid and emergency support provided to the road crash victims by the First responders in the past year.

3.4.1 Instances of road accidents witnessed by the participants in the last year

Table 9 details the road crashes witnessed by the potential first responders in the past one year. Among the 358 responders surveyed, 69% (247 individuals) reported witnessing at least one road crash the previous year, while 31% (111 individuals) did not witness any road crashes during the same period. Of the 247 responders,219 (61.2%) witnessed at least one road crash during the previous year, and 28 (7.8%) reported witnessing more than one road crash in the same period.

Table 9 Instances of road accidents witnessed by the participants in the last year

Variable	Number (%)
Responders witnessed one Road crash last year	247 (61.2)
Responders witnessed > one Road crash last year	28(7.8)
Responders not witnessed Road crashes last year	111 (31.0)

3.4.2 Type of road accidents witnessed by the responders in the previous year

Among the various types of road accidents, those involving pedestrians, bicyclists, and two-wheeler passengers—including hit-and-run cases—constitute the road crashes experienced by vulnerable road users (VRUs). As detailed in Figure 4, Out of the 247 reported road traffic accidents (RTAs), the ones involving VRUs account for 70% (174 cases). Out of

the 174 incidents, there were 104 two-wheel accidents, 48 pedestrian' hit-and-run cases, and 22 RTAs involving Bicyclists. Three-wheelers were involved in 17.4% (43 incidents) of road crashes, while four-wheelers contributed to 10.1% (25 incidents) of the total. Additionally, road crashes requiring extrication were reported in 2% (5 incidents) of the cases.

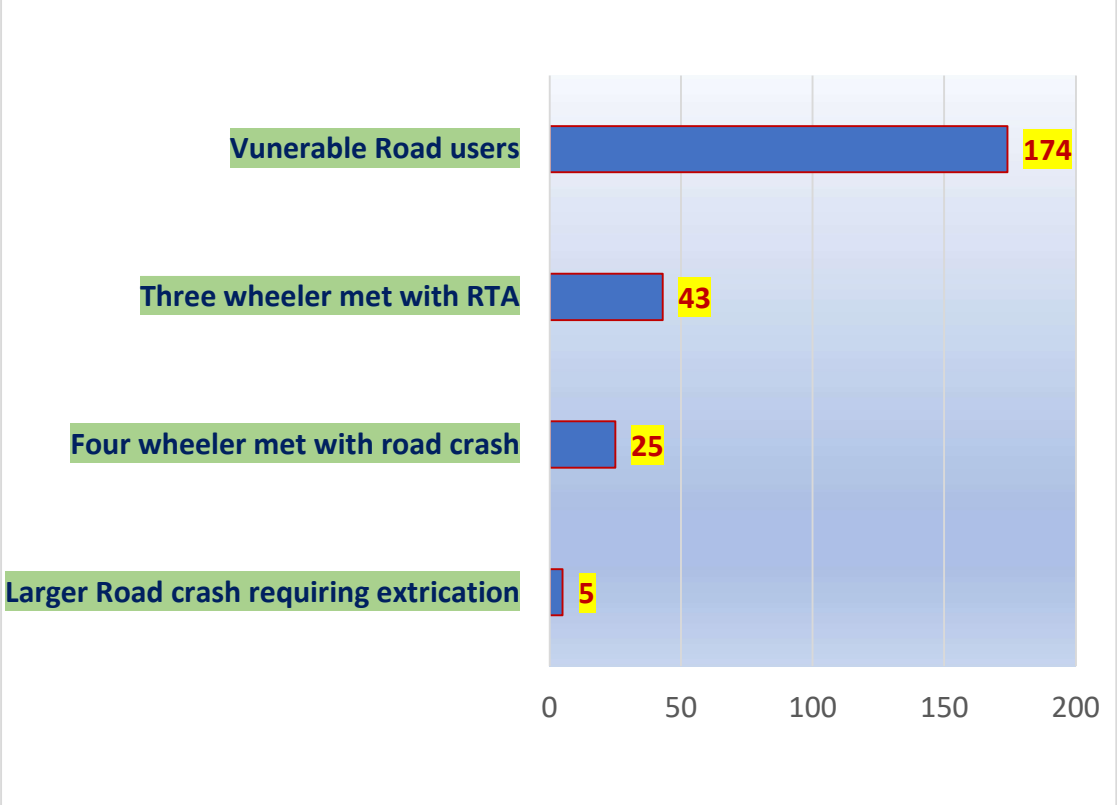

Figure 4 Types of road crashes witnessed by the participants in the last year

3.4.3 Type of First Aid and Emergency Care Provided by the First Responders witnessing Road Crashes in the Past Year

The first aid and emergency care provided by the first responders to the victim are shown in **Figure 5.** Out of the 247 cases, about half of the responders, 124(50.2%), accompanied the victims to the hospital, demonstrating proactive involvement in addressing the situation. Approximately 22% (54) of responders assisted in extricating victims. Among those who witnessed road crashes,49(19.83%) responders reported being unable to act, highlighting potential barriers or challenges faced during emergencies.

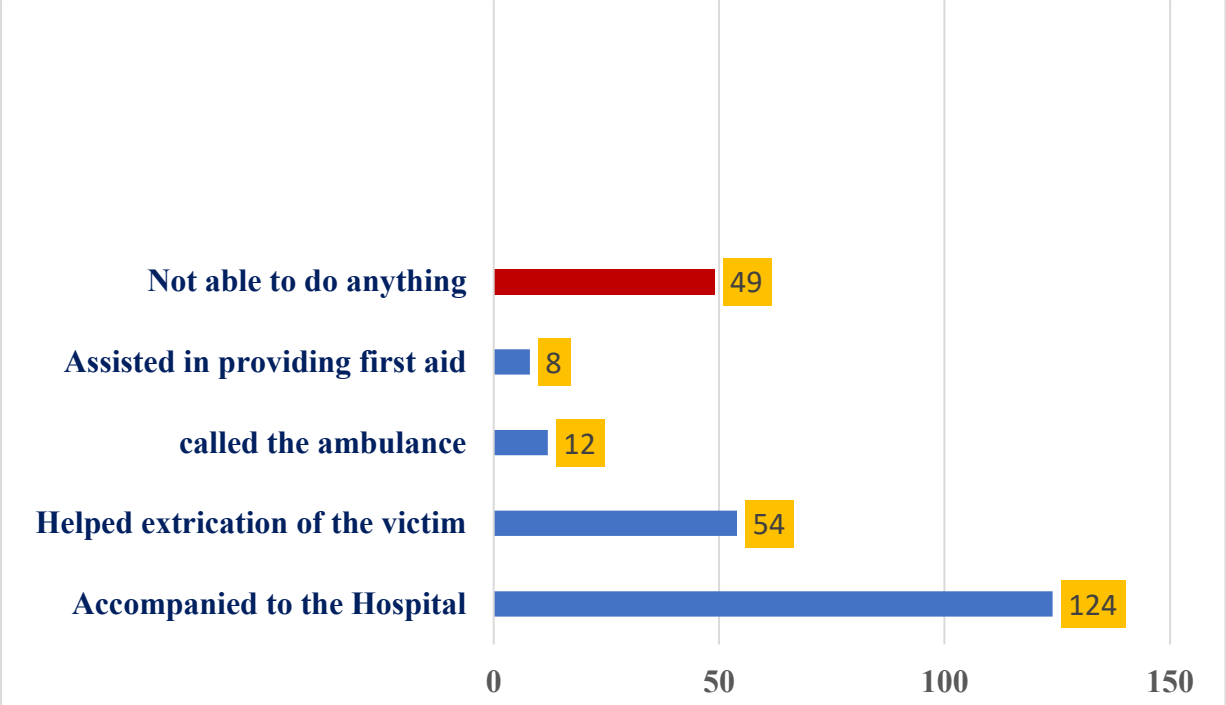

Figure 5 Types of first aid and emergency support provided by the potential first responders witnessed Road-crashes in the past one year

3.4.4 The reasons for not providing First aid and emergency care among first responders who observed road accidents in the past year

Figure 6 details the reasons attributed to the potential first responders who were unable to provide emergency support and first aid to the post-crash victims. Half of the respondents (46.94%) were unclear about the immediate response, and 23(46.94%) responders stated that they were alone and had no one to depend on in a strange place. Of the 49 first responders, 32 (65.31) had received no

training, and 17 (34.69%) had some training in emergency support and first aid.

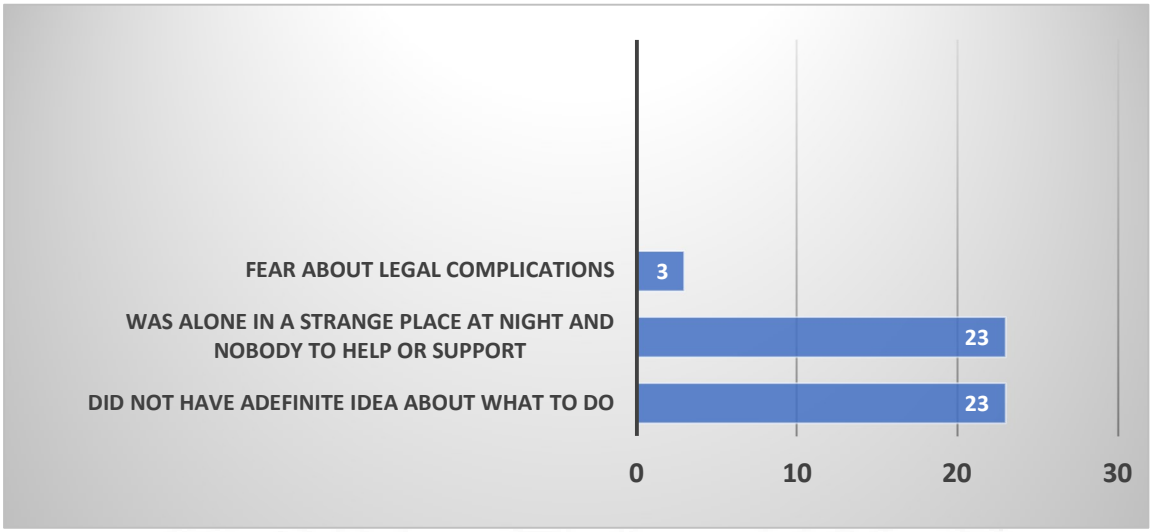

Figure 6 The reasons for not providing first aid and emergency support, even after witnessing the road crashes in the past year

3.5 Facilitators and Barriers among first responders in providing emergency support and first aid to road crash victims

As detailed in Figures 4,5 and 6 of the 358 participants, 247 got the opportunity to witness road crash last year and 198 responders rendered some sort of emergency assistance as well. A detailed analysis of the different sociodemographic barriers and facilitators regarding the immediate responses from the potential first responders who witnessed the road crashes was done. The variables used in the analysis were current occupation, training status on first aid, composite knowledge on first aid and emergency support, age group and educational status, duration of engagement in the current occupation, and timing of daily engagement. The factors associated with first responders offering emergency care and first aid are shown in Table 10.

We observed that composite knowledge of first aid and emergency care, current occupational status, and training in first aid and emergency care are associated with the rendering of emergency support and first aid by the potential first responders. Those potential first responders with

adequate knowledge of first aid and emergency support had 4.6 times higher odds of responding to road crashes compared to others with inadequate knowledge. Compared to the non-driver group those first responders from the auto-taxi driver category had 3.3 times higher odds of rendering emergency support and first aid to the post-crash victims. Those potential first responders who had some training in first aid and emergency support had 2.8 times higher odds of providing emergency assistance and first aid to the post-crash victims. Multivariate analysis using multiple logistic regression was done with independent variables, the composite knowledge of first aid and emergency support, training status on first aid and emergency support, and the current occupational status of the responders. Among different models, the one with the least AIC value was selected as the best. After adjusting for other variables, the composite knowledge of the first responders in first aid and emergency support showed a statistically significant association. Those potential first responders with adequate composite knowledge had 3.75 times higher odds (adjusted Odds ratio of 3.75(95%CI 1.829 to 7.672) of rendering emergency support and first aid to the post-crash victims while compared to those participants with inadequate

Table 10. Facilitators and Barriers of the potential first responders in providing emergency support and first aid to road crash victims

Variable	Response of First aid and emergency care provided by the first responders (n=247)		p-value X^2 test	*Crude OR (95%CI)	**Adj OR (95%CI)
	Service not rendered (%)	Service rendered (%)			
Composite knowledge of First aid and emergency support					
Inadequate knowledge (%)	34(34.34)	65(65.66)	<0.001	Reference	
Adequate knowledge (%)	15(10.1)	133(89.9)		4.64 (2.359 to 9.119)	3.75 (1.829-7.672)

Variable	Response of First aid and emergency care provided by the first responders (n=247)		p-value X^2 test	*Crude OR (95%CI)	**Adj OR (95%CI)
	Service not rendered (%)	Service rendered (%)			
Current occupational status					
Non-Drivers (Shopkeeper/shop worker)	14 (40.00)	21 (60.00)	0.003	**Reference**	
Taxi and auto drivers	35(16.51)	177 (83.49)		3.37 (1.565 to 7.262)	2.17 (0.912 – 5.18)
Training status of the responders on First Aid to the road crash victims					
Not received training (%)	33 (29.21)	84 (71.79)	0.003	**Reference**	
Received training (%)	16 (12.31)	114(87.69)		**2.80 (1.446 to 5.417)**	**1.45 0.671 – 3.131**
Awareness of First Aid for road crash victims					
Not aware (%)	8(34.79)	15 (65.21)	**0.107**	**Reference**	
Aware (%)	41 (18.3)	183 (81.7)		2.38 (0.946 to 5.988)	NA
Educational status					
Up to Secondary education (%)	33(21.85)	118(78.15)	**0.405**	**Reference**	
>Secondary education (%)	16(16.67)	80(83.33)		1.40 (0.722 to 2.708)	NA

Variable	Response of First aid and emergency care provided by the first responders (n=247)		p-value X^2 test	*Crude OR (95%CI)	**Adj OR (95%CI)
	Service not rendered (%)	Service rendered (%)			
Duration of engagement in the current occupation					
<01 year	12 (20.69)	46 (79.31)	**1.00**	**Reference**	
> 01 year	37 (19.56)	152 (80.44)		1.07 (0.517 to 2.224)	NA
Timing of daily occupational engagement					
08.00 AM to 08.00 PM	33(17.28)	158(82.72)	0.209	**Reference**	
08.00 PM to 08.00 AM	16(26.23)	45(73.77)		0.61 (0.306 to 1.201)	**NA**
The age group of the responders					
Age <48	19(15.97)	100(84.03)	0.190	**Reference**	
Age>= 48	30(23.44)	98(76.56)		0.62 (0.328 to 1.175)	NA

Crude OR – Crude Odds Ratio; CI – Confidence Interval

****Adj OR- Adjusted Odds Ratio***

3.6.1 Perceptions of the potential first respondents about community response towards rendering emergency support to Road Crash Victims

Table 11 below details the perceptions of the potential first respondents about community response towards rendering emergency support to Road Crash Victims. Among the 358 participants, 53.4 percent consider it of the utmost importance to promptly provide care and ensure access to hospitals for victims of traffic crashes as part of a community's response. Furthermore, a significant proportion of individuals, specifically 46.4 percent, to believe they have a moral duty to assist individuals involved in motor vehicle crashes.

Table 11 Perceptions of the potential first respondents about community response towards rendering emergency support to Road Crash Victims

Variable	Number (%)
Moral responsibility	166 (46.36)
Unnecessary headaches and legal complications	1 (0.28)
Providing immediate care and accessing hospitals care are the priorities	191 (53.36)

3.6.2 Perceptions of the potential first respondents regarding the facilitators for helping the Road Crash victims

Table 12 below outlines the factors that respondents considered to be facilitators in aiding road crash victims. Among the 358 participants, the vast majority (about 38%) consider system support from health and police departments as a crucial facilitator. Approximately 24 percent of the participants believe that legal assistance is essential in aiding individuals involved in road accidents.

Approximately 17 percent of participants acknowledge the importance of training and the enhancement of skills. A significant percentage (about 14%) acknowledges the combined effectiveness of legal assistance, system support, and training. Finally, a minuscule proportion (about 0.6%) prioritizes a humanitarian perspective.

Table 12 Perceptions of the potential first respondents regarding the facilitators for helping the Road Crash Victims

Variable	Number (%)
Humanitarian approach	2 (0.56)
Community support	2 (0.56)
Responsible public	3(0.84)
Legal support and system support from Health and Police	21(5.88)
Legal support, system support from Health and Police, training and skill acquisition	49 (13.69)
Training and skill acquisition	60 (16.77)
Legal support through police and other authorities	85 (23.71)
System support from the Health and Police Department	136 (37.99)

3.6.3. Perceptions of the respondents regarding the motivating factors for helping the Road Crash Victims

Table 13 below explains the perspectives of the potential first respondents regarding the motivating factors for helping the Road Crash Victims. Among the 358 participants, over 27% of the respondents said that receiving legal protection was an important motivation for providing immediate medical attention and support to victims of traffic accidents. About 26% agree that

awareness and training are important. Of the participants, about 24% consider hospital support to be a key source of motivation. About 11% of those surveyed emphasize the combined benefits of hospital help and legal protection.

Table 13 Perceptions of the respondents regarding the motivating factors for helping the Road Crash Victims

Variable	Number (%)
Legal protection	95 (26.54)
Training and Awareness	93 (25.98)
Support from Hospitals	86 (24.02)
Training, awareness, and Support from hospitals	28 (7.82)
Legal protection, Training, awareness, and Support from hospitals	14 (3.91)
Legal protection and support from the Hospital	39 (10.89)
Community support	3 (0.84)

3.7 Barriers to first responders in accessing Transportation Facility and Institutionalized trauma care for post-crash victims

3.7.1 Barriers to accessing the government-sponsored Ambulances for transporting the Road crash victim

As detailed in Table 14, 90.5 percent of the potential first responders were aware of government-sponsored ambulance station locations even though all the 358 participants opined Ambulances as the preferred vehicle for transporting post-crash victims and knowing about the Government-sponsored Ambulances. Of the 358 participants, 92.2 percent were aware of the payment structure

for government-funded ambulances. Out of 247 responders, only 13.77 percent attempted to use government-sponsored ambulance services. Among those who tried to use government-sponsored ambulance services (34 respondents), only 26.47 percent were successful. Of the 25 potential first responders who were unable to utilize the government-sponsored ambulances, 64 percent said that ambulance was unavailable, while 36% said that they could arrange for a different vehicle prior to the arrival of the government-sponsored ambulance.

Table 14. Barriers to accessing government-sponsored ambulances by the first responders for transporting the post-crash victims

Variable	Number (%)
Awareness about the government-sponsored Ambulance station point (n = 358)	
Not aware	34 (9.5)
Aware of the Ambulance station point	324 (90.5)
Awareness about the payment system of government-sponsored Ambulances (n = 358)	
Not aware	28 (7.8)
Aware of the payment system	330 (92.2)
Data on trying to access government-sponsored Ambulance services (n=247)	
Not tried to access	213 (86.23)
Tried to access the government-sponsored Ambulance services	34 (13.77)
Data of availing the services of government-sponsored Ambulances (n = 34)	
Ambulance service availed	9 (26.47)
Ambulance services not availed	25 (73.53)
Data of availing the services of government-sponsored Ambulances (n = 34)	
Ambulance not available	16(64.00)
Got another vehicle early	9(36.00)

3.7.2. Barriers and facilitators among Community-based first responders for accessing institutionalized post-crash care

a) **Health facility preferences among Community-based first responders for institutionalized post-crash care**

As detailed in Table 14, out of the total 358 respondents, a significant majority, 343 (95.8%), preferred government hospitals for post-crash institutional care. A minority, comprising 15 individuals (4.2%), favoured private hospitals for such care. Among those preferring public health facilities (343 respondents), 69 individuals (19.3%) favoured medical college hospitals for post-crash care. The majority, 289 respondents (80.7%), preferred taluk hospitals or Taluk Head Quarters Hospitals (THQH) for this purpose.

Table 15. Health facility preferences among potential first responders for institutionalized post-crash care

Variable	Number (%)
Health facility preferences for post-crash institutional care (n = 358)	
Government Hospitals	343(95.8)
Private Hospitals	15 (4.2)
Preference among Public health facilities for post-crash institutional care (n = 343)	
Medical College	69 (19.3)
Taluk Hospital/THQH	2890.7)

b) Reasons for preferring public health facilities by Community-based first responders for institutionalized post-crash care

As detailed in Figure 7, in response to the inquiries on facility preferences, the commonly cited reasons for preferring government hospitals, as mentioned by 181 respondents (52.77%), was their proximity and convenience. 14.58 percent of respondents favoured government hospitals due to the perception of lower costs for care. Fifteen individuals (4.37%) appreciated the ease of further referral, if necessary, when opting for government hospitals. Sixty individuals (17.49%) highlighted proximity and lower care costs as reasons for their preference. Thirty-five respondents (10.21%) valued proximity and the ease of further referral if required when choosing government hospitals.

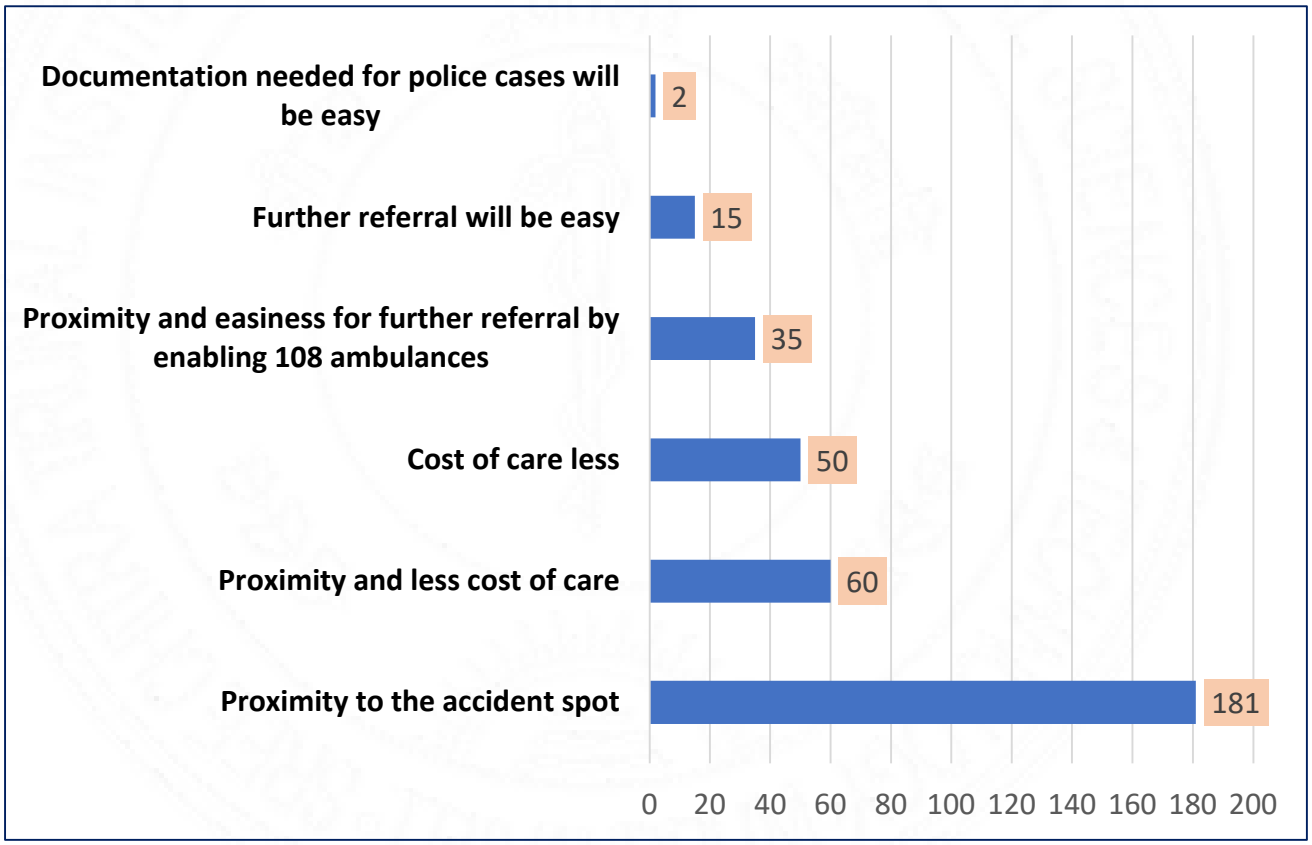

Figure 7 Reasons attributed for preferring Government Health facilities over Private for institutionalized post-crash care

CHAPTER 4

DISCUSSION AND CONCLUSION

4.1 DISCUSSION

By improving both prehospital and facility-based emergency care, it is expected that up to 54% of annual deaths in low- and middle-income countries (LMICs) could be avoided. Inexperienced laypersons frequently interact with individuals involved in accidents within the setting of emergency medical care before reaching the hospital. According to the World Health Organization (WHO), it is recommended that non-professionals contact emergency services, extinguish fires, protect the area, prevent additional accidents, ensure the safety of rescuers and onlookers, and provide basic first aid upon arrival at the site of a crash *(Jayaraman et al., 2009)*.The present study seeks to evaluate the difficulties and facilitators of the community-based first responders in providing emergency assistance and First aid to the victims of RTA. The present study assessed the awareness of potential first responders about First aid and emergency support. Further, the barriers and facilitators of providing First aid and emergency support by the potential first responders were evaluated.

The current study's findings that 62.5% of study participants completed secondary education are consistent with the few similar studies. In a comparable study conducted in Uttarakhand among drivers of commercial taxis, buses and autorickshaws, sixty-six percent of participants had completed secondary school (*Awasthi et al., 2019*). Sixty-five percent of research participants in another study in Jodhpur among commercial cab drivers and auto rickshaw drivers had completed at least the eighth standard of education.*(Rustagi et al., 2023*).The higher percentage of participants who attained education up to secondary school may indicate a state-specific pattern. In the current survey, 76.25 percent of participants were auto drivers, and 5 percent were taxi drivers. A similar study in Jodhpur reported that out of 200 participants, 50% were auto or taxi drivers.(*Rustagi et al., 2023*)**.** The higher proportion of auto drivers in the study may reflect that

the current research centered on a district's road accident hotspots, where autorickshaws may be the most convenient form of rapid transit. The study in Jodhpur reiterates that “Autorickshaw drivers are mainly confined to premises of junctions and will be available most of the times in the urban, municipal corporation areas as a major conveyance and hence may own up the responsibility of providing care to the road accident victims in their vicinity in contrast to the cab drivers”.(*Rustagi et al., 2023*). Current research had only male participants, similar to studies across the globe.*(Alemshet Aschalew Teshale and Zewdie Aderaw Alemu, 2018; Awasthi et al., 2019; Haghparast-Bidgoli et al., 2010; Pallavisarji et al., 2013; Rustagi et al., 2023)*. The exclusive male participation in the study may reflect the type of study participants who were predominantly drivers or shopkeepers/helpers. As women are usually not engaged in these jobs, their participation was absent in the study.

In the current study 90 percent of the potential first responders were aware about the requirement of emergency support and First aids in Road crash injuries. In one of the similar studies conducted in Uttarakhand, 96 percent of the respondents had adequate knowledge first aid and immediate reactions to post-crash victims with burns in case of road traffic accidents.(*Awasthi et al., 2019*).In another similar study at Jodhpur, 65.5% of the responders prioritized the emergency care of the post-crash victims, which is comparatively low when compared to the present research.(*Rustagi et al., 2023*). The higher awareness among potential first responders may be the reason for good knowledge regarding these domains in both studies. In contrast, only 2 percent of potential first responders in the current study understood the appropriate course of action to follow while handling airway obstruction in victims of RTAs. In a comparable survey conducted in Jodhpur, only 3% of participants correctly answered the question about the first response to respiratory difficulties experienced by motor vehicle crash victims.(*Rustagi et al., 2023*)**.** The shocking figures in this domain highlight the magnitude of the knowledge gap around one of the most essential life-saving issues for RTA victims. In another study conducted in Uttarakhand, 16.3

participants had adequate knowledge about handling airway obstruction.(Awasthi et al., 2019). A better response among participants from Uttarakhand may be linked to a higher percentage of bus drivers in the sample, for whom the required training is mandatory for getting a driving license.

Regarding critical handling and safe transportation of post-crash victims, 70 participants (19.55%) in the current study correctly answered the question on critical handling and transportation of the post-crash victim. In another study in Ethiopia, 20 percent of the participants were aware of the best position for transporting the post-crash victim.*(Alemshet Aschalew Teshale and Zewdie Aderaw Alemu, 2018)*. In a study conducted in Jodhpur, only 3 percent of participants were knowledgeable regarding the proper recovery position of the crash victim (*Rustagi et al., 2023*), which may be attributed to the poor training status and knowledge of the potential responders. Even if both the studies show similar responses, the knowledge gap is very critical since inappropriate handling and transportation of the post-crash victim might have significant consequences on the victims' chances of survival and recovery. The low percentage of correct responses raises the potential of a skills and knowledge gap among potential first responders. This could be caused by inadequate training, a lack of resources, or challenges in accessing information. In the present study, two hundred and nine participants (59.38%) correctly answered the question in response to the immediate aftermath when a crash victim has open fractures. In a comparable study conducted in Ethiopia with taxicab drivers, 40.9 percent of the respondents correctly responded by responding as immobilizing the patient using splinting.*(Alemshet Aschalew Teshale and Zewdie Aderaw Alemu, 2018)*. In two distinct studies conducted in Uttarakhand and Jodhpur, the correct responses to a similar question were 54.3% and 55.3%, respectively.(Awasthi et al., 2019; Rustagi et al., 2023)**,** which is comparable with the present study. According to these results from several research, there is a significant lack of information about how to handle one of the most common injuries sustained in motor vehicle crashes.

Of the 358 participants,170 respondents (47.49%) had adequate knowledge of the appropriate response to penetrating injury with bleeding. In a similar study conducted in Jodhpur, 31.5% of participants provided the correct responses related to this domain, while in Uttarakhand, 40% of participants provided correct responses on how to handle penetrating injury with bleeding in RTAs **(***Awasthi et al., 2019; Rustagi et al., 2023*). In a survey conducted in Ethiopia, 33% of participants gave the correct response to handling penetrating injury *(Alemshet Aschalew Teshale and Zewdie Aderaw Alemu, 2018)*. The present study highlights a higher awareness of appropriate immediate response to the penetrating injury with bleeding in the post-crash victim, which may be attributed to better training status among potential first responders. Even then, the level of awareness is lower, which necessitates the need for appropriate knowledge dissemination among potential first responders, as indicated by the diverse answers in various studies conducted at different times.

Within the last year, 69% of the potential first responders in the present research witnessed RTAs, and in 80% of those cases, emergency assistance was given. In a different Jodhpur survey, 70.5% of participants observed traffic accidents within a year, and 73.75% provided emergency assistance (*Rustagi et al., 2023*). Similar research was done in Uttarakhand, where 74.2% of participants noticed traffic accidents, and 91.5 offered immediate care to victims *(Awasthi et al., 2019***).** In another study done in Ethiopia among 785 taxi drivers, 59.5% witnessed at least one road crash in a year but provided emergency support in 44.3% of cases *(Alemshet Aschalew Teshale and Zewdie Aderaw Alemu, 2018)*. In one of the research studies in the Tumkur District of Karnataka, among 720 participants (186 auto drivers,167 Bus drivers,61 Ambulance drivers, etc), nearly 52% witnessed road crashes in one year, and 47% reported responding to the same (*Pallavisarji et al., 2013*). Although the first responses among first responders in the present study are like the other studies done in India, the subtle differences may be attributed to the study participants; geographical factors, awareness, and training on first aid and emergency support. The potential first responders in the various studies provided a range of emergency supports such as extrication,

hospital accompaniment, reaching out to the ambulance or police, administering first aid, etc., few individuals were unable to assist victims in RTAs. Forty-nine potential first responders were unable to provide emergency support to victims of RTAs. In a similar study conducted in the Tumkur district of Karnataka, roughly 37% of the participants refrained from giving any assistance, with the main contributing factors being uncertainty about what to do (42%) and worries about potential legal implications (29.8%) *(Pallavisarji et al., 2013***)**. In another study conducted in Uttarakhand, it was found that 19 out of 211 events had not received any emergency response from potential first responders *(Awasthi et al., 2019*). The main causes of this were fear of legal issues (95%) and lack of information (5%). Around 30% of participants in the Jodhpur study reported not being involved in or providing any kind of emergency support, with the majority citing insufficient knowledge as the primary limiting factor *(Rustagi et al., 2023)*. Unlike similar studies in different states, the proportion of potential first responders who were reluctant to render emergency support and first aid due to fear of legal complications was only 3 out of 49 cases (6%), which indicates the legal literacy about Good Samaritan law among participants. In the present study, 47% of the potential first responders held back from providing emergency support since they were not clear on what to do, which indicates a lack of knowledge and awareness, which is similar to the study conducted in Tumkur district, Karnataka. The proportion of participants who cited the reasons as knowledge insufficiency in Uttarakhand was 5%. In the case of the Uttarakhand study, most of the participants were taxi drivers working with the Government and private for whom training is mandatory for getting a driving license. The overall status of non-responsiveness from potential first responders indicate the necessity of comprehensive knowledge dissemination, which shall empower them with skills and alleviate unnecessary apprehensions over legal controversies.

Of the 358 participants 343(95.8%) responded that Government Hospitals are preferred over Private health facilities for institutionalized trauma care highlighting different factors. In a similar study in

Karnataka, the percentage of potential first responders dependent on Public health facilities was 50 percent **(Pallavisarji et al., 2013)**. The proximity to the road accident blackspots may explain the preferences of Government health facilities more in the current study. The study in Karnataka also emphasized that nearly 50% of the participants reported a longer travel time of 01hour or more for transporting the victim, which may be attributed to the dependency on the private hospital **(Pallavisarji et al., 2013).**

Out of the 247 road crashes witnessed by the potential first responders in the present study, the government-sponsored 108 ambulance services were requested in only 34(13.77%) incidents, and the services were availed in only 9(3.6%). In similar studies in Uttarakhand and Karnataka, the 108 Ambulance services were used for post-crash victim transfer in 47 percent and 48.7 percent respectively (**Awasthi et al., 2019; Rustagi et al., 2023**). The poor utilization of the services of 108 ambulances may be attributed to the unavailability of the Ambulances or delay in getting the services. There should be mechanisms in place for redistributing the 108 ambulances more toward the proximity of road accident-prone black spots.

It was found out through the present research that first responders who are adequate knowledge in first aid and emergency support are 3.75 times more likely to provide emergency assistance than those who are not. Comparable studies in Ethiopia identified that individuals with good knowledge of first aid were five times more likely to offer help to others than those without.*(Alemshet Aschalew Teshale and Zewdie Aderaw Alemu, 2018*). Training, knowledge, and improved intended practices(emergency responses towards victims) were found to be strongly associated in one of the researches done in Jodhpur, with an OR of 15.376 (2.149, 110.017**)** (*Rustagi et al., 2023*). In a different study conducted in the Tumkur District of Karnataka, PI concluded that potential responders are reluctant to administer first aid because they do not know the procedure and are afraid of possible consequences from the law.(*Pallavisarji et al., 2013*). Thus, different studies across the globe point towards the necessity of having adequate knowledge about first aid and

emergency support that may empower potential first responders to provide emergency assistance. Among the 358 participants who took part in the study, 162 (45.3%) received training in first aid and emergency assistance from various sources. In a previous study conducted in Karnataka, 62% of the participants received first-aid training. In one of the earlier research projects conducted in Jodhpur, the percentage of first responders who got first aid training was 3.5%.*(Rustagi et al., 2023*). The trained percentages of the potential respondents in the Uttarakhand study were 1.2% *(Awasthi et al., 2019*) and Ethiopia 26.8% *(Alemshet Aschalew Teshale and Zewdie Aderaw Alemu, 2018*)**.** The disparities observed among various studies indicate that there are inadequacies in training about first aid and emergency support, which has hindered the progress of prehospital care. It was found through the present research that training in first aid and emergency support was a critical factor in predicting the level of knowledge of the potential first responders.

4.2 Strengths and Limitations

Strengths: This study is one of the first ones conducted in Kerala that involves community-based first responders, such as taxi and auto drivers, shopkeepers, and shop workers. As part of the study, the PI could visit all 35 road accident blackspots in the district and gather data from the potential first responders, that would help shed light on the facilitators and barriers at the local level. The study's findings could enhance community safety and mitigate the adverse consequences of traffic accidents. Engaging community members as stakeholders promotes a sense of dedication and responsibility in addressing specific issues.

Limitations:

The participants in this study including taxi-auto drivers, shopkeepers, and store workers, may not accurately represent the larger population of community-based first responders whose experiences, attitudes, and resource availability may differ, which limits the generalizability of the findings

exclusively to black spots. There is every possibility that the participants should actual have rendered responses that were socially desirable as per the perception of the participants rather than reflecting their true attitudes or behaviors, contributing to the social desirability bias. The study participants in the present research are completely from the male gender, which again is a limitation.

4.3 Recommendations:

The following recommendations can be made to address and mitigate difficulties based on the current study on the barriers and facilitators of community-based first responders in providing first aid and emergency support.

- **First Aid Training**: Implement regular first aid training programs, primarily targeting taxi-auto drivers and other potential first responders in the community. The training should focus on critical handling of the post-crash victims, providing emergency support to the victims with breathing difficulty, open fractures, penetrating injuries, and external bleeding.
- **Awareness Campaigns**: A special awareness drive to educate the public about the significance of first aid in the aftermath of RTAs must be implemented. These campaigns can also address common fears and misconceptions, such as legal complications. Start widespread public awareness attempts to inform people about the significance of emergency assistance and the legal safeguards available to first responders under "Good Samaritan" laws.
- **System Support**: Strengthen system support from health and police departments which could improve the interdepartmental coordinated efforts which may facilitate the potential first responders to come forward to render emergency support to the victims.
- Implement awareness programs about the government-sponsored free ambulance services and their facilities for the transportation of trauma victims.
- Strategize the ambulance distribution and station points to ensure the timely availability of the services of 108 ambulances in the road accident blackspots.

By addressing these recommendations, stakeholders can work together to create safer road environments and empower communities to respond effectively to motor vehicle crashes and react to traffic incidents efficiently, thereby saving lives and reducing the demand for medical resources.

4.4 Conclusion:

Road traffic injuries (RTIs) cause significant economic costs, fatalities, and disability, and they pose a severe threat to public health. First aid and urgent assistance at the accident scene can significantly improve the victim's chances of survival. Improving the first aid knowledge of community-based first responders—such as shopkeepers and auto-taxi drivers can be a crucial strategy in handling the aftermath of RTAs. The present study highlights that composite knowledge of first aid and emergency support is a significant indicator of giving first aid and emergency support to victims of road traffic accidents. The study also highlights the importance of first aid training, awareness, and the impact of current occupational status, notably as a taxi or auto driver, in facilitating immediate assistance and first aid to victims of traffic accidents. The results reinstate the vital role of first responders in the community in reducing the adverse consequences of traffic accidents. Rapid and successful first aid has the potential to dramatically lower the death and morbidity rates linked to motor vehicle crashes. Further exploratory research to understand the perspectives of other potential first responders not covered in the current research may give input for the policy-level implications in the long run.

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Annexure 1

Road accident blackspots in Alappuzha

Name of Police Station	Name of Landmark	Name of Location	Name of Road	Type of Road
Ambalappuzha	325m before and 125m after Sree Kuruttu Bhagavathy Temple	Thottappally Juma Masjid	National Highway 66 (NH 66)	NH
Pattanakkadu	Pattanakkadu Grama Panchayath Office - SCUGVHSS Pattanakkadu	Mahadeva Temple, Pattanakkadu	National Highway 66 (NH 66)	NH
Punnapra	Punnapra North Post Office - Punnapra Brethren Assembly Church	Paravoor Junction	National Highway 66 (NH 66)	NH
Aroor	Muthoot, Eramalloor - 50m before Madeena Supermarket	Eramalloor	National Highway 66 (NH 66)	NH
Punnapra	Assembly Road Junction - IOC Pump, Punnapra	Kappakada, Punnapra	National Highway 66 (NH 66)	NH

Punnapra	140m after Reliance - 90m after Chinmaya	Thookkukulam	National Highway 66 (NH 66)	NH
Kareelakulangara	Sree Dharma Sastha Temple - 120m after Ramapuram Junction	Ramapuram Junction	National Highway 66 (NH 66)	NH
Nooranadu	State Bank of India - Head Post Office, Nooranadu	Nooranadu	Kayamkulam - Pathanapuram (SH 5)	SH
Vallikunnam	50m before South Indian Bank - IPC Bethel Church	Kattanam	Kayamkulam - Pathanapuram (SH 5)	SH
Harippad	K V Jetty Junction- 50m before Puthenpurayil Fm Tyre Harippad	Kumarapuram, Thamallackal	National Highway 66 (NH 66)	NH
Ambalappuzha	200m after SVD UP School - 200m after BP Pump	Purakkad	National Highway 66 (NH 66)	NH
Aroor	100m before Aroor Police Station - 100m after St. Mary's Church Chandiroor	Chandiroor	National Highway 66 (NH 66)	NH

Kayamkulam	Indus Motors, Kottukulangara - Masjid AlTaqwa	Kottukulangara	National Highway 66 (NH 66)	NH
Kuthiyathode	Kelamkulangara Bhagavathi Temple - Upasana Auditorium	Kuthiathode	National Highway 66 (NH 66)	NH
Kuthiathode	Pattukulangara Devi Temple - Indian Coffee House, Thuravoor	Thuravoor	National Highway 66 (NH 66)	NH
Chengannur	Anjalimoodu Junction - Mathews Mar Athanasius Residential Central School	Anjalimoodu Junction	National Highway 183 (NH 183)	NH
Kayamkulam	130m before North Masjid - 55m before Lamsy Hypermarket and Wedding Centre	Oachira Premier Junction	National Highway 66 (NH 66)	NH
Kayamkulam	65m after Federal Bank - 75m after Power City Hero	Kottamkulangara	National Highway 66 (NH 66)	NH

Kuthiyathode	Reliance Petrol Pump, Thuravoor - Chittayil Glass House (200m after Thuravoor Junction)	Thuravoor Junction	National Highway 66 (NH 66)	NH
Aroor	ICICI Bank ATM, Aroor - SBI Bank Aroor	Aroor Main Junction	National Highway 66 (NH 66)	NH
Harippad	120m after Kunjanvathukal Temple - 120m before Karuvatta Post Office	Ashramam, Karuvatta South	National Highway 66 (NH 66)	NH
Harippad	SBI Harippad - 190m after Harippad Highway Junction	Harippad Junction	National Highway 66 (NH 66)	NH
Cherthala	70m after NEXA Cherthala - 100m before St Marys School Road Junction	Pullattuvadakkeveli, Cherthala	National Highway 66 (NH 66)	NH
Harippad	50m before SBI ATM - 180m before Karthikappalli CARD BANK	Danapady Junction, Harippad	National Highway 66 (NH 66)	NH

Pattanakkadu	50m before The Alleppey District Cooperative Bank, Pattanakkadu - Govt LP School Pattanakkadu	Pattanakkadu	National Highway 66 (NH 66)	NH
Kayamkulam	250m after ONK Jn - Indus Motors	Kayamkulam	National Highway 66 (NH 66)	NH
Kayamkulam	100m before TEXMO Home Appliances - NCS TATA Motors Kayamkulam	Highway Palace Kayamkulam	National Highway 66 (NH 66)	NH
Ambalappuzha	BKM Hospital - 50m after Payalkulangara Sree Devi Temple	Near Ambalappuzha Junction	National Highway 66 (NH 66)	NH
Aroor	Primary Health Centre, Aroor - Kelton Road Jn	Temple Junction, Aroor	National Highway 66 (NH 66)	NH
Harippad	IOC Pump - Harippad Government Boys High School	Madhava Junction, Harippad	National Highway 66 (NH 66)	NH

Nooranadu	Federal Bank ATM - KSEB Section Office, Charummoodu	Charummoodu	National Highway 183 (NH 183)	NH
Mararikkulam	50m after Sacred Heart Church - Mayithara Market	Mayithara	National Highway 66 (NH 66)	NH
Mararikkulam	Mararikkulam North Panchayat Office - 50m after S L Puram	Mararikkulam	National Highway 66 (NH 66)	NH
Punnapra	CSI Church - Carmel Road Junction	Carmel College Of Engineering	National Highway 66 (NH 66)	NH
Harippad	110m after Hotel Saugandhika Residency - 50m before South Indian Bank ATM	Nangiarkulangara, Kavala junction	National Highway 66 (NH 66)	NH

Annexure 2

Sociodemographic factors associated with responses of the potential first responders to the questions on First Aid and emergency support

Q1: Most common causes of immediate fatality in Road traffic accidents

Variable	Q1. Most common causes of immediate fatality in Road traffic accidents		p-value (Chi-Square test)	*OR (95%CI)
	Wrong response (%)	Correct response (%)		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	37(55.22)	30(44.78)	<0.001	**Reference**
Taxi and auto drivers	88(30.24)	203(69.76)		**2.85 (1.654 to 4.895)**
Educational status(n=358)				
Up to Secondary education (%)	93(41.52)	131(58.48)	0.001	**Reference**
>Secondary education (%)	32(23.88)	102(76.12)		**2.263 (1.403 to 3.649)**
Duration of engagement in the current occupation(n=358)				
<01 year	42(44.68)	52(55.32)	0.024	**Reference**
> 01 year	83(31.44)	181(68.56)		**1.761 (1.087 to 2.854)**
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	107(37.41)	179(62.59)		**Reference**

08.00 PM to 08.00 AM	18(25)	54(75)	0.053	**1.793 (0.999-3.218)**
Age group of the responders (n=358)				
Age <48 years	**48(31.17)**	**106(68.83)**	**0.219**	**Reference**
Age>= 48 years	**77(37.75)**	**127(62.25)**		**0.747 (0.479 -1.163)**

Q2: First response towards post-crash victim immediately following the crash

Variable	**Q2. First response towards post-crash victim immediately following the crash**		**p-value (Chi-Square test)**	***OR (95%CI)**
	Wrong response (%)	**Correct response (%)**		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	**8(11.94)**	**59(88.06**	**0.057**	**Reference**
Taxi and auto drivers	**16(5.5)**	**275(94.5)**		**2.331 (0.953 to 5.698)**
Educational status(n=358)				
Up to Secondary education (%)	**16(71.43)**	**208(28.57)**	**0.668**	**Reference**
>Secondary education (%)	8(5.97)	126(94.03)		**1.212 (0.504 -2.912)**

Duration of engagement in the current occupation(n=358)				
<01 year	11(11.7)	83(88.30)		**Reference**
> 01 year	13(4.92)	251(95.08)	**0.031**	**2.559 (1.104 to 5.930_**
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	19(6.64)	267(93.36)		**Reference**
08.00 PM to 08.00 AM	5(6.94)	67(93.06)	**1.00**	**0.954 (0.344 -14.053)**
Age group of the responders (n=358)				
Age <48 years	13(8.44)	141(91.56)		**Reference**
Age>= 48 years	11(5.39)	193(94.61)	**0.289**	**1.618 (0.704 -3.716)**

Q3: Necessity of safe and critical handling of the post-crash victim

Variable	**Q3. Necessity of safe and critical handling of the post-crash victim**		**p-value (Chi-Square test)**	***OR (95%CI)**
	Wrong response (%)	**Correct response (%)**		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	56(83.58)	11 (16.42)		**Reference**
Taxi and auto drivers	232 (79.13)	59 (20.27)	**0.608**	**1.295 (0.639 -2.625)**

Educational status(n=358)				
Up to Secondary education (%)	183(81.7)	41(19.3)	**0.492**	**Reference**
>Secondary education (%)	105(78.36)	29(21.64)		**1.233 (0.724 -2.100)**
Duration of engagement in the current occupation(n=358)				
<01 year	79(84.04	15(15.96)	**0.364**	**Reference**
> 01 year	209(79.17)	55(20.83)		**1.386 (0.740 -2.594)**
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	240(83.92)	46(16.08)	**0.002**	**Reference**
08.00 PM to 08.00 AM	48(64.86)	24(35.14)		**2.609 (1.457 to 4.672)**
Age group of the responders (n=358)				
Age <48 years	115(74.68)	39(25.32)	**0.022**	**Reference**
Age>= 48 years	173(84.8)	31(15.2)		**0.528 (0.312 to 0.895)**

Q4: Knowledge on the removal of helmet from the head of a conscious Road crash victim

Variable	Q4. Knowledge on the removal of helmet from the head of a conscious Road crash victim		p-value (Chi-Square test)	*OR (95%CI)
	Wrong response (%)	Correct response (%)		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	49(73.13)	18(26.87)	**0.003**	**Reference**
Taxi and auto drivers	153(52.58)	138(47.42)		**2.46 (1.365 to 4.417)**
Educational status(n=358)				
Up to Secondary education (%)	137(61.16)	87(38.84)	**0.021**	**Reference**
>Secondary education (%)	65(51.49)	69(48.51)		**1.672 (1.085 to 2.576)**
Duration of engagement in the current occupation(n=358)				
<01 year	59(62.77)	35(37.23)	**0.183**	**Reference**
> 01 year	143(54.17)	121(45.83)		**1.426 (0.880 -2.313)**
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	164(56.94)	122(43.06)	**0.508**	**Reference**
08.00 PM to 08.00 AM	38(52.78)	34(47.22)		**1.203 (0.716-2.020)**

Age group of the responders (n=358)				
Age <48 years	83(53.9)	71(46.1)	**0.451**	**Reference**
Age>= 48 years	119(58.3)	85(41.7)		**0.835 (0.548-1.273)**

Q5: First response towards post-crash victim with penetrating injury

Variable	**Q5. First response towards post-crash victim with penetrating injury**		**p-value (Chi-Square test)**	***OR (95%CI)**
	Wrong response (%)	**Correct response (%)**		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	50(74.63)	13(19.40)	**<0.001**	**Reference**
Taxi and auto drivers	138(47.42)	56(19.24)		**3.26 (1.796 to 5.921)**
Educational status(n=358)				
Up to Secondary education (%)	134(59.82)	90(40.18)	**<0.001**	**Reference**
>Secondary education (%)	54(40.3)	80(59.7)		**2.206 (1.426 to 3.413)**
Duration of engagement in the current occupation(n=358)				
<01 year	54(57.45)	40(42.55)	**0.281**	**Reference**
> 01 year	134(50.76)	130(49.24)		**1.310**

				(0.815 -2.106)
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	155(54.19)	131(45.81)	**0.235**	**Reference**
08.00 PM to 08.00 AM	33(45.83)	39(54.17)		**0.607 (0.398 to 0.926)**
Age group of the responders (n=358)				
Age <48 years	70(45.45)	84(55.55)	**0.025**	**Reference**
Age>= 48 years	118(57.84)	86(42.16)		**0.607 (0.398 -0.926)**

Q6: First response towards post-crash victim with open fracture and bone jutting out of the body

Variable	**Q6. First response towards post-crash victim with open fracture and bone jutting out of the body**		**p-value (Chi-Square test)**	***OR (95%CI)**
	Wrong response (%)	**Correct response (%)**		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	27(40.30)	40(59.70)	**0.891**	**Reference**
Taxi and auto drivers	122(41.92)	169(58.08)		**0**.935 (0.544 -1.606)
Educational status(n=358)				
Up to Secondary education (%)	86(38.39)	138(61.61)		**Reference**

>Secondary education (%)	63(47.01)	71(52.99)	**0.121**	0.702 (0.455-1.083)
Duration of engagement in the current occupation(n=358)				
<01 year	38(40.43)	56(59.57)	**0.809**	**Reference**
> 01 year	111(42.05)	153(57.95)		**0**.935 (0.579 -1.510)
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	111(38.81)	175(61.19)	**0.033**	**Reference**
08.00 PM to 08.00 AM	38(52.78)	34(47.22)		**0.568 (0.337 to 0.995)**
Age group of the responders (n=358)				
Age <48 years	74(48.05)	80(51.95)	**0.040**	**Reference**
Age>= 48 years	75(36.76)	129(63.24)		**1.591 (1.040 to 2.434)**

Q7: First response towards post-crash victim with respiratory distress and chocking

Variable	**Q7. First response towards post-crash victim with respiratory distress and chocking**		**p-value (Chi-Square test)**	***OR (95%CI)**
	Wrong response (%)	**Correct response (%)**		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	66(98.51)	1(1.49)		**Reference**

Taxi and auto drivers	287(98.63)	5(1.37)	**0.941**	**0.920 (0.101 -8.365)**
Educational status(n=358)				
Up to Secondary education (%)	222(99.1)	2(0.9)	**0.367**	**Reference**
>Secondary education (%)	131(97.76)	3(2.24)		**2.542 (0.419 -15.412)**
Duration of engagement in the current occupation(n=358)				
<01 year	93(98.94)	1(1.06)	**1.00**	**Reference**
> 01 year	260(98.48)	4(1.52)		**1.431 (0.158-12.965)**
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	282(98.6)	4(1.4)	**1.00**	**Reference**
08.00 PM to 08.00 AM	71(98.61)	1(1.39)		**0.993 (0.109 -9.022)**
Age group of the responders (n=358)				
Age <48 years	153(99.35)	1(0.65)	**0.396**	**Reference**
Age>= 48 years	200(98.03)	4(1.97)		**3.060 (0.339 – 27.655)**

Q8: First response towards post-crash victim with Seizure

Variable	Q8. First response towards post-crash victim with Seizure		p-value (Chi-Square test)	*OR (95%CI)
	Wrong response (%)	Correct response (%)		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	54(80.60)	13(19.40)	0.976	**Reference**
Taxi and auto drivers	235(80.76)	56(19.24)		**0.990 (0.506 -1.939)**
Educational status(n=358)				
Up to Secondary education (%)	178(79.46)	46(20.54)	0.490	**Reference**
>Secondary education (%)	111(82.84)	23(17.16)		**0.802 (0.461 -1.395)**
Duration of engagement in the current occupation(n=358)				
<01 year	76(80.85)	18(19.15)	1.00	**Reference**
> 01 year	213(80.68)	51(19.32)		**1.011 (0.556 -1.838)**
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	229(80.06)	57(19.94)	0.618	**Reference**
08.00 PM to 08.00 AM	60(83.3)	12(16.7)		**0.804 (0.405 -1.593)**

Age group of the responders (n=358)				
Age <48 years	123(79.87)	31(20.13)	**0.787**	**Reference**
Age>= 48 years	166(81.37)	38(18.63)		**0.908 (0.535 - 1.541)**

Q9: First response towards post-crash victim with Burn injury

Variable	**Q9. First response towards post-crash victim with Burn injury**		**p-value (Chi-Square test)**	***OR (95%CI)**
	Wrong response (%)	**Correct response (%)**		
Current occupational status				
Non-Drivers (Shopkeeper/shop worker)	7(10.45)	60(89.55)	**0.608**	**Reference**
Taxi and auto drivers	15(5.15)	276(94.85)		**2.147 (0.839 to 5.493)**
Educational status(n=358)				
Up to Secondary education (%)	14(6.25)	210(93.75)	**1.000**	**Reference**
>Secondary education (%)	8(5.97)	126(94.03)		**1.050 (0.428 to 2.573)**
Duration of engagement in the current occupation(n=358)				
<01 year	5(5.32)	89(94.68)		**Reference**

> 01 year	17(64.39)	247(35.61)	**0.807**	**0.816 (0.293 to 2.278)**
Timing of daily occupational engagement(n=358)				
08.00 AM to 08.00 PM	20(6.99)	266(93.01)	**0.272**	**Reference**
08.00 PM to 08.00 AM	2(2.78)	70(97.22)		**2.632 (0.601 to 11.53)**
Age group of the responders (n=358)				
Age <48 years	11(7.14)	143(92.86)	**0.513**	**Reference**
Age>= 48 years	11(5.39)	193(94.61)		**1.350 (0.569to 3.20)**

INTERVIEW SCHEDULE

Date:

Sl No	Question	Coding Criterion		Code options	Variable
1	**Name of the Blackspot) to be filled by the investigator)**				
PARTICIPANT IDENTIFICATION INFORMATION					
2	Participant ID number **(to be filled by the investigator)**				
01. INFORMATION ABOUT OCCUPATION					
3	What is your current occupation?	☐	Taxi Driver	0	OCCUP
		☐	Autorickshaw Diver	1	
		☐	Shopkeeper/working in the shop	2	
		☐	**Others**	**Please specify**	
4	How long have you been working in the present place	☐	<06 months	0	YES
		☐	>6months but <01 year	1	
		☐	>01 year	2	
5	Timing of engagement in the present job	☐	Daytime (up to 06 pm)	0	TOE
		☐	From morning till 08 pm	1	
		☐	Night time (b/w 8pm & 08am)	2	
		☐	**Others**	**Please specify**	
02. SOCIO-DEMOGRAPHIC INFORMATION					
6	Age	☐	Completed age in years as on01.01.2024		AGE
7	Gender	☐	Male	0	GENDER
		☐	Female	1	
		☐	Transgender	2	
		☐	Not specified	3	

8	Educational Qualification (**Highest level of Education attained so far**)	☐	Informal Education	**0**	EDU
		☐	Formal-Primary Education (**up to 7th Std**)	1	
		☐	Secondary education (**Up to 10th Std**)	2	
		☐	Senior Secondary Education (**Higher secondary**)	3	
		☐	Graduate and above	4	
9	Distance of workplace from place of residence	☐	<2KM	0	POR
		☐	2-5KM	1	
		☐	>5KM	2	
03. BASIC KNOWLEDGE ABOUT FIRST AID IN ROAD CRASH INJURIES					
10	Have you ever heard of First Aid?	☐	No	0	FIRST AID
		☐	Yes	1	
11(a)	Have you ever heard of First Aid for the Road Crash victims? (If the answer is '**YES'** go to Question number 11(b). If the answer is '**No**' go to question Number 13)	☐	No	0	RTA-FIRST AID
		☐	Yes	1	
11(b)	From where did you hear regarding the First Aid for Road crash victims? (Mention multiple options possible)	☐	Media (TV/Radio/News Paper etc.)	0	RTA-FA-INF
		☐	From colleagues/co-workers/ friends	1	
		☐	Messages of Health department/Motor vehicle Department /Police)	2	
		☐	**Others**	**Please specify**	

12(a)	Have you ever attended any training programs related to First Aid in Road crash injuries in the past 03 years? (If the answer is '**YES**' go to Question number 12(b). If the answer is '**No**' go to question Number 13)	☐	No	0	RA-FA-TRNG
		☐	Yes	1	
12(b)	What was the training you attended regarding First Aid in Road Crash Injuries?	☐	Training by Police	0	TRNG-CORD
		☐	Training by Road Safety Authority	1	
		☐	Training by Motor Vehicle dept.	2	
		☐	Training by Health dept.	3	
		☐	Training by NGO	4	
		☐	**Others**	**Please specify**	
12 (c)	When was the last training you attended regarding First Aid in Road Crash Injuries?	☐	Within in last 06 months	0	LAST-TRY
		☐	06 months to 01 year	1	
		☐	>01 year back	2	
13	As per your knowledge what all causes following a Road Crash injury can lead to immediate death of the Victim?	☐	Not Sure	0	RC-DEATH
		☐	Haemorrhage	1	
		☐	Breathing difficultie secondary to injuries	2	
		☐	Brain injury	3	
		☐	Bone fracture	4	
		☐	Internal injuries	5	
		☐	**Others**	**Please specify**	

14	As per your knowledge, what shall be the first step to be followed at the accident site following a Road Crash injury? (multiple options possible?)	☐	Don't know	0	RC-IMMED CARE
		☐	Calling for help	1	
		☐	Safe Extrication of the victims from the vehicles or accident site	2	
		☐	Safeguarding the airway of the victim	3	
		☐	Clearing the victims from other objects to avoid further injuries like burn	4	
		☐	Applying pressure on the bleeding site	5	
		☐	Informing the police	6	
		☐	Calling the ambulance	7	
		☐	**Others**	**Please specify**	
15	In your opinion how can the helmet be removed from the head of a bike passenger who has suffered a road crash? **(Person is conscious)**	☐	Don't know	0	REM-HELMET
		☐	Allow the person to remove the helmet on their own	1	
		☐	Break the helmet and remove	2	
		☐	Slowly remove the helmet without moving the neck by keeping the person lying straight on the floor	3	
		☐	Call for emergency help to hospitalize without manipulating the helmet	4	

16	How the airway can be safeguarded for the Road-crash victim who is suffering from breathing difficulty/choking? (**Person is unconscious**)	☐	Don't know	0	BREATHING
		☐	Check for breathing	1	
		☐	Calling for emergency help	2	
		☐	Trying artificial respiration	3	
		☐	Clean the mouth, oral cavity, and nostril to make the airway patent after allowing the individual to lie on the floor.	4	
		☐	Will hurry to the hospital	5	
17	What is the most appropriate thing to do in cases where some sharp object penetrates the body parts with bleeding from the post-crash victim?	☐	Don't know	0	PENETRATING IN
		☐	Call for emergency help	1	
		☐	Remove the sharp object and apply pressure to arrest bleeding	2	
		☐	Take the person to the hospital without attempting the remove the penetrated object	3	
18	What would you do when you see the post-crash victim develop fits/seizures?	☐	Enable the person to hold a key or metallic object	0	SEIZURE
		☐	Make the person lie on the left side	1	
		☐	Give some water or any other liquid to drink	2	
		☐	Shall hold the person not allowing to move body vigorously	3	
		☐	Not sure what to do	4	
19	What is the appropriate thing to be done when you see broken bone jutting out of the post-crash victim at the injured	☐	Don't allow the limb or body part to move	0	OPEN FRACTURE
		☐	Clean the wound with spirit or betadine	1	

	site following a Road crash?	☐	The wound must be closed immediately with some clothes	2	
		☐	Support and immobilize the limb by using some external supports like wooden pieces and take it to the Hospital	3	
		☐	Not sure what to do	4	
20	What is the best thing to do for a post-crash victim with burns (the person is conscious)	☐	Remove the clothing and other materials from the burn site	0	BURNS
		☐	Remove the objects from the body which can cause further burns	1	
		☐	Pour water onto the body parts with burns	2	
		☐	Apply toothpaste or sand-like materials over the burns	3	
		☐	Call and wait for the ambulance, to take you to the hospital	4	
		☐	Not sure what to do	5	
04. AWARENESS ABOUT ACCESSING HEALTH SERVICES					
21 (a)	Which vehicle is most appropriate to transport the road crash victim?	☐	Any vehicle available at the site	0	TRANS
		☐	Car	1	
		☐	Auto	2	
		☐	Ambulance	3	
21(b)	Has your vehicle (**either owned or traveling**) been used for transporting the road crash victims to the hospital in the past 01 years? If the answer is "**Yes**" go to question 21© If the answer is '**No**' go to	☐	No	0	VEHICLE
		☐	Yes	1	

	question Number 22 (a)				
21(c)	What was the incident situation in which your vehicle (**either owned or traveling**) been used for transporting the road crash victims	☐	Our vehicle was involved in the accident	0	VEHCL -USED
		☐	We were in the vicinity of a Road crash during our travel	1	
		☐	We saw the victim by the side of the road during our travel	2	
		☐	The public sought our help to transport the post-crash victim	3	
		☐	Police directed us to transport the post-crash victim	4	
		☐	**others**	**Please specify**	
21(d)	There were any incidents in which your vehicle **(either owned or traveling)** could not be used for transporting the road crash victims? If the answer is "**Yes"** go to question 21(e) If the answer is '**No**' go to question Number 22 (a)	☐	No	0	VEHCL -NOT-USED
		☐	Yes	1	
21(e)	What was the reason for not engaging in using your vehicle for transporting the post-crash victim to the Hospital?	☐	The vehicle got damaged in the same accident	0	VEHCL -NOT USED-REAS
		☐	We were also injured in the same accident and hence could not drive	1	

		☐	I did not know the hospital to go to.	2	
		☐	We were in a hurry with some emergencies.	3	
		☐	Were worried about the legal complications	4	
22(a)	Do you have any idea if Govt. sponsored Ambulances are giving services to the Road Accident victims in Alappuzha (If the answer is '**YES**' go to Question number 22(b). If the answer is '**No**' go to question Number 23)	☐	No	0	AMBUL
		☐	Yes	1	
22(b)	Do you know the station point of the nearest Government ambulance	☐	No	0	AMB-POINT
		☐	Yes	1	
22(c)	Are there any additional facilities available in the Govt sponsored ambulance than the normal one	☐	Not sure	0	SPEC-AMB
		☐	Nurse also available	1	
		☐	Oxygen and emergency treatment available in the ambulance which will be given by the Nurse	2	
22(d)	How can you get the services of Govt sponsored Ambulance	☐	Calling fire force	0	AMB-NUM
		☐	Calling police	1	
		☐	Calling toll-free number (108)	2	
		☐	Calling Hospital	3	
22(e)	Do you have any idea regarding the payment for the above ambulance	☐	Not sure	0	AMB-PAY
		☐	108 ambulance is free	1	
		☐	Charges will be mentioned by the driver	2	

22(f)	Have you ever tried the Govt sponsored Ambulance service? ((If the answer is 'YES' go to Question number 22(g). If the answer is 'No' go to question Number 23)	☐	No	0	ACC-AMB
		☐	Yes	1	
22(g)	Whether you got the Ambulance as requested if the answer is 'No' go to question number 22(h), If the answer is 'Yes' go to question number 23)	☐	No	0	AVAIL-AMB
		☐	Yes	1	
22(h)	Any reason for not using the Ambulance	☐	Ambulance was not available	0	AMB-REASON
		☐	Ambulance came late	1	
		☐	Got another vehicle/ambulance early	2	
23	Why is it important to handle the injured person during extrication and transport with utmost care?	☐	Not sure about the reasons	0	HANDLING
		☐	Rough handling will increase the depth of the injury & aggravate the bleeding	1	
		☐	Rough handling can cause injury to the nerves and may complicate fractures	2	
		☐	**Others**	**Please specify**	
24(a)	In your opinion where should the Road crash victims be taken for treatment? (If the answer is government Hospital, please go to question No. 24(b), otherwise question Number 25	☐	Nearby government Hospital	0	FACILITY
		☐	Nearby Private Hospital	1	
		☐	**Others**	**Please specify**	

24(b)	Which type of Government Hospital is preferred?	☐	Primary Health Centre	0	GOVT HOSP
		☐	Taluk Hospital	1	
		☐	Medical College	2	
24(c)	Why are you suggesting a Government Hospital? (Multiple options possible)	☐	Proximity / Nearby	0	PREFERENCE-GOVT
		☐	Police case-related documentation will be easy	1	
		☐	The cost of care will be less	2	
		☐	Further referral will be easy if needed	3	
		☐	We do not know about the insurance cards the injured family/person had	4	
		☐	**Others**	**Please specify**	
25	Why are you suggesting a Private Hospital?	☐	All investigations will be available	0	PVT
		☐	Specialist Doctor will be there all the time	1	
		☐	Life can be saved better	2	
		☐	Convenience	3	
		☐	**Others**	**Please specify**	
26(a)	Have you ever had an opportunity to render first aid or any other care for Road crash victims in the past 01 years? (If the answer is 'YES' go to Question number 26(b)). If the answer is 'No' go to question Number 27)	☐	No	0	OPPORT
		☐	Yes	1	

26(b)	How many times have you had the opportunity to render first aid or any other care for Road crash victims in the past 01 years?	☐	01	0	NUMB OF OPP
		☐	02	1	
		☐	**Others**	**Please specify**	
26(c)	Which type of Road crash was that?	☐	Hit and run	0	CRASH-TYPE
		☐	A pedestrian met with a Road crash	1	
		☐	The bicyclist met with a Road crash	2	
		☐	Two-wheeler (motorbike-like) met with a Road crash	3	
		☐	Three-wheeler met with Road crash	4	
		☐	Four-wheeler met with Road crash	5	
		☐	Road crash involving extractions	6	
		☐	Road crash involving mass casualty	7	
		☐	**Others**	**Please specify**	
26(d)	Which type of service do you give?	☐	Was not able to do anything	0	EMERG-CARE
		☐	Helped in extrication	1	
		☐	Helped in/provided First Aid to the victims	2	
		☐	Called for police help	3	
		☐	Called the Ambulance	4	
		☐	Accompanied to the road crash	5	

			victims to the Hospital		
		☐		**Please specify**	
05. BARRIERS IN PROVIDING FIRST AID AND EMERGENCY CARE TO ROAD CRASH VICTIMS					
26(e)	How many times have you not helped the road crash victims in the past 01 years?	☐	NIL	0	COUNT-NOT HELP
		☐	01	1	
		☐	>01	2	
26(f)	What prevented you from offering immediate care to the road crash victim in the above incidents?	☐	Not having any idea about what I had to do?	0	RELUCTANT
		☐	Worried about the complications of my helping deed to the life of the victim	1	
		☐	Fear about the legal complications?	2	
		☐	Was trying to help from others to support the victim?	3	
		☐	Was trying for an ambulance and the police help	4	
		☐	**Others**	**Please specify**	
06. FACILITATORS IN PROVIDING FIRST AID AND EMERGENCY CARE TO THE ROAD CRASH VICTIMS					
27	In your opinion what should be our attitude towards the road crash victim? (Multiple options possible)	☐	It is our moral responsibility	0	RESP
		☐	Unnecessary headaches and legal complications	1	
		☐	Providing immediate care, and accessing the	2	

			hospital are to be our priorities.		
		☐	**Others**	**Please specify**	
28	In your opinion what are the facilitators for helping the road crash victim?	☐	Humanitarian approach	0	FACILITATE
		☐	Responsible public towards an emergency	1	
		☐	Community support	2	
		☐	Legal support	3	
		☐	System support from Health and police	4	
		☐	Training and skill acquisition	5	
		☐	**Others**	**Please specify**	
29	In your opinion what may be the best to motivate the common man to offer first aid and a helping hand to the road crash victim?	☐	Legal protection	0	MOTIV
		☐	Training and Awareness	1	
		☐	Community support	2	
		☐	Support from Hospitals	3	
		☐	Rewarding	4	
		☐	**Others**	**Please specify**	

ഇന്റർവ്യൂ ഷെഡ്യൂൾ

തീയതി :

ക്രമ നമ്പർ	ചോദ്യം	കോഡിംഗ് മാനദണ്ഡങ്ങൾ		കോഡ് ഓപ്ഷനുകൾ	വേരിയബിൾ
01	ബ്ലാക്സ്പോട്ടിന്റെ സ്ഥലപ്പേര്/ഐ.ഡി. നമ്പർ (അന്വേഷകൻ പൂരിപ്പിക്കണം				
പങ്കെടുക്കുന്നയാളിന്റെ തിരിച്ചറിയൽ വിവരങ്ങൾ					
02	പങ്കെടുക്കുന്നയാളിന്റെ ഐ.ഡി. നമ്പർ. (അന്വേഷകൻ പൂരിപ്പിക്കണം)				
01. തൊഴിൽ സംബന്ധിയായ വിവരങ്ങൾ					
03	നിങ്ങളുടെ ഇപ്പോഴത്തെ തൊഴിൽ എന്താണ്?	☐	ടാക്സി ഡ്രൈവർ	0	OCCUP
		☐	ഓട്ടോറിക്ഷ ഡ്രൈവർ	1	
		☐	കട നടത്തുന്നു/കടയിൽ ജോലി ചെയ്യുന്നു.	2	
		☐	**മറ്റുള്ളവ**	**വ്യക്തത വരുത്തുക**	
4	ഇപ്പോഴുള്ള സ്ഥലത്ത് എത്ര കാലമായി ജോലി ചെയ്യുന്നു.	☐	<06 മാസം	0	YES
		☐	>6 മാസം മുതൽ <01 വർഷം വരെ	1	
		☐	>01 വർഷം	2	
5	ദിവസേനയുള്ള ജോലിയുടെ സമയക്രമം എങ്ങനെയാണ്	☐	പകൽ സമയം (വൈകിട്ട് 06 മണിവരെ)	0	TOE
		☐	ഇവിലെ 08.00 മുതൽ രാത്രി 08.00 വരെ	1	
		☐	രാത്രി സീം (b/w 08 pm. & 08 am.	2	
		☐	**മറ്റുള്ളവ**	**വ്യക്തതവരുത്തുക**	
02. സാമൂഹിക - ജനസംഖ്യാ വിവരങ്ങൾ					
6	പ്രായം	☐	01.01.2024 - ന് പൂർത്തിയായ പ്രായം (വർഷ കണക്കിൽ)		AGE
7	ലിംഗഭേദം	☐	പുരുഷൻ	0	Gender
		☐	സ്ത്രീ	1	
		☐	ട്രാൻസ് ജെൻഡർ	2	

		☐	വ്യക്തമാക്കിയിട്ടില്ല	3	
8	വിദ്യാഭ്യാസ യോഗ്യത **(ഇതുവരെ നേടിയിട്ടുള്ള ഉയർന്നതലം)**	☐	അനൗപചാരിക വിദ്യാഭ്യാസം	**0**	EDU
		☐	ഔപചാരിക-പ്രാഥമിക വിദ്യാഭ്യാസം (ഏഴാം ക്ലാസ് വരെ)	1	
		☐	ടസക്കൻഡറി വിദ്യാഭ്യാസം (പത്താം ക്ലാസ് വരെ)	2	
		☐	സീനിയർ സെക്കൻഡറി വിദ്യാഭ്യാസം (ഹയർ സെക്കൻഡറി)	3	
		☐	ബിരുദവും അതിനുമുകളിലും	4	
9	ജോലി ചെയ്യുന്നിടത്തേക് താമസിക്കുന്ന സ്ഥലത്ത് നിന്നുള്ള ദൂരം	☐	< 2KM	0	POR
		☐	2-5 KM	1	
		☐	>5 KM	2	
03. റോഡപകടങ്ങളിൽപെട്ടവർക്ക് നൽകേണ്ടുന്ന പ്രഥമ ശുശ്രൂഷയെക്കുറിച്ചുള്ള അടിസ്ഥാന അറിവ്					
10	പ്രഥമശുശ്രൂഷയെക്കുറിച്ച് നിങ്ങൾ എപ്പോഴെങ്കിലും കേട്ടിട്ടുണ്ടോ?	☐	ഇല്ല	0	FIRST AID
		☐	ഉണ്ട്	1	
11(a)	റോഡ് അപകടത്തിൽപ്പെട്ടവർക്കുള്ള പ്രഥമ ശുശ്രൂഷയെക്കുറിച്ച് നിങ്ങൾ എപ്പോഴെങ്കിലും കേട്ടിട്ടുണ്ടോ? **(ഉത്തരം 'ഉണ്ട്' ആണെങ്കിൽ, ചോദ്യനമ്പർ 11(ബി) ലേക്ക് പോകുക. 'ഇല്ല' എന്നാണ് ഉത്തരമെങ്കിൽ, ചോദ്യനമ്പർ 13-ലേക്ക് പോകുക)**	☐	ഇല്ല	0	RTA-FIRST AID
		☐	ഉണ്ട്	1	
11(b)	റോഡ് അപകടത്തിൽപ്പെട്ടവർക്കുള്ള പ്രഥമ ശുശ്രൂഷയെക്കുറിച്ച് നിങ്ങൾ എവിടെ നിന്നാണ് കേട്ടത് ? **(ഒന്നിൽ കൂടുതൽ ഉത്തരങ്ങൾ രേഖപ്പെടുത്താവുന്നതാണ്)**	☐	മീഡിയ (ടിവി/റേഡിയോ/വാർത്ത പേപ്പർ മുതലായവ	0	RTA-FA-INF
		☐	സഹപ്രവർത്തകർ/സുഹൃത്തുക്കളിൽ നിന്ന്	1	
		☐	ആരോഗ്യവകുപ്പ് /മോട്ടോർ വാഹന വകുപ്പ്/പോലീസിന്റെ സന്ദേശങ്ങൾ	2	

		☐	**മറ്റുള്ളവ**	**വ്യക്തതവരുത്തുക**	
12(a)	റോഡ് അപകടത്തിൽ പരിക്കേറ്റവർക്ക് നൽകേണ്ടുന്ന പ്രഥമശുശ്രൂഷയുമായി ബന്ധപ്പെട്ട ഏതെങ്കിലും പരിശീലന പരിപാടികളിൽ നിങ്ങൾ പങ്കെടുത്തിട്ടുണ്ടോ? (ഉത്തരം '**ഉണ്ട്**' ആണെങ്കിൽ ചോദ്യം നമ്പർ 11(ബി) ലേക്ക് പോകുക. '**ഇല്ല**' എന്നാണ് ഉത്തരമെങ്കിൽ ചോദ്യനമ്പർ 12–ലേക്ക് പോകുക.	☐	ഇല്ല	0	RA-FA-TRNG
		☐	ഉണ്ട്	1	
12(b)	റോഡ് അപകടപരിക്കുകളിലെ പ്രഥമ ശുശ്രൂഷ സംബന്ധിച്ച് നിങ്ങൾ പങ്കെടുത്ത പരിശീലനം ഏതാണ്.	☐	പോലീസിന്റെ പരിശീലനം	0	TRNG-CORD
		☐	റോഡ് സുരക്ഷാ അതോറിറ്റിയുടെ പരിശീലനം	1	
		☐	മോട്ടോർ വാഹന വകുപ്പിന്റെ പരിശീലനം	2	
		☐	ആരോഗ്യവകുപ്പിന്റെ പരിശീലനം	3	
		☐	സന്നദ്ധ സംഘടനകളുടെ പരിശീലനം	4	
		☐	**മറ്റുള്ളവ**	**വ്യക്തതവരുത്തുക**	
12 (c)	റോഡ് അപകടപരിക്കുകളിലെ പ്രഥമ ശുശ്രൂഷ സംബന്ധിച്ച് നിങ്ങൾ അവസാനമായി പങ്കെടുത്ത പരിശീലനം എപ്പോഴായിരുന്നു	☐	കഴിഞ്ഞ 06 മാസത്തിനുള്ളിൽ	0	LAST - TRNG
		☐	കഴിഞ്ഞ 06 മാസത്തിനും 01 വർഷത്തിനുള്ളിൽ	1	
		☐	> 01 വർഷത്തിന് മുൻപ്	2	
13	നിങ്ങളുടെ അറിവ് അനുസരിച്ച് റോഡ് അപകടങ്ങളെ തുടർന്നുള്ള എന്തെല്ലാം കാരണങ്ങൾ അപകടത്തിൽപെട്ട ആളുടെ (ഇരയുടെ) പെട്ടെന്നുള്ള	☐	തീർച്ചയില്ല	0	RC-DEATH
		☐	രക്തസ്രാവം	1	
		☐	ശ്വസനവുമായി ബന്ധപ്പെട്ടവ	2	
		☐	മസ്തിഷ്ക പരിക്ക്	3	
		☐	അസ്ഥി ഒടിവ്	4	

	മരണത്തിലേക്ക് നയിച്ചേക്കാം?	☐	ആന്തരിക പരിക്കുകൾ	5	
		☐	**മറ്റുള്ളവ**	**വ്യക്തതവരുത്തുക**	
14	നിങ്ങളുടെ അറിവ് അനുസരിച്ച്, ഒരു റോഡ് അപകടപരിക്കിനെത്തുടർന്ന് എന്താണ് അടിയന്തിരമായി ചെയ്യേണ്ടത്??	☐	അറിയില്ല	0	RC-IMMED CARE
		☐	സഹായത്തിനായി വിളിക്കുക	1	
		☐	അപകടത്തിൽപെട്ടവരെ സുരക്ഷിതമായി പുറത്തെടുക്കൽ	2	
		☐	അപകടത്തിൽപെട്ടവരുടെ ശ്വസനത്തിന്റെ സംരക്ഷണം	3	
		☐	പൊള്ളൽ പോലെയുള്ള കൂടുതൽ പരിക്കുകൾ ഒഴിവാക്കാൻ അപകടസ്ഥലത്തു നിന്നും അപകടത്തിനിരയായവരെ സുരക്ഷിത സ്ഥാനത്തേക്കു മാറ്റുക	4	
		☐	രക്തസ്രാവമുള്ള സ്ഥലത്ത് ബാഹ്യ സമ്മർദ്ദം ചെലുത്തുക	5	
		☐	പോലീസിനെ അറിയിക്കുക	6	
		☐	ആംബുലൻസിനെ വിളിക്കുക	7	
		☐	**മറ്റുള്ളവ**	**വ്യക്തതവരുത്തുക**	
15	നിങ്ങളുടെ അഭിപ്രായത്തിൽ റോഡപകടത്തെ അഭിമുഖീകരിച്ച ഒരു ബൈക്ക് യാത്രികന്റെ തലയിൽ നിന്ന് ഹെൽമെറ്റ് നീക്കം ചെയ്യാനായി എന്താണ് അടിയന്തിരമായി ചെയ്യേണ്ടത്?? (വ്യക്തി ബോധവസ്ഥയിലാണ്)	☐	അറിയില്ല	0	REM-HELMET
		☐	സ്വയം നീക്കം ചെയ്യാൻ വ്യക്തിയെ അനുവദിക്കുക	1	
		☐	ഹെൽമെറ്റ് പൊട്ടിച്ച് നീക്കം ചെയ്യുക	2	
		☐	തറയിൽ കിടക്കുന്ന ആളിന്റെ കഴുത്ത് അനക്കാതെ നിവർന്നുകൊണ്ട് ഹെൽമറ്റ് പതുക്കെ നീക്കം ചെയ്യുക.	3	

		☐	ഹെൽമറ്റ് അനക്കാതെ ആശുപത്രിയിൽ പ്രവേശിപ്പിക്കാൻ സഹായം അഭ്യർത്ഥിക്കുക	4	
16	ശ്വാസോച്ഛ്വാസത്തിനായി പ്രയാസം /ശ്വാസം മുട്ടൽ എന്നിവയാൽ ബുദ്ധിമുട്ടുന്ന അപകടാനന്തര ഇരയ്ക്ക് ശ്വാസനാളം സംരക്ഷിക്കാനായി എന്താണ് അടിയന്തിരമായി ചെയ്യേണ്ടത്? (വ്യക്തി അവബോധാവസ്ഥയിലാണ്)	☐	അറിയില്ല	0	BREATHING
		☐	ശ്വസനം പരിശോധിക്കുക	1	
		☐	സഹായത്തിനായി വിളിക്കുക	2	
		☐	കൃത്രിമ ശ്വാസോച്ഛ്വാസം പരീക്ഷിക്കുക	3	
		☐	വ്യക്തിയെ തറയിൽ കിടക്കാനും വായ, മൂക്ക് എന്നിവ വൃത്തിയാക്കാനും എയർവേ പേറ്റന്റ് ആക്കുന്നതിന് ശ്രമിക്കുക	4	
		☐	വേഗം ആശുപത്രിയിൽ എത്തിക്കുക	5	
17	റോഡപകടത്തെത്തുടർന്ന് വ്യക്തിയുടെ ശരീരഭാഗങ്ങളിലേക്ക് മൂർച്ചയുള്ള വസ്തുക്കൾ തുളച്ചുകയറി രക്തംവാർന്നൊഴുകുന്ന സന്ദർഭങ്ങളിൽ അടിയന്തിരമായി ചെയ്യാവുന്ന ഏറ്റവും ഉചിതമായത് എന്താണ്?	☐	അറിയില്ല	0	PENETRATING INJ
		☐	അടിയന്തര സഹായത്തിനായി വിളിക്കുക	1	
		☐	മൂർച്ചയുള്ള വസ്തു നീക്കം ചെയ്ത് രക്തംവാർന്നൊഴുകുന്നിടത്ത് ബാഹ്യ സമ്മർദ്ദം ചെലുത്തുക	2	
		☐	ശരീരത്തിൽ തുളച്ചുകയറിയ വസ്തു നീക്കം ചെയ്യാതെ എത്രയും വേഗം ആശുപത്രിയിൽ എത്തിക്കുക	3	
18	അപകടത്തിൽ പെട്ടയാളിന് ജന്നി/അപസ്മാരം ഉണ്ടാകുന്നത് കണ്ടാൽ എന്താണ് അടിയന്തിരമായി ചെയ്യേണ്ടത്?	☐	എന്താണ് ചെയ്യേണ്ടതെന്ന് ഉറപ്പില്ല	0	SEIZURE
		☐	ഒരു താക്കോൽ അല്ലെങ്കിൽ ലോഹ വസ്തുവിനെ പിടിക്കാൻ അപകടത്തിൽ പെട്ടയാളിന് നൽകുക	1	
		☐	അപകടത്തിൽപെട്ടയാളിനെ ഇടതുവശത്തേക്ക് ചരിച്ചു കിടത്തുക	2	
		☐	അപകടത്തിൽപെട്ടയാളിന് കുടിക്കാൻ കുറച്ച് വെള്ളമോ മറ്റേതെങ്കിലും ദ്രാവകമോ നൽകുക	3	
		☐	അപകടത്തിൽപെട്ടയാളിനെ ശരീരം ചലിപ്പിക്കാൻ അനുവദിക്കാതെ പിടിക്കുക	4	
19	റോഡപകടത്തെത്തുടർന്ന് അപകടത്തിൽ	☐	എന്താണ് ചെയ്യേണ്ടതെന്ന് ഉറപ്പില്ല	0	OPEN FRACT

	പെട്ടയാളിന്റെ ഒടിഞ്ഞ അസ്ഥി പരിക്കേറ്റ ഭാഗത്തിലൂടെ പുറത്തുവന്നിട്ടുണ്ടെങ്കിൽ എന്താണ് അടിയന്തിരമായി ചെയ്യേണ്ടത്?	☐	കൈകാലുകളോ ശരീരഭാഗമോ ചലിക്കാൻ അനുവദിക്കരുത്	1	
		☐	സ്പിരിറ്റ് അല്ലെങ്കിൽ ബീറ്റഡീൻ ഉപയോഗിച്ച് മുറിവ് വൃത്തിയാക്കുക	2	
		☐	മുറിവ് ഉടനടി കുറച്ച് തുണി ഉപയോഗിച്ച് അടയ്ക്കണം	3	
		☐	മരക്കഷണം പോലെയുള്ള ചില ബാഹ്യപിന്തുണകൾ ഉപയോഗിച്ച് അസ്ഥിക്ക് ഒടിവുപറ്റിയ കൈകാലുകളെ താങ്ങുകയും നിശ്ചലമാക്കുകയും ആശുപത്രിയിലേക്ക് കൊണ്ടുപോകുകയും ചെയ്യുക	4	
20	അപകടത്തിനുശേഷം പൊള്ളലേറ്റ ഒരാൾക്ക് ചെയ്യേണ്ട ഏറ്റവും പ്രധാനപ്പെട്ട കാര്യം എന്താണ് (വ്യക്തിക്ക് ബോധമുണ്ട്)	☐	എന്താണ് ചെയ്യേണ്ടതെന്ന് ഉറപ്പില്ല	0	BURNS
		☐	പൊള്ളലേറ്റ സ്ഥലത്ത് നിന്ന് വസ്ത്രങ്ങളും മറ്റ് വസ്തുക്കളും നീക്കം ചെയ്യുക	1	
		☐	കൂടുതൽ പൊള്ളലേറ്റേക്കാവുന്ന വസ്തുക്കൾ ശരീരത്തിൽ നിന്ന് നീക്കം ചെയ്യുക	2	
		☐	പൊള്ളലേറ്റ ശരീരഭാഗങ്ങളിൽ വെള്ളം ഒഴിക്കുക	3	
		☐	പൊള്ളലേറ്റ ഭാഗങ്ങളിൽ ടൂത്ത് പേസ്റ്റോമണലോ പോലെ മറ്റ് വസ്തുക്കൾ പുരട്ടുക	4	
		☐	ആംബുലൻസ് വിളിച്ചു ആശുപത്രിയിലേക്ക് കൊണ്ടുപോകുക	5	
04. ആരോഗ്യ സേവനങ്ങൾ ലഭ്യമാക്കുന്നതിനെക്കുറിച്ചുള്ള അവബോധം					
21 (a)	നിങ്ങളുടെ അഭിപ്രായത്തിൽ റോഡ് അപകടത്തിൽപ്പെട്ടയാളെ കൊണ്ടുപോകാൻ ഏറ്റവും അനുയോജ്യമായ വാഹനം ഏതാണ്?	☐	അപകടസ്ഥലത്ത് ലഭ്യമായ ഏത് വാഹനവും	0	TRANS
		☐	കാർ	1	
		☐	ഓട്ടോ	2	
		☐	ആംബുലൻസ്	3	
21(b)	കഴിഞ്ഞ 01 വർഷകാലയളവിൽ നിങ്ങളുടെ വാഹനം **(ഉടമസ്ഥതയിലുള്ളതോ/നിങ്ങൾ യാത്ര ചെയ്യുന്നതോ**	☐	ഇല്ല	0	VEHCL

	ആയ) റോഡ് അപകടത്തിൽപ്പെട്ടയാളിനെ ആശുപത്രിയിലേക്ക് കൊണ്ടുപോകാൻ ഉപയോഗിച്ചിട്ടുണ്ടോ? (ഉത്തരം **'ഉണ്ട്'** ആണെങ്കിൽ ചോദ്യം നമ്പർ 21(c) ലേക്ക് പോകുക. 'ഇല്ല' എന്നാണ് ഉത്തരമെങ്കിൽ ചോദ്യനമ്പർ 22(a) ലേക്ക് പോകുക	☐	ഉണ്ട്	1	
21(c)	റോഡ് അപകടത്തിൽപ്പെട്ടയാളിനെ കൊണ്ടുപോകാൻ നിങ്ങളുടെ വാഹനം (ഉടമസ്ഥതയിലുള്ളതോ/നിങ്ങൾ യാത്ര ചെയ്യുന്നതോ ആയ) ഉപയോഗിക്കുവാനിടയായ സാഹചര്യം എന്തായിരുന്നു?	☐	ഞങ്ങളുടെ വാഹനം അപകടത്തിൽപെട്ടു	0	VEHCL-USED
		☐	യാത്രയ്ക്കിടെ ഞങ്ങൾ റോഡ് അപകടത്തിന്റെ പരിസരത്തുണ്ടായിരുന്നു	1	
		☐	ഞങ്ങളുടെ യാത്രയ്ക്കിടെ വഴിയരികിൽ അപകടത്തിൽപ്പെട്ട ആളിനെ ഞങ്ങൾ കണ്ടു	2	
		☐	അപകടത്തിൽപ്പെട്ട ആളിനെ ആശുപത്രിയിൽ എത്തിക്കാൻ പൊതുജനങ്ങൾ ഞങ്ങളുടെ സഹായം തേടി	3	
		☐	അപകടത്തിൽപ്പെട്ട ആളിനെ ആശുപത്രിയിൽ എത്തിക്കാൻ പോലീസ് നിർദ്ദേശിച്ചു	4	
		☐	**മറ്റുള്ളവ**	**വ്യക്തതവരുത്തുക**	
21(d)	കഴിഞ്ഞ 01 വർഷകാലയളവിൽ നിങ്ങളുടെ വാഹനത്തിൽ **(ഉടമസ്ഥതയിലുള്ളതോ/നിങ്ങൾ യാത്ര ചെയ്യുന്നതോ ആയ)** റോഡ് അപകടത്തിൽപ്പെട്ടയാളിനെ ആശുപത്രിയിലേക്ക് കൊണ്ടുപോകാൻ സാധിക്കാതിരുന്ന സാഹചര്യങ്ങൾ ഉണ്ടായിട്ടുണ്ടോ? (ഉത്തരം **'ഉണ്ട്'** ആണെങ്കിൽ ചോദ്യം നമ്പർ 21(e) ലേക്ക് പോകുക. **'ഇല്ല'** എന്നാണ് ഉത്തരമെങ്കിൽ ചോദ്യനമ്പർ 22(a)–ലേക്ക് പോകുക	☐	ഇല്ല	0	VEHCL-NOT-USED
		☐	ഉണ്ട്	1	

21(e)	റോഡ് അപകടത്തിൽപ്പെട്ടയാളിനെ ആശുപത്രിയിലേക്ക് കൊണ്ടുപോകാൻ നിങ്ങളുടെ വാഹനം ഉപയോഗിക്കാത്തതിന്റെ കാരണം എന്തായിരുന്നു	☐	അതേ അപകടത്തിൽ വാഹനം തകർന്നു	0	VEHCL-NOT-USED-REAS
		☐	അതേ അപകടത്തിൽ ഞങ്ങൾക്കും പരിക്കേറ്റതിനാൽ വാഹനമോടിക്കാൻ കഴിഞ്ഞില്ല	1	
		☐	പോകേണ്ട ആശുപത്രിയെക്കുറിച്ച് അറിവുണ്ടായിരുന്നില്ല	2	
		☐	ചില അടിയന്തിര സാഹചര്യങ്ങളാൽ ഞങ്ങൾ തിരക്കിലായിരുന്നു.	3	
		☐	നിയമപരമായ സങ്കീർണ്ണതകളെക്കുറിച്ച് ഞങ്ങൾ ആശങ്കാകുലരായിരുന്നു	4	
22(a)	ആലപ്പുഴ ജില്ലയിൽ റോഡ് അപകടത്തിൽപ്പെട്ടവർക്ക് സേവനം നൽകുന്ന ഏതെങ്കിലും സർക്കാർ സ്പോൺസർ ചെയ്ത ആംബുലൻസുകൾ ഉണ്ടോ (**'ഉണ്ട്'** ഉത്തരമാണെങ്കിൽ ചോദ്യ നമ്പർ 22 (ബി) എന്നതിലേക്ക് പോകുക. **'ഇല്ല'** എന്നാണ് ഉത്തരമെങ്കിൽ ചോദ്യ നമ്പർ 23 ലേക്ക് പോകുക	☐	ഇല്ല	0	AMBUL
		☐	ഉണ്ട്	1	
22(b)	അടുത്തുള്ള സർക്കാർ സ്പോൺസർ ചെയ്ത ആംബുലൻസിന്റെ സ്റ്റേഷൻ പോയിന്റ് നിങ്ങൾക്കറിയാമോ	☐	അറിയില്ല	0	AMB - POINT
		☐	അറിയാം	1	
22(c)	സർക്കാർ സ്പോൺസർ ചെയ്ത ആംബുലൻസിൽ സാധാരണ സൗകര്യങ്ങളേക്കാൾ കൂടുതൽ സൗകര്യങ്ങൾ ലഭ്യമാണോ?	☐	തീർച്ചയില്ല	0	SPEC-AMB
		☐	നഴ്സും ലഭ്യമാണ്	1	
		☐	നഴ്സും ആംബുലൻസിൽ ഓക്സിജനും അടിയന്തര ചികിത്സയും ലഭ്യമാണ്	2	
22(d)	സർക്കാർ സ്പോൺസർ ചെയ്ത ആംബുലൻസിന്റെ സേവനം നിങ്ങൾക്ക് എങ്ങനെ ലഭിക്കും	☐	ഫയർ ഫോഴ്സിനെ വിളിക്കുക	0	AMB - NUM
		☐	പോലീസിനെ വിളിക്കുക	1	
		☐	ടോൾ ഫ്രീ നമ്പറിൽ വിളിക്കുക (108)	2	
		☐	ഹോസ്പിറ്റലിനെ വിളിക്കുക	3	
22(e)	സർക്കാർ സ്പോൺസർ ചെയ്ത	☐	തീർച്ചയില്ല	0	AMB - PAY

	ആംബുലൻസിന്റെ പേയ്മെന്റിനെക്കുറിച്ച് നിങ്ങൾക്ക് എന്തെങ്കിലും ധാരണയുണ്ടോ?	☐	108 ആംബുലൻസ് സൗജന്യമാണ്	1	
		☐	ആംബുലൻസ് ചാർജുകൾ ഡ്രൈവർ പറയും	2	
22(f)	നിങ്ങൾ എപ്പോഴെങ്കിലും സർക്കാർ സ്പോൺസർ ചെയ്ത ആംബുലൻസിനായി ശ്രമിച്ചിട്ടുണ്ടോ (ഉത്തരം അതെ ആണെങ്കിൽ ചോദ്യ നമ്പർ 21(ജി) ലേക്ക് പോകുക. ഉത്തരം ഇല്ല ആണെങ്കിൽ ചോദ്യനമ്പർ 22 ലേക്ക് പോകുക)	☐	ഇല്ല	0	ACC-AMB
		☐	ഉണ്ട്	1	
22(g)	ആവശ്യപ്പെട്ട പ്രകാരം നിങ്ങൾക്ക് ആംബുലൻസ് ലഭിച്ചിരുന്നോ	☐	ഇല്ല	0	AVAIL - AMB
		☐	അതെ	1	
22(h)	ആംബുലൻസ് ലഭിക്കാത്തതിന് കാരണം എന്തുകൊണ്ട്?	☐	ആംബുലൻസ് ലഭ്യമായിരുന്നില്ല	0	AMB - REASON
		☐	ആംബുലൻസ് വൈകിയാണ് വന്നത്	1	
		☐	അറ്റൊരു വാഹനം/ആംബുലൻസ് നേരത്തെ കിട്ടി	2	
23	അപകടത്തിൽപ്പെട്ട വാഹനത്തിനുള്ളിൽ നിന്നും അപകടത്തിൽപ്പെട്ടയാളിനെ പുറത്തെടുക്കുന്നതിലും പിന്നീടുള്ള ഗതാഗതത്തിലും പരിക്കേറ്റ വ്യക്തിയെ അതീവ ശ്രദ്ധയോടെ കൈകാര്യം ചെയ്യേണ്ടത് പ്രധാനമായിരിക്കുന്നത് എന്തുകൊണ്ട്?	☐	കാരണങ്ങളെക്കുറിച്ച് ഉറപ്പില്ല	0	Critical_handl
		☐	പരുക്കിന്റെ ആഴം വർദ്ധിപ്പിക്കും രക്തസ്രാവം വർദ്ധിപ്പിക്കും	1	
		☐	ഞരമ്പുകൾക്ക് പരിക്കേൽക്കുകയും ഒടിവുകൾ സങ്കീർണ്ണമാക്കുകയും ചെയ്യും	2	
		☐	**മറ്റുള്ളവ**	**വ്യക്തതവരുത്തുക**	
24(a)	നിങ്ങളുടെ അഭിപ്രായത്തിൽ റോഡ് അപകടത്തിൽപ്പെട്ടവരെ ചികിത്സയ്ക്കായി എവിടേക്കാണ് കൊണ്ടുപോകേണ്ടത് ? (ഉത്തരം സർക്കാർ ആശുപത്രിയാണെങ്കിൽ ദയവായി ചോദ്യം നമ്പർ 24 (ബി) ലേക്ക് പോകുക, അല്ലെങ്കിൽ ചോദ്യം നമ്പർ 25	☐	അടുത്തുള്ള സർക്കാർ ആശുപത്രി	0	FACILITY
		☐	അടുത്തുള്ള സ്വകാര്യ ആശുപത്രി	1	
24(b)	ഏത് തരത്തിലുള്ള സർക്കാർ ആശുപത്രിയാണ് അഭികാമ്യം	☐	പ്രാഥമീക ആരോഗ്യകേന്ദ്രം	0	GOVT – HOSP.
		☐	താലൂക്ക് ആശുപത്രി	1	
		☐	മെഡിക്കൽ കോളേജ്	2	

24(c)	എന്തുകൊണ്ടാണ് നിങ്ങൾ സർക്കാർ ആശുപത്രി നിർദ്ദേശിക്കുന്നത്	☐	റോഡ് അപകട സ്ഥലത്തിന്റെ സാമീപ്യം	0	PREFERNCE – GOVT.
		☐	പോലീസ് കേസുമായി ബന്ധപ്പെട്ട രേഖകൾ എളുപ്പമാകും	1	
		☐	പരിചരണച്ചെലവ് കുറവായിരിക്കും	2	
		☐	ആവശ്യമെങ്കിൽ ഉപരിറഫറൽ എളുപ്പമായിരിക്കും.	3	
		☐	**മറ്റുള്ളവ**	**വ്യക്തത വരുത്തുക**	
25	എന്തുകൊണ്ടാണ് നിങ്ങൾ സ്വകാര്യ ആശുപത്രി നിർദ്ദേശിക്കുന്നത്?	☐	എല്ലാ പരിശോധനകളും ലഭ്യമാകും	0	PVT
		☐	സ്പെഷ്യലിസ്റ്റ് ഡോക്ടർ എല്ലാ സമയത്തും ഉണ്ടാകും	1	
		☐	ജീവൻ കൂടുതൽ നന്നായി രക്ഷിക്കാനാകും	2	
		☐	കൂടുതൽ സൗകര്യം	3	
		☐	**മറ്റുള്ളവ**	**വ്യക്തത വരുത്തുക**	
26(a)	കഴിഞ്ഞ വർഷത്തിനിടെ റോഡ് അപകടത്തിൽപ്പെട്ടവർക്ക് പ്രഥമ ശുശ്രൂഷയോ മറ്റേതെങ്കിലും പരിചരണമോ നൽകാൻ നിങ്ങൾക്ക് എപ്പോഴെങ്കിലും അവസരം ലഭിച്ചിട്ടുണ്ടോ? (ഉത്തരം അതെ ആണെങ്കിൽ ചോദ്യ നമ്പർ 26 (ബി) ലേക്ക് പോകുക) ഉത്തരം ഇല്ല ആണെങ്കിൽ ചോദ്യ നമ്പർ 27–ലേക്ക് പോകുക)	☐	ഇല്ല	0	OPPORT
		☐	ഉണ്ട്	1	
26(b)	കഴിഞ്ഞ 01 വർഷത്തിനിടയിൽ റോഡ് അപകടത്തിൽപ്പെട്ടവർക്ക് പ്രഥമ ശുശ്രൂഷയോ മറ്റേതെങ്കിലും പരിചരണമോ നൽകാൻ നിങ്ങൾക്ക് എത്ര തവണ അവസരം ലഭിച്ചു?	☐	01	0	NUMBER OF OPP
		☐	02	1	

26(c)	ഏത് തരത്തിലുള്ള റോഡ് അപകടമായിരുന്നു അത്?	☐	വാഹനം ഇടിച്ചിട്ടുപോയത്	0	CRASH-TYPE
		☐	കാൽനടയാത്രക്കാർ റോഡ് അപകടത്തിൽപ്പെട്ടു	1	
		☐	ബൈസക്കിൾ യാത്രികൻ റോഡ് അപകടത്തിൽപ്പെട്ടു	2	
		☐	ഇരുചക്രവാഹനങ്ങൾ (മോട്ടോർ ബൈക്ക് പോലുള്ള റോഡ് അപകടത്തിൽപ്പെട്ടു	3	
		☐	റോഡിൽ മുച്ചക്ര വാഹനം അപകടത്തിൽപ്പെട്ടു	4	
		☐	നാലു ചക്രവാഹനം അപകടത്തിൽപ്പെട്ടു	5	
		☐	വാഹനങ്ങൾ മുഖാമുഖം കൂട്ടിയിടിക്കുകയും യാത്രികർ അപകട വാഹനത്തിൽ പെട്ടുപോവുകയും ചെയ്തു	6	
		☐	ഒട്ടനവധിപേർക്കു പരിക്കുപറ്റിയ വലിയ വാഹനാപകടം	7	
		☐	**മറ്റുള്ളവ**	**വ്യക്തമാക്കുക**	
26(d)	ഏത് തരത്തിലുള്ള സേവനമാണ് നിങ്ങൾ നൽകിയത്?	☐	ഒന്നും ചെയ്യാൻ കഴിഞ്ഞില്ല	0	Rendered Service
		☐	പുറത്തെടുക്കാൻ സഹായിച്ചു	1	
		☐	പ്രഥമശുശ്രൂഷ നൽകി	2	
		☐	പോലീസിന്റെ സഹായത്തിന് മാത്രമാണ് വിളിച്ചത്	3	
		☐	ആംബുലൻസിനെ വിളിച്ചു	4	
		☐	ആശുപത്രിയിലേക്ക് അനുഗമിച്ചു	5	
		☐	**മറ്റുള്ളവ**	**വ്യക്തമാക്കുക**	
05. റോഡ് അപകടത്തിൽപ്പെട്ടവർക്ക് പ്രഥമശുശ്രൂഷയും അടിയന്തര പരിചരണവും നൽകുന്നതിലെ തടസ്സങ്ങൾ					
26(e)	കഴിഞ്ഞ 01 വർഷത്തിനിടയിൽ നിങ്ങൾക്ക് എത്ര തവണ റോഡ് അപകടത്തിൽപ്പെട്ടവരെ സഹായിക്കാൻ കഴിഞ്ഞില്ല.	☐	ഉണ്ടായിട്ടില്ല	0	COUNT-NOT HELP
		☐	01	1	
		☐	>01	2	
26(f)	മേൽപ്പറഞ്ഞ സംഭവങ്ങളിൽ റോഡ് അപകടത്തിൽപ്പെട്ടയാൾക്ക്	☐	ഞാൻ എന്താണ് ചെയ്യേണ്ടതെന്ന് അറിയില്ല	0	RELUCTANT
		☐	സഹായിക്കാനായുള്ള എന്റെ ശ്രമങ്ങൾ അപകടത്തിൽപെട്ട	1	

	അടിയന്തര പരിചരണം നൽകുന്നതിൽ നിന്ന് നിങ്ങളെ തടഞ്ഞത് എന്താണ്?		യാളിന് ദോഷമായി ഭവിക്കുമോ എന്നുള്ള ആശങ്ക		
		☐	നിയമപരമായ സങ്കീർണതയെക്കുറിച്ചുള്ള ഭയം	2	
		☐	മറ്റുള്ളവരുടെ സഹായത്തിനായി ശ്രമിക്കുകയായിരുന്നു.	3	
		☐	ആംബുലൻസിന്റെയും പോലീസിന്റെയും സഹായം തേടുകയായിരുന്നു	4	
		☐	**മറ്റുള്ളവ**	**വ്യക്തമാക്കുക**	
06. റോഡ് അപകത്തിൽപ്പെട്ടവർക്ക് പ്രഥമ ശുശ്രൂഷയും അടിയന്തര പരിചരണവും നൽകുന്നതിനു പ്രാപ്തമാക്കുന്ന ഘടകങ്ങൾ					
27	നിങ്ങളുടെ കാഴ്ചപ്പാടിൽ റോഡ് അപകടത്തിൽപ്പെട്ടയാളോടുള്ള നമ്മുടെ മനോഭാവം എന്തായിരിക്കണം? (ഒന്നിൽ കൂടുതൽ ഉത്തരങ്ങൾ രേഖപ്പെടുത്താവുന്നതാണ്)	☐	നമ്മുടെ ധാർമിക ഉത്തരവാദിത്തമാണ് അടിയന്തിര പരിചരണം	0	RESP
		☐	അനാവശ്യ തലവേദനയും നിയമപരമായ സങ്കീർണതയും ആയതിനാൽ പരമാവധി ഒഴിവായി നിൽക്കുന്നതാണ് നമുക്ക് നല്ലത്	1	
		☐	ഉടനടി പരിചരണം നൽകൽ, ആശുപത്രി പ്രവേശനം എന്നിവയാണ് ഞങ്ങളുടെ മുൻഗണനകൾ	2	
		☐	**മറ്റുള്ളവ**	**വ്യക്തമാക്കുക**	
28	നിങ്ങളുടെ അഭിപ്രായത്തിൽ റോഡ് അപകടത്തിൽപ്പെട്ടയാളെ സഹായിക്കുന്നതിനുള്ള അനുകൂല ഘടകം ഏതൊക്കെയാണ്?	☐	മാനുഷിക സമീപനം	0	ENABLERS
		☐	ഉത്തരവാദിത്തമുള്ള പൊതുജനം	1	
		☐	കമ്മ്യൂണിറ്റി പിന്തുണ	2	
		☐	നിയമപരമായ പിന്തുണ	3	
		☐	ആരോഗ്യവകുപ്പ് പോലീസ് തുടങ്ങിയ മേഖലകളിൽ നിന്നുള്ള പിന്തുണ	4	
		☐	പരിശീലനവും നൈപുണ്യ സമ്പാദനവും	5	

		☐	**മറ്റുള്ളവ**	**വ്യക്തമാക്കുക**	
29	നിങ്ങളുടെ അഭിപ്രായത്തിൽ, റോഡപകടത്തിന് ഇരയായവർക്ക് പ്രഥമശുശ്രൂഷ നൽകാനും സഹായ ഹസ്തം നൽകാനും സാധാരണക്കാരെ പ്രേരിപ്പിക്കുന്ന ഏറ്റവും പ്രധാനപ്പെട്ട ഘടകം ഏതാണ്?		നിയമ പരിരക്ഷ	0	MOTIV
		☐	പരിശീലനവും അവബോധവും	1	
		☐	കമ്മ്യൂണിറ്റി പിന്തുണ	2	
		☐	ആശുപത്രികളിൽ നിന്നുള്ള പിന്തുണ	3	
		☐	പ്രതിഫലവും അംഗീകാരങ്ങളും	4	
		☐	**മറ്റുള്ളവ**	**വ്യക്തമാക്കുക**	

PARTICIPANT INFORMATION SHEET

Hello. I am Dr. Dileepkumar S R, currently enrolled in the Master of Public Health program at the Achutha Menon Centre for Health Sciences Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram. As part of my academic research, I am now conducting a survey entitled "**Barriers and Facilitators of Community-based First Responders in Providing First Aid to the Post-Crash Victims in the 'Blackspots' of Alappuzha District**."

As you are aware, road accident victims usually have to wait a long time to get immediate medical care including First aid due to several reasons. Most of the deaths following road crash injuries occur immediately after the crash or during the prehospital period before a patient reaches a healthcare facility. Here is the importance of 'Golden Hour' comes, which is the crucial and critical time during which the life of the road crash victim can be saved by providing immediate care on-site followed by emergency hospitalization.

Some studies illustrate the role of community-based first responders and laypersons in providing immediate emergency care in the form of First aid, airway safeguarding, and control of external haemorrhages. Literature defines community-based first responders as "a person who can be dispatched locally to provide immediate medical care." Before professional assistance arrives, community-based first responders are available to provide immediate care to victims of disasters or emergencies. They may be community members who have received training, co-travellers, co-responders, or even laypeople who are present at the scene.

I am inviting you to be part of this research survey work. Before you decide to be a participant in this survey or not, you can talk to anyone you feel comfortable with about this research survey.

This consent form may contain terms and questions that you do not understand. Please ask me to stop as we go through the questions, and I will clarify your doubts before proceeding further.

If you have questions later, you can ask them either to me or contact the Member Secretary of the Institution Ethics Committee.

This research survey will require you to complete a questionnaire which will take approximately 15 to 20 minutes. You are invited to participate in this study because I recognize you as a key stakeholder whose experience and knowledge as a potential first responder to road accident injuries can contribute significantly to this investigation. It would be beneficial to pave the way for future implementation of first aid training for community-based first responders to provide immediate care and first aid to victims of road accidents.

Your participation is purely voluntary. You are free to choose to take part or not. Your decision will not affect your work or reporting in any way. Even though you gave your consent previously, you are free to withdraw later if you change your mind. Whether you choose to participate or not, no one will be able to identify you and your participation will be anonymous. There will not be any rewards or incentives for participating in the study.

Risks

There is no risk anticipated in the study.

There is a possibility that you may feel discomfort if you realize that a procedure you performed in an emergency was improper. It will not affect the way you live. You may kindly stop me from

the interview for some time if you feel so. If you are experiencing intense anxiety due to feelings of guilt or unease, I suggest that you consult a counsellor.

Benefits

There will be no immediate direct benefit to you, but your participation is likely to help me inform public professionals about the current situation of knowledge, practice, and the inadequacies in providing first aid to Road Crash victims, which will pave the way for future research to find a solution to improve the current situation and save lives.

Confidentiality

I will not be sharing information about you with anyone else. The information that I collect from this research survey work will be kept private. Any information about you will have a number on it instead of your name.

Who to contact

If you have any questions, you can ask them now or later.

If you wish to ask questions later, you may contact any one of the following.

Dr. Dileepkumar S R, 9447804496/8547373234/dileepmph2022@sctimst.ac.in

Dr. Srinivas G, Member Secretary, I E C, SCTIMST, & Scientist - G, Department of Biochemistry, SCTIMST, (email iec.mem.sec@sctimst.ac.in). 04712524689

വിവര ഷീറ്റ്

ഹലോ, ഞാൻ ഡോ. ദിലീപ്കുമാർ എസ്.ആർ., നിലവിൽ തിരുവനന്തപുരത്തെ ശ്രീചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസസ് ആൻഡ് ടെക്നോളജിയിലെ അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസിൽ മാസ്റ്റർ ഓഫ് പബ്ലിക് ഹെൽത്ത് പ്രോഗ്രാമിൽ എൻറോൾ ചെയ്തിരിക്കുന്നു. എന്റെ അക്കാദമിക് ഗവേഷണത്തിന്റെ ഭാഗമായി ആലപ്പുഴ ജില്ലയിലെ 'ബ്ലാക്ക് സ്പോട്ടുകളിൽ' റോഡപകടങ്ങൾക്കിരയാകുന്നവർക്ക് പ്രഥമ ശുശ്രൂഷ നൽകുന്നതിൽ കമ്മ്യൂണിറ്റി അടിസ്ഥാനമാക്കിയുള്ള ആദ്യ പ്രതികരണക്കാരുടെ തടസ്സങ്ങളും പ്രാപ്തമാക്കുന്ന ഘടകങ്ങളും എന്ന തലക്കെട്ടിൽ ഞാൻ ഇപ്പോൾ ഒരു സർവേ നടത്തുകയാണ്.

നിങ്ങൾക്കറിയാവുന്നതുപോലെ, പല കാരണങ്ങളാൽ റോഡപകടത്തിൽപ്പെട്ടവർക്ക് പ്രഥമശുശ്രൂഷ ഉൾപ്പെടെയുള്ള അടിയന്തര വൈദ്യസഹായം ലഭിക്കുന്നതിന് സാധാരണയായി ദീർഘ നേരം കാത്തിരിക്കേണ്ടിവരുന്നു. റോഡപകടപരിക്കുകളെ തുടർന്നുള്ള മരണങ്ങളിൽ ഭൂരിഭാഗവും അപകടത്തിന് തൊട്ടുപിന്നാലെയോ അല്ലെങ്കിൽ പ്രീ ഹോസ്പിറ്റൽ കാലഘട്ടത്തിൽ, ഒരു ചികിത്സാകേന്ദ്രത്തിൽ എത്തിച്ചേരുന്നതിനു മുൻപോ സംഭവിക്കുന്നു. ഇവിടെയാണ് ഗോൾഡൻ അവറിന്റെ പ്രാധാന്യം, റോഡപകടത്തിന് ഇരയായ വ്യക്തിയുടെ ജീവൻ രക്ഷിക്കാൻ റോഡപകടസൈറ്റിൽ ഉടനടി പരിചരണം നൽകുകയും തുടർന്ന് അടിയന്തിരചികിത്സക്കായി ആശുപത്രിയിൽ പ്രവേശിപ്പിക്കുകയും ചെയ്യേണ്ടുന്ന നിർണായകമായ സമയമാണ്. ഗോൾഡൻ അവർ (Golden Hour) വൈദ്യസഹായം നൽകേണ്ടതിന്റെ പ്രാധാന്യം ഊന്നിപ്പറയുന്ന വിവിധങ്ങളായ ഗവേഷണ പ്രബന്ധങ്ങളുണ്ട്. കാരണം, ഈ ഇടപെടലിന് അത്തരം സംഭവങ്ങളിൽ നിന്നുള്ള രോഗാവസ്ഥയും മരണനിരക്കും ഗണ്യമായി കുറയ്ക്കാൻ കഴിയും.

പ്രഥമ ശുശ്രൂഷ, ശ്വസനസംരക്ഷണം, ബാഹ്യരക്തസ്രാവം നിയന്ത്രിക്കൽ എന്നിങ്ങനെ റോഡപകടത്തിന് ഇരയായ വ്യക്തിയുടെ ജീവൻ രക്ഷിക്കാൻ അപകടസ്ഥലത്ത് വച്ച് അടിയന്തര പരിചരണം നൽകുന്നതിൽ കമ്മ്യൂണിറ്റി അടിസ്ഥാനമാക്കിയുള്ള ആദ്യ പ്രതികരണക്കാരുടെയും സാധാരണക്കാരുടെയും പങ്ക് വ്യക്തമാക്കുന്ന വിവിധ പഠനങ്ങളുണ്ട്. കമ്മ്യൂണിറ്റി അടിസ്ഥാനമാക്കിയുള്ള ആദ്യ പ്രതികരണക്കാരെ നിർവചിക്കുന്നത്. പ്രൊഫഷണൽ സഹായം എത്തുന്നതിന് മുമ്പ്, ഉടൻ വൈദ്യസഹായം നൽകാൻ പ്രാദേശികമായി അയയ്ക്കാവുന്ന ഒരു വ്യക്തി എന്നാണ്. ദുരന്തങ്ങളുടെയോ അടിയന്തിര സഹാചര്യങ്ങളുടെയോ ഇരകൾക്ക് ഉടനടി പരിചരണം നൽകാൻ കമ്മ്യൂണിറ്റി അടിസ്ഥാനമാക്കിയുള്ള ആദ്യ പ്രതികരണക്കാർ ലഭ്യമാണ്. അവർ പരിശീലനം ലഭിച്ച കമ്മ്യൂണിറ്റി അംഗങ്ങളോ സഹയാത്രികരോ സംഭവസ്ഥലത്തുണ്ടായിരുന്ന സാധാരണക്കാരോ ആകാം.

ഈ ഗവേഷണ സർവേയുടെ ഭാഗമാകാൻ ഞാൻ നിങ്ങളെ ക്ഷണിക്കുന്നു. ഈ സർവേയിൽ പങ്കാളിയാകണോ വേണ്ടയോ എന്ന് തീരുമാനിക്കുന്നതിനുമുമ്പ്, നിങ്ങൾക്ക് താൽപ്പര്യമുള്ള ആരുമായും ഈ ഗവേഷണ സർവേയെക്കുറിച്ച് സംസാരിക്കാം.

ഈ സമ്മത ഫോമിൽ നിങ്ങൾക്ക് മനസ്സിലാകാത്ത പദങ്ങളോ ചോദ്യങ്ങളോ ഉൾപ്പെട്ടിട്ടുണ്ടാകാം. ഞാൻ ചോദ്യാവലിയിലൂടെ മുന്നോട്ടുപോകുമ്പോൾ അങ്ങനെ ഉണ്ടായാൽ ദയവായി എന്നോട് നിർത്താൻ ആവശ്യപ്പെടുക. തുടരുന്നതിന് മുമ്പ് നിങ്ങളുടെ സംശയങ്ങൾക്ക് ഞാൻ വ്യക്തത നൽകുന്നതായിരിക്കും.

നിങ്ങൾക്ക് പിന്നീട് ചോദ്യങ്ങളുണ്ടെങ്കിൽ, ഒന്നുകിൽ എന്നോട് ചോദിക്കാം അല്ലെങ്കിൽ സ്ഥാപന നൈതിക സമിതിയുടെ മെമ്പർ സെക്രട്ടറിയെ ബന്ധപ്പെടാം.

ഈ ഗവേഷണ സർവേയിൽ നിങ്ങൾ ഒരു ചോദ്യാവലി പൂർത്തിയാക്കാൻ ഏകദേശം 15 മുതൽ 20 മിനിറ്റ് വരെ വേണ്ടിവരും.

ഈ പഠനത്തിൽ പങ്കെടുക്കാൻ നിങ്ങളെ ക്ഷണിക്കുന്നു. കാരണം റോഡപകടങ്ങളിൽ പരിക്കേന്നുവർക്ക് അടിയന്തിര പ്രാഥമിക ചികിത്സ നൽകുവാൻ അവസരം ഉണ്ടായേക്കാവുന്ന ആദ്യ പ്രതികരണക്കാരുടെ അനുഭവവും അറിവും സംബന്ധിച്ച് ഈ അന്വേഷണത്തിന് കാര്യമായ സംഭാവന നൽകാൻ കഴിയുന്ന ഒരു പ്രധാന പങ്കാളിയായി നിങ്ങളെ ഞാൻ തിരിച്ചറിയുന്നു. റോഡപകടങ്ങളിൽപ്പെടുന്നവർക്ക് അടിയന്തര പരിചരണവും പ്രഥമ ശുശ്രൂഷയും നൽകുന്നതിന് സമൂഹാടിസ്ഥാനത്തിലുള്ള പ്രഥമ ശുശ്രൂഷാ പരിശീലനം ഭാവിയിൽ നടപ്പാക്കുന്നതിന് വഴിയൊരുക്കുന്നത് പ്രയോജനകരമായിരിക്കും.

സ്വമേധയായുള്ള പങ്കാളിത്തം

ഗവേഷണത്തിൽ പങ്കെടുക്കാൻ നിങ്ങൾ സ്വമേധയാ തിരഞ്ഞെടുക്കുന്നു. പങ്കെടുക്കണോ വേണ്ടയോ എന്ന് തിരഞ്ഞെടുക്കാൻ നിങ്ങൾക്ക് സ്വാതന്ത്ര്യമുണ്ട്. നിങ്ങളുടെ തീരുമാനം നിങ്ങളുടെ ജോലിയെയോ റിപ്പോർട്ടിംഗിനെയോ ഒരു തരത്തിലും ബാധിക്കില്ല. മുമ്പ് സമ്മതം നൽകിയെങ്കിലും, നിങ്ങൾ മനസ്സ് മാറ്റിയാൻ പിന്നീട് സമ്മതം പിൻവലിക്കാൻ നിങ്ങൾക്ക് സ്വാതന്ത്ര്യമുണ്ട്. നിങ്ങൾ പങ്കെടുക്കാൻ തീരുമാനിച്ചാലും ഇല്ലെങ്കിലും, നിങ്ങൾ ആരാണെന്നോ നിങ്ങളുടെ പേര് എന്താണെന്നോ കണ്ടെത്താൻ ഒരു അധികാരികൾക്കും സാധിക്കില്ല. പഠനത്തിൽ പങ്കെടുക്കുന്നതിന് പ്രതിഫലമോ പ്രോത്സാഹനങ്ങളോ ഉണ്ടാകില്ല.

അപകടസാധ്യതകൾ

പഠനത്തിൽ പ്രതീക്ഷിക്കുന്ന അപകടസാധ്യതകളൊന്നുമില്ല. അടിയന്തിരഘട്ടത്തിൽ നിങ്ങൾ നടത്തിയ ഒരു ഇടപെടൽ അനുചിതമാണെന്ന് നിങ്ങൾ മനസ്സിലാക്കിയാൽ നിങ്ങൾക്ക് അസ്വസ്ഥത അനുഭവപ്പെടാൻ സാധ്യതയുണ്ട്. അത് നിങ്ങളുടെ ജീവിതരീതിയെ ബാധിക്കില്ല. നിങ്ങൾക്ക് അങ്ങനെ തോന്നുന്നുവെങ്കിൽ, ദയവായി എന്നെ അഭിമുഖത്തിൽ നിന്ന് കുറച്ച് സമയത്തേക്ക് തടയാം. കുറ്റബോധമോ അസ്വസ്ഥതയോ നിമിത്തം നിങ്ങൾക്ക് തീവ്രമായ ഉത്കണ്ഠ അനുഭവപ്പെടുന്നുണ്ടെങ്കിൽ, ഒരു കൗൺസിലറെ സമീപിക്കാൻ ഞാൻ നിർദ്ദേശിച്ചേക്കാം.

നേട്ടങ്ങൾ

ഗവേഷണത്തിൽ പങ്കെടുക്കുന്നതിനാൽ നിങ്ങൾക്ക് ഉടനടി നേരിട്ടുള്ള നേട്ടമൊന്നും ഉണ്ടാകില്ല, പക്ഷേ നിങ്ങളുടെ പങ്കാളിത്തം, റോഡ് ക്രാഷ് ഇരകൾക്ക് പ്രഥമശുശ്രൂഷ നൽകുന്നതിലെ അറിവിന്റെയും പരിശീലനത്തിന്റെയും അപര്യാപ്തതയും നിലവിലെ സാഹചര്യത്തെക്കുറിച്ചും പൊതുപ്രൊഫഷണലുകളെ അറിയിക്കാൻ എന്നെ സഹായിക്കും, ഇത് ഭാവിയിലെ ഗവേഷണങ്ങൾക്കും നിലവിലെ സാഹചര്യം മെച്ചപ്പെടുത്തുന്നതിനും ജീവൻ രക്ഷിക്കുന്നതിനും വഴിയൊരുക്കും.

രഹസ്യാത്മകത

നിങ്ങളെക്കുറിച്ചുള്ള വിവരങ്ങൾ ഞാൻ മറ്റാരോടും പങ്കുവയ്ക്കില്ല. ഈ ഗവേഷണ സർവേ പ്രവർത്തനത്തിൽ നിന്ന് ഞാൻ ശേഖരിക്കുന്ന വിവരങ്ങൾ സ്വകാര്യമായി സൂക്ഷിക്കും. നിങ്ങളെക്കുറിച്ചുള്ള ഏത് വിവരത്തിനും നിങ്ങളുടെ പേരിന് പകരം ഒരു നമ്പർ ഉണ്ടായിരിക്കും.

ആരെയാണ് ബന്ധപ്പെടേണ്ടത്

നിങ്ങൾക്ക് എന്തെങ്കിലും ചോദ്യങ്ങളുണ്ടെങ്കിൽ, ഇപ്പോൾ അല്ലെങ്കിൽ പിന്നീട് ചോദിക്കാം.

നിങ്ങൾക്ക് പിന്നീട് ചോദ്യങ്ങൾ ചോദിക്കാൻ താൽപ്പര്യമുണ്ടെങ്കിൽ, ഇനിപ്പറയുന്നവരിൽ ആരെയെങ്കിലും നിങ്ങൾക്ക് ബന്ധപ്പെടാം.

ഡോ. ദിലീപ്കുമാർ എസ്.ആർ., 9447804496/8547373234/dileepmph2022@sctimst.ac.in

ഡോ. ശ്രീനിവാസ് ജി., മെമ്പർ, സെക്രട്ടറി, I E C, SCTIMST, & സയന്റിസ്റ്റ് – ജി, ബയോകെമിസ്ട്രി വകുപ്പ്, SCTIMST, (email iec.mem.sec@sctimst.ac.in)., 0471-2524689.

INFORMED CONSENT FORM

I have been invited to participate in the thesis titled "**Barriers and Facilitators of Community-based First Responders in Providing First Aid to the Post-Crash Victims in the 'blackspots' of Alappuzha District."**

I have read the information provided regarding the study, or it has been read to me**.** I have had the opportunity to ask questions about it and the questions I have been asked have been answered to my satisfaction.

I am aware that there is minimal risk in participating in the study. I understand there is no immediate direct benefit in the study.

I know I will not be incentivized the participate.

I understand my personal information will remain confidential.

I know that I can withdraw my consent at any point of the study

I consent voluntarily to be a participant in this study.

Participant ID: Name of the participant :

Mobile Number: **Signature :**

Name of the Witness :

Signature :

Place :

Date :

I confirm that the participant was allowed to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent and the consent has been given freely and voluntarily.

Name of the Researcher :

Date :

Signature of the Researcher:

സമ്മതപത്രം

ആലപ്പുഴ ജില്ലയിലെ റോഡുകളിലെ 'ബ്ലാക്ക്സ്പോട്ടുകളിൽ' റോഡപകടങ്ങൾക്കിരയാകുന്നവർക്ക് പ്രഥമശുശ്രൂഷ നൽകുന്നതിൽ കമ്മ്യൂണിറ്റി അടിസ്ഥാനമാക്കിയുള്ള ആദ്യ പ്രതികരണക്കാരുടെ തടസ്സങ്ങളും പ്രാപ്തമാക്കുന്ന ഘടകങ്ങളും എന്ന തലക്കെട്ടിലുള്ള ഗവേഷണത്തിന്റെ ഭാഗമായുള്ള സർവ്വേയിൽ പങ്കെടുക്കാൻ എന്നെ ക്ഷണിച്ചു. പഠനവുമായി ബന്ധപ്പെട്ട് നൽകിയിരിക്കുന്ന വിവരങ്ങൾ ഞാൻ വായിച്ചിട്ടുണ്ട്, അല്ലെങ്കിൽ അത് എനിക്ക് വായിച്ചുതന്നിട്ടുണ്ട്. അതിനെക്കുറിച്ച് ചോദ്യങ്ങൾ ചോദിക്കാൻ എനിക്ക് അവസരം ലഭിച്ചു, ഞാൻ ചോദിച്ച ചോദ്യങ്ങൾക്ക് എനിക്ക് തൃപ്തികരമായ ഉത്തരം ലഭിച്ചു.

പഠനത്തിൽ പങ്കെടുക്കുന്നതിൽ അപകട സാധ്യതയില്ലെന്ന് എനിക്കറിയാം.

ഗവേഷണത്തിൽ പങ്കെടുക്കുന്നതിൽ നേരിട്ടുള്ള ഒരു പ്രയോജനവും ഇല്ലെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു.

പഠനത്തിൽ പങ്കെടുക്കുന്നതിന് പ്രതിഫലമോ പ്രോത്സാഹനങ്ങളോ ഉണ്ടാകില്ലെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു. എന്റെ സ്വകാര്യ വിവരങ്ങൾ രഹസ്യമായി തുടരുമെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു.

പഠനത്തിന്റെ ഏത് ഘട്ടത്തിലും എനിക്ക് എന്റെ സമ്മതം പിൻവലിക്കാൻ കഴിയുമെന്ന് എനിക്കറിയാം.

ഈ പഠനത്തിൽ പങ്കാളിയാകാൻ ഞാൻ സ്വമേധയാ സമ്മതിക്കുന്നു.

പങ്കാളി ഐ.ഡി. :

പങ്കെടുക്കുന്നയാളുടെ പേര് :

മൊബൈൽ നമ്പർ :

ഒപ്പ് :

സാക്ഷിയുടെ പേര് :

ഒപ്പ് :

സ്ഥലം :

തീയതി :

പഠനത്തെക്കുറിച്ച് ചോദ്യങ്ങൾ ചോദിക്കാൻ പങ്കെടുക്കുന്നയാളിനെ അനുവദിച്ചിട്ടുണ്ടെന്ന് ഞാൻ സ്ഥിരീകരിക്കുന്നു, പങ്കെടുക്കുന്നയാൾ ചോദിച്ച എല്ലാ ചോദ്യങ്ങൾക്കും എന്റെ കഴിവിന്റെ പരമാവധി കൃത്യമായും ഉത്തരം നൽകിയിട്ടുണ്ട്. സമ്മതം നൽകാൻ വ്യക്തിയെ നിർബന്ധിച്ചിട്ടില്ലെന്നും സമ്മതം സ്വതന്ത്രമായും സ്വമേധയാ നൽകിയിട്ടുണ്ടെന്നും ഞാൻ സ്ഥിരീകരിക്കുന്നു.

ഗവേഷകന്റെ പേര് :

ഗവേഷകന്റെ ഒപ്പ് :

തീയ്യതി :

श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान, त्रिवेन्द्रम
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Institutional Ethics Committee

CDSCO Registration No: ECR/189/Inst/KL/2013/RR-21
DHR Registration No:EC/NEW/INST/2022/2775

SCT/IEC/2165/DECEMBER/2023

11.01.2024

Dr. Dileepkumar SR
MPH Student, AMCHSS
SCTIMST, Thiruvananathapuram

Dear Dr. Dileepkumar,

The Institutional Ethics Committee held on 30th December, 2023, reviewed and discussed your application to conduct the study titled "**BARRIERS AND FACILITATORS OF COMMUNITY BASED FIRST RESPONDERS IN PROVIDING FIRST AID TO THE POST-CRASH VICTIMS IN THE ROAD ACCIDENT BLACKSPOTS OF ALAPPUZHA DISTRICT, KERALA**" **(IEC /2165)** "

Principal Investigator	Dr Dileepkumar S R, MPH Student, AMCHSS, SCTIMST
Co-Principal Investigator(s)	Dr Srikant A, Associate Professor, AMCHSS, SCTIMST Prof Sankara Sarma P, Professor (Senior Grade), AMCHSS, SCTIMST
Duration of the study	6 months

The following members of the Ethics Committee were present at the meeting held on 30th December, 2023

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Smt. Sathi Nair	MA (English Literature)	Female	Lay Person	No
2.	Dr. Kala Kesavan P	MBBS,MD	Female	Basic Medical Scientist	No
3.	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
4.	Dr. P. Manickam	BSMS, MSc (Epid).,PhD	Male	Health Science Expert/ Social Scientist	No
5.	Dr. Christina George	MD Psychiatry	Female	Clinician	No
6.	Dr. Narayanan Namboodiri. K K	MBBS,MD,DM	Male	Clinician	Yes
7.	Dr. Biju Soman	MBBS,MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes

The following documents were reviewed:

Original submission

1. *Checklist Form*
2. *Covering letter addressed to the Chairman, IEC, SCTIMST dated 30.11.2023*
3. *Responses/Amendments made based on the Reviewer's comments*
4. *IEC Application Form*
5. *Research Proposal*
6. *Interview schedule in English and Malayalam*
7. *Participant Information Sheet and Informed Consent in English and Malayalam*
8. *CV of Principal Investigator and Co-PIs*
9. *Declaration Form*
10. *SRC Recommendation Letter*

Revised submission

1. *Checklist Form*
2. *Covering letter addressed to the Chairman, IEC, SCTIMST dated 10.01.2024*
3. *Responses/Amendments made based on the Reviewer's comments*
4. *Copy of IEC Recommendation letter dated 09.01.2024*
5. *Responses/Amendments made based on the Reviewer's comments*
6. *IEC Application Form*
7. *Research Proposal*
8. *Interview schedule in English and Malayalam*
9. *Participant Information Sheet and Informed Consent in English and Malayalam*
10. *CV of Principal Investigator and Co-PIs*
11. *Declaration Form*

IEC Decision
The IEC approved the conduct of the study in the present form.

Remarks:
The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team / Guide who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,

Dr. G. Srinivas
Member Secretary, IEC

MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST, THIRUVANANTHAPURAM

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY
INSTITUTIONAL ETHICS COMMITTEE (IEC)
SCTIMST
THIRUVANANTHAPURAM

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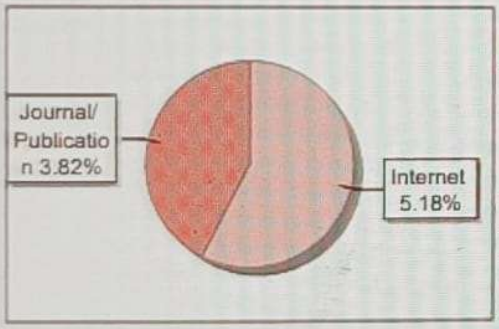

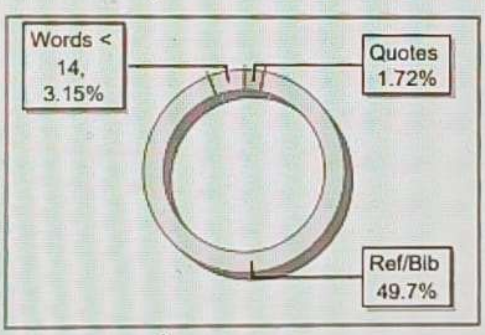

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