

**ASSESSING PREHOSPITAL CARE PREPAREDNESS IN
SUBURBAN RAILWAY STATIONS OF MUMBAI'S CENTRAL
LINE**

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Dissertation submitted in partial fulfilment of the requirements
for the award of Master of Public Health



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June 2025

Acknowledgments

I would like to express my deepest gratitude to all those who contributed to the completion of this thesis, a milestone in my Master's in Public Health (MPH) journey.

First and foremost, I would like to thank the Almighty.

I am sincerely thankful to my guide, Dr. Srikant A.(Additional Professor), and Dr. Rakhal Gaitonde (Professor), Achutha Menon Centre for Health Sciences Studies (AMCHSS), for their invaluable guidance, patience, and encouragement throughout this process. Their expertise and constructive feedback were instrumental in shaping this work.

I extend my gratitude to Dr. Biju Soman, Dr. Mala Ramanathan, Dr. Jissa V.T., Dr. Srinivasan K., Dr. Manju Nair, Dr. Jeemon P., and Dr. Ravi Prasad Varma for their academic support and for equipping me with the knowledge and skills to undertake this research.

I would also like to thank Mrs. Usha Pillai and Mr. P.N. Ramachandran (Operating Department, Central Railway Mumbai Division), Mr. Shrikant Nair and Mr. Valmik Shardul and Dr. Ravindra Shisve, IPS (Mumbai Railway Police Commissionerate), for their support and permission to conduct this study.

I would also like to thank my batchmates for their support during this journey.

To my family and friends, thank you for your unwavering emotional support, motivation, and understanding during the challenging phases of this work. A special mention to my parents for their constant encouragement and belief in my abilities.

Lastly, I acknowledge the participants of this study, whose willingness to share their experiences made this research possible. Their voices are at the heart of this work.

This thesis is a culmination of collective effort, and I am forever grateful to everyone who made it achievable.

Thank you

DECLARATION

I hereby declare that this dissertation titled “Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai’s Central Line” 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.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 “Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai’s Central Line.” is a record of the research work undertaken by Nair Saranya Raj 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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June 2025.

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Glossary of Abbreviations

IR – Indian Railway

GRP – Government Railway Police

SM – Station Master

RPF – Railway Protection Force

CPR – Cardiopulmonary resuscitation

AED – Automated External Defibrillator

EMR – Emergency Medical Room

CSMT – Chhatrapati Shivaji Maharaj Terminus

ADR – Accidental Death Report

NSG – Non-Suburban group

SG – Suburban group

HG – Halt group

ODK – Open Data Kit

BLS – Basic Life Support

NGO – Non-governmental Organisation

RTI – Right to Information

MMR – Mumbai Metropolitan Region

AOR – Adjusted Odds Ratio

ABSTRACT

Background - Mumbai's suburban railway network transports over 6.1 million passengers daily. It faces significant challenges in prehospital care, with more than two thousand fatalities occurring annually due to accidents. Existing research has predominantly examined post-accident care through hospital-based evaluations of injured. However, there remains a critical gap in assessing prehospital care preparedness at the station level, including infrastructure and human resources (primary responders).

Methodology - A cross-sectional study was conducted among 286 primary responders (246 Government railway police personnel and 40 Station masters) across Mumbai's central line stations. Data were collected using structured questionnaires to assess prehospital care knowledge, barriers and facilitators among primary responders, and an observational checklist to assess the resource availability at 25 railway stations. Statistical analysis was performed using R software version 4.3.2, incorporating chi-square tests, Fisher's exact tests to compare GRP and SM responses, and logistic regression to identify factors that are associated with prehospital care knowledge.

Results – The median participant age was 35 years, with SMs being generally older and more experienced. While 97.5 percent of SMs had participated in first aid training, only 36.5 percent of GRP personnel had participated in first aid training. SMs scored higher on knowledge assessments. Male participants (AOR = 1.78, 95% CI: 1.06 – 3.02) and those who had participated in first aid training (AOR = 2.05; 95% CI: 1.26 – 3.33) had nearly twice the odds of demonstrating prehospital care preparedness. Resource assessments revealed that only 24 percent of stations had Automated External Defibrillators (AEDs) and 16 percent had standby ambulances. Systemic barriers, such as a lack of access to medical boxes and a lack

of transportation, were frequently reported by GRP personnel. Additional physical and logistical challenges varied by responders' role.

Conclusion – The effectiveness of prehospital care is currently limited by resource shortages (like AED, Ambulance), knowledge deficiencies among primary responders, and uneven resource access. Prioritising these three areas will be crucial for improving prehospital care preparedness and hence preventing avoidable deaths.

CHAPTER ONE: INTRODUCTION

1.1 Overview of Mumbai

Mumbai, which consists of the Mumbai city and suburban districts, is a heavily populated city situated on a peninsula (Mumbai City District Government, 2025). The Mumbai Metropolitan Region (MMR) is made up of parts of Thane, Palghar, Raigad, Mumbai City, and the suburban area. It attracts workers from across the country (MMRDA, 2025). The city struggles with high income inequality and limited affordable housing. Hence, many residents live in distant suburbs and commute 50–100 km daily to work (Lewis, 2019).

The Mumbai suburban railway plays a critical role, enabling millions to travel efficiently and affordably in just 1–2 hours for long distances.

1.2 Mumbai suburban railway system

Western and Central Railway together run Mumbai's suburban railway system. As shown in the figure one, Western line runs from Churchgate to Dahanu (124 km), while Central railway manages three lines:

- Central line: CSMT–Kalyan–Kasara (120 km)/Khopoli (114 km)
- Harbour line: CSMT–Goregaon (27 km)/Panvel (49 km)
- Trans-harbour line: Thane–Panvel (34 km) (Mumbai Railway Police, 2021).

Together, these divisions operate over 2,342 daily services, making it one of the busiest rail systems globally with a daily ridership that exceeds 6.1 million (Shah, 2023).

This massive footfall brings safety concerns. On average, seven people die daily due to railway incidents like falls and track crossings (Sood, 2024). In 2023, 2,590 deaths were reported. These numbers indicate the urgent need to assess prehospital emergency care along the central railway line (Sood, 2024.; Natu, 2024).

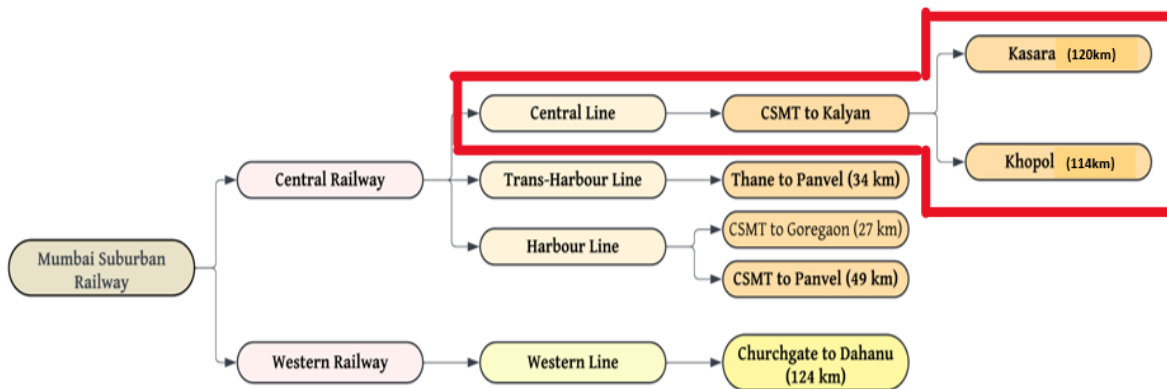


Figure 1 shows the Mumbai suburban railway system with the area of study in the red box

1.3 Categorisation of railway stations

The revised categorisation of railway stations by Indian Railways was implemented in November 2017. Stations were grouped into three broad types: Non-Suburban (NSG), Suburban (SG), and Halt (HG), and further classified into one to six categories within each type based on passenger footfall and revenue generation. This classification is reviewed annually, and station categories may change accordingly. The primary purpose of this system is to guide the allocation of commuter amenities and infrastructure development, ensuring resource distribution based on the operational load of each station (Press Information Bureau, 2018).

1.4 Mumbai suburban railway system - challenges

The Mumbai suburban railway is an important part of the daily lives of millions of people. The system faces certain difficulties due to the large number of passengers it serves every day. During peak hours, trains are extremely crowded, which makes travel uncomfortable and sometimes unsafe for commuters (Telegraph India, 2024).

Another challenge that is seen is people crossing railway tracks instead of using designated overbridges. This happens for reasons like the need to save time or the lack of convenient

alternatives. Unfortunately, this could lead to accidents that could be avoided (Gokarn, 2024).

1.5 Prehospital care in railway systems

Medical emergencies can arise anytime in crowded public transport, like Mumbai's suburban railway. Prehospital care plays an important role in improving outcomes in emergencies (Bhattarai et al., 2023; Chandrasekharan et al., 2016; Radjou et al., 2013).

In Indian railway systems, these emergencies are addressed through station-based medical staff or first aid trained personnel. These strategies depend on factors such as the passenger flow, station density, and common incident types (Abhilash et al., 2020).

Mumbai's massive commuter base and vast network make it difficult to provide timely prehospital care, which is both essential and challenging. The system's high density and demand tailored prehospital care solutions to ensure commuter safety (Sood, 2023; Kappal, 2018).

1.6 Background

The Mumbai suburban railway system has been operational since the late 19th century (Mumbai Suburban Railway, 2024). Despite advancements in technology and infrastructure, safety concerns remain a big issue. The frequency of accidents has urged various stakeholders, including government agencies, healthcare providers, and non-governmental organisations, to explore solutions to improve prehospital care mechanisms. Earlier, the prehospital care for railway accident victims in Mumbai was inadequate (Laytin et al., 2017). Many victims remain unattended at accident sites for extended periods before receiving medical assistance. This is mainly due to the location of the incident causing the delay (Bhuyan, 2019; Verma & Barnagarwala, 2015; Siddique, 2019).

Several initiatives have been introduced to enhance prehospital care along the Mumbai Suburban Railway System in recent years. Emergency Medical Rooms (EMRs) at key railway stations represent a significant step forward in providing immediate medical assistance (Ganapatye, 2017). These facilities are designed to stabilise patients before their transfer to hospitals and hence reducing delays in treatment (Raj, 2023). Along with it, training programs for railway staff have been initiated to equip them with essential first aid skills, such as Cardiopulmonary Resuscitation (CPR) and basic trauma management (Patel, 2018).

Despite the attempts made, challenges still persist. Many commuters are unaware of the medical facilities that are available at railway stations, and they prefer to seek help from law enforcement officers during any emergency (Raj, 2023). This lack of awareness can lead to a delay in seeking help during emergencies, which ultimately worsens outcomes for injured.

1.7 Literature Review

1.7.1 Burden of injuries

Over the past 20 years, 51,802 people have died on Mumbai's suburban trains. Out of which, 29,321 deaths occurred on the central railway and 22,481 on the western railway (Vidya & Acharya, 2024). Most of the deaths occur due to trespassing, that is, crossing the railway track, and the second most common cause is falling off the overcrowded train during peak hours (Central Railway Police Report, 2023).

In 2022, there were 23,139 railway accidents nationwide. Out of these accidents, 2,457 people were injured, and 20,792 people died. There was an increase of 28.6 percent in accidents as compared to the previous year (17,993). According to the report, 73.7 percent of the railway accidents (17,053) were reported under the category, 'Fall from trains/collision

with people on track'. Maharashtra accounts for 4,827 (20.9 percent) of the deaths, the highest among all and most of the accidents occurred during peak hours of 18:00 hrs to 21:00 hrs (805 deaths) and 09:00 hrs to 12:00 hrs (755 deaths). Maharashtra has reported the majority of 'Fall from trains/collision with people on track', accounting for 27.4% (National Crime Bureau Report [NCRB], 2023). Mumbai reported the most fatalities at 2,507, the highest in India (Aklekar, 2023).

The maximum number of victims in suburban train accidents across India was found to be in the range of 20 – 40 years and they belong to the working age group, with most of the studies showing a higher proportion of males compared to females (almost three times higher than females) (Bagaria et al., 2020; Bhoyar et al., 2020; Chatterjee et al., 2022; Joshi, 2022; Laytin et al., 2017; Roy et al., 2010; Sabale & Mohite, 2010; Solomon, 2022; Tyagi et al., 2015).

1.7.2 Patterns of injuries in railway accidents

Most of the accidents that happen in the Mumbai suburban line are due to trespassing and falling off trains. The injured commonly have complex patterns of injuries from falling and striking blunt objects at high speeds. Because the injuries commonly occur in remote areas, they have especially prolonged prehospital delays in care (Laytin et al., 2017). This results in the loss of the golden hour, a critical period for effective treatment, increasing morbidity and mortality. The delay in care often worsens outcomes, making timely medical intervention essential (Bhuyan, 2019; Kappal, 2018; Verma & Barnagarwala, 2015).

The injuries are due to the impact of the moving train, which generates tremendous momentum and causes severe injuries. Head injuries are the most common injuries reported, followed by crush injuries and amputations of extremities (Bhoyar et al., 2020; Chatterjee et

al., 2022; Sabale & Mohite, 2010; Tyagi et al., 2015). Death mostly occurs due to head injury, causing haemorrhage, followed by spinal injury, abdominal injury, chest injury, and injuries to the upper and lower limbs (Chatterjee et al., 2022). The major cause of death is commonly hypovolemic shock, which may be prevented by timely intervention to stop the bleeding (Laytin et al., 2017).

1.7.3 Process of reaching the hospital: Pathway from accident site to the hospital

In a road accident, crowd typically gathers quickly and calls for help, and an ambulance arrives promptly to transport the injured. Railway accidents can be a bit different. When an accident occurs at a station, like a person falling from the platform, the response tends to be more or less similar to road accidents. However, if someone falls onto the train tracks or gets trapped under a train, extracting the person can take longer, and the injuries are often severe, making it difficult for responders to transport them safely.

In cases where a person is injured between stations while the train is in motion, a common scenario. Such incidents are usually reported by either the locomotive pilot or fellow passengers to the GRP or RPF through a toll-free number. The location of the fall is typically identified by referencing the nearest electric pole number, enabling responders to reach the location faster. However, when fellow passengers report the incident, they may not know the exact electric pole number; in that case, they provide the nearest station or the station jurisdiction in that area.

Once the station is alerted, the SM notifies the on-duty GRP personnel and stretcher hamaals, instructing them to report to the SM's office. The responders then proceed on foot or by the next available train, depending on the accident's distance from the station. The SM travels with the locomotive pilot in the front cabin, while other responders occupy the following

cabin, keeping an eye out on both sides for the injured person. When they locate the person, they stop the train, get down, place the injured on a stretcher, and either walk back or wait for the next train.

During this time, an ambulance is kept ready at the station. If the station is equipped with an EMR, an on-duty doctor might accompany the responders to provide immediate assistance or administer prehospital care at the EMR before the person is taken to the ambulance. The SM also informs the nearest hospital about the patient's impending arrival. Government Railway Police personnel and stretcher hamaals accompany the individual to the hospital, with GRP personnel remaining with them to begin the necessary legal documentation related to the accident. The entire pathway is shown in Figure two.



Figure 2: The path from the accident site to reaching the hospital

Modified using - (Joshi, 2022; Solomon, 2022)

1.7.4 Trimodal distribution model

The trimodal distribution model (Figure three) was first articulated by Trunkey in 1983. This model categorises trauma deaths into three time frames: (Sobrino & Shafi, 2013)

1. **Immediate Deaths:** Usually caused by catastrophic injuries that are incompatible with survival, such as severe brain damage or major haemorrhage, immediate deaths take place seconds to minutes after the incident.
2. **Early Deaths:** Usually related to hemorrhagic shock or other life-threatening illnesses, early deaths occur minutes to hours after an accident.
3. **Late Deaths:** These happen days to weeks after the injury and are often due to complications such as multi-organ failure or sepsis. While these deaths may not be directly preventable at the time of injury, optimal early management can mitigate risks.

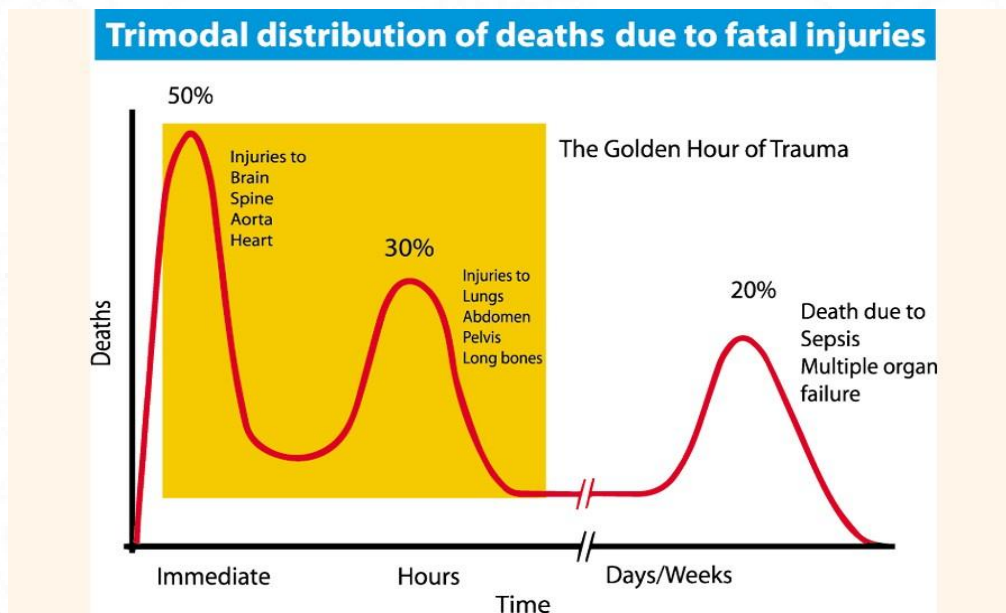


Figure 3 shows the trimodal distribution of deaths due to fatal injuries

Courtesy: (Ahmad, 2023)

The ‘golden hour’, the first hour after trauma, is critical, as up to 80 percent of trauma deaths occur during this time. Prompt prehospital care can greatly reduce mortality, yet it remains underdeveloped in many countries, including India (Bhattarai et al., 2023).

Recent studies show a shift from a trimodal to a bimodal pattern of trauma deaths, with peaks within the first hour and again within 24 hours (Hwang et al., 2020). This change is largely due to advances in resuscitation and critical care, particularly in regions with strong prehospital and trauma care systems (Gunst et al., 2010). The shift highlights the need to improve early emergency response to save lives.

1.7.5 Prehospital care in railway network

The burden of injury in India is very high, and the trauma care system is still in its early phase, with the major challenge faced by it being limited resources and a lack of coordination. (Laytin et al., 2017).

Compared to road traffic accidents, train accident victims receive less prompt prehospital care (Bhoyar et al., 2020). Although the average arrival time was 38.1 minutes, and most patients reached within the golden hour, only 10 percent received any prehospital treatment.

Many victims were transported by taxis, often arranged by the GRP, with patients bearing the cost (Roy et al., 2010). Even when ambulances were used, and doctors were present 95 percent of the time, only 10 percent received first aid during transit. Key barriers included a lack of resources and difficulty performing procedures like intubation during transit (Bhoyar et al., 2020).

Many accident victims received little to no prehospital care before being taken to hospitals, according to research done between 2014 and 2016. In addition to making injuries worse, this lack of treatment may raise victim fatality rates (Bhoyar et al, 2020).

1.8 Rationale for the study

1.8.1 Why railway accidents?

Very few studies have been done on railway accidents, particularly in Mumbai suburban railway systems, even with a high fatality rate among all other public transport systems.

1.8.2 Why the central line?

The central line is the busiest and longest suburban railway line of Mumbai's suburban railway network, with 3.5 million daily commuters and 51 stations. Data from 2024 shows it has a higher incidence of fatalities compared to other lines, including the western line (Sood, 2024). Its scale and risk profile make it a critical focus area for emergency preparedness.

1.8.3 Why the chosen primary responders?

1.8.3.1 Role and relevance:

Among the key responders to railway emergencies are the GRP, SMs, and Hamaals. GRP and SMs play central roles in coordinating the response, managing the scene, and escorting the injured to hospitals. GRP personnel are often the first point of contact for injured individuals (Joshi, 2022).

1.8.3.2 Focus of the Study:

This study was done on GRP and SMs due to their direct involvement in medical emergencies and decision-making during the critical first response phase (Government of India, Ministry of Railways, 2007; Ministry of Railways [Railway Board], 2011). RPF personnel were excluded as their roles are either limited to logistical support or focused on asset protection. In addition, research permissions were not granted for RPF participation.

1.8.3.3 Justification for exclusion:

Hamaals operate under the direction of GRP and SMs, and including them may dilute the depth of insights into emergency response planning. Commuters were also excluded, as

incidents often occur between stations, making passenger intervention difficult or impossible.

1.8.4 Why prehospital care?

Prehospital care during the ‘golden hour’ is a crucial determinant of trauma outcomes. Prompt and informed action at this stage can significantly reduce morbidity and mortality. The preparedness and knowledge of primary responders about prehospital care can directly influence their ability to deliver effective care. Additionally, the presence and accessibility of facilities like Emergency Medical Rooms (EMRs) and prehospital care services at stations are vital in managing railway-related injuries.

1.9 Gaps in research

Mumbai’s railway system reports higher accident rates than other regions in India and globally (NCRB, 2023). Yet, there is a lack of research focusing on prehospital care from the railway station or first responder perspective. Current literature lacks studies assessing the knowledge and preparedness of primary responders in railway settings or assessing the impact of station-based medical infrastructure on trauma outcomes (Bhoyar et al., 2020). This study addresses that gap by assessing the prehospital care preparedness at railway stations, aiming to identify key areas for improving Mumbai’s prehospital care system (Roy et al., 2010).

1.10 Objectives

A) Major objectives

- a) To evaluate the level of knowledge among primary responders in providing prehospital care to victims of injuries sustained in the central line of Mumbai's suburban railway.
- b) To assess the preparedness for providing prehospital care at suburban railway stations of the central line in Mumbai.

B) Minor objectives

- a) To assess the barriers and facilitators in providing prehospital care to victims of injuries sustained in the central line of Mumbai's suburban railway.

CHAPTER TWO: METHODOLOGY

2.1 Study type/design:

The study was a cross-sectional survey among primary responders to railway accidents in Mumbai's central line to assess their knowledge of prehospital care. An observational checklist (See Annexure IV) was used by the Principal Investigator (PI) to assess the prehospital care preparedness of suburban railway stations in Mumbai's central line. (Figure four)

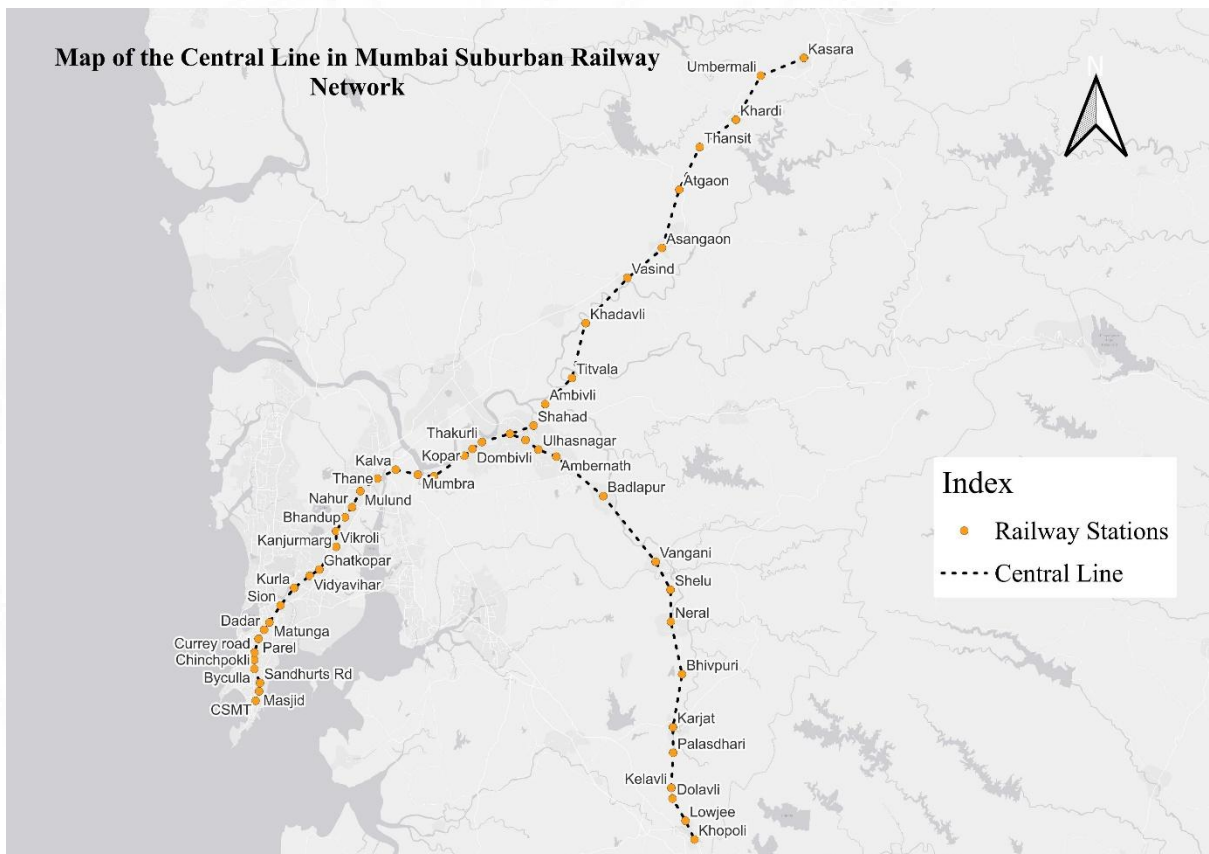


Figure 4 shows a map of the central line in the Mumbai suburban railway network

2.2 Study setting:

The survey was conducted among GRP personnel and SMs working at the railway stations in the central line of Mumbai's suburban railway system.

2.3 Study population:

Primary responders in Mumbai's suburban railway accidents are usually the SMs and GRP personnel, who respond immediately to accidents on their duty station or railway tracks near their station. Hence,

1. They were included as participants of the study.
2. Commuters were excluded as most accidents occur between stations, making it difficult for them to respond, and the likelihood of interviewing a witness was low.
3. PI ensured participation from all sexes.

The number of SM in this study was lower than GRP personnel. This was due to the observed pattern of staffing, where one SM (in charge of first aid) is present at a given point of time in all stations, while multiple GRP personnel were deployed simultaneously. Participants available during data collection were influenced by this.

2.4 Inclusion criteria:

GRP personnel and SMs, and Deputy SMs in the central line of Mumbai's suburban railway stations.

2.5 Exclusion criteria:

GRP personnel and SMs and Deputy SMs who were absent on the day of the visit of PI and unwilling to participate in the study.

2.6 Sample size estimation:

The sample size for estimating proportions was calculated using the formula $N = (Z_{\alpha/2})^2 p(1-p)/d^2$, where a 95% confidence interval ($Z = 1.96$) and a margin of error (d) of 5% were applied. Due to the absence of prior literature on prehospital care assessment or knowledge

levels among the specified cadre, the proportion (p) was assumed to be 0.5 to achieve the maximum sample size. This calculation gave an initial sample size of **384**. After adjusting for the finite population (approximately 1,000 for GRP and SM), the corrected sample size was determined to be **N = 278**. To account for a non-response rate of 10%, the final number of participants to be approached for the study was **309**.

A total of 294 individuals were approached out of which 286 consented to participate in the study.

2.7 Sample selection procedures:

2.7.1 Selection of GRP -

PI received permission from the Mumbai Railway Commissionerate to conduct the survey at seven major railway police stations along the central line. These stations serve as central hubs where all GRP personnel report for attendance before commencing their duty, including those assigned to General Duty and the Accidental Death Reports (ADR) Department.

The seven Railway Police Stations were

1. CSMT Railway Police Station
2. Dadar Railway Police Station
3. Kurla Railway Police Station
4. Thane Railway Police Station
5. Dombivli Railway Police Station
6. Kalyan Railway Police Station
7. Karjat Railway Police Station (See Figure five)

Seven railway police stations collectively oversee all 51 railway stations within the Mumbai suburban railway network's central line. All GRP personnel report to these seven police stations for attendance in person. The survey was administered to personnel who were on duty on the day of the visit to the respective railway police station. this date was not determined by the PI but fixed by the designated police station, as it was the day of the week when all police personnel reported there for in-person attendance. To some extent, this eliminated any biases that may emerge due to selection. The sample selection process is a form of cluster random sample representative of all the railway stations under a designated police station. This alternative was the only feasible sampling strategy that could be implemented in the circumstances. We should, however, point out that it was a random selection and also far more representative of all 51 railway stations than the original sampling strategy would have yielded.

While cluster sampling may increase design effect and intra-group similarity, it allows broader coverage and real-world representation of station variability. This makes the findings more generalizable to the entire suburban railway line. Any design effect introduced was mitigated by the inclusion of all zone clusters.

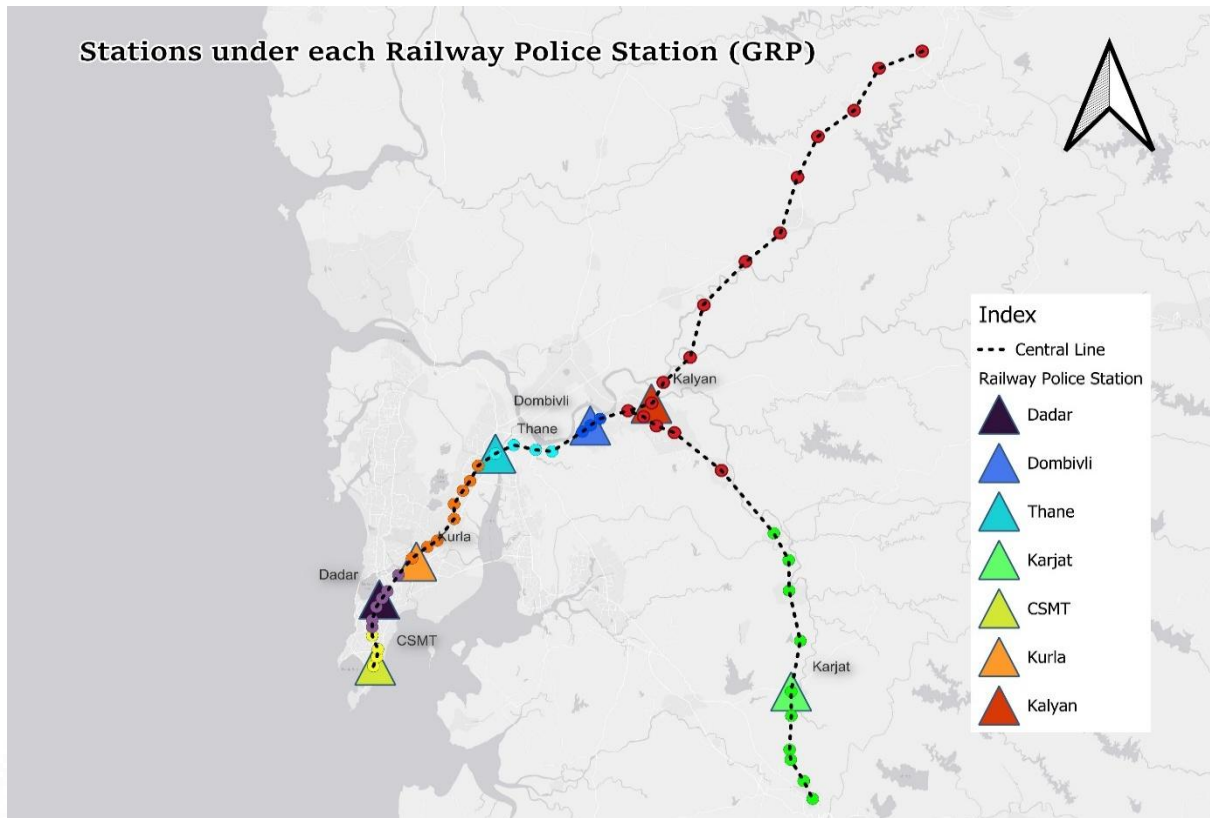


Figure 5 shows the distribution of railway stations under each GRP police station

2.7.2 Selection of stations for the observational checklist and SM –

Out of 51 stations on Mumbai's central line, 25 were randomly selected using R software (version 4.3.2). Stratification was based on the Indian Railways' 2023-24 station categorisation according to the revenue and footfall, obtained through Right to Information (RTI), with proportional representation from each category. The PI visited all selected stations, completed observational checklists, and consulted station authorities to gather insights. (Figure six)

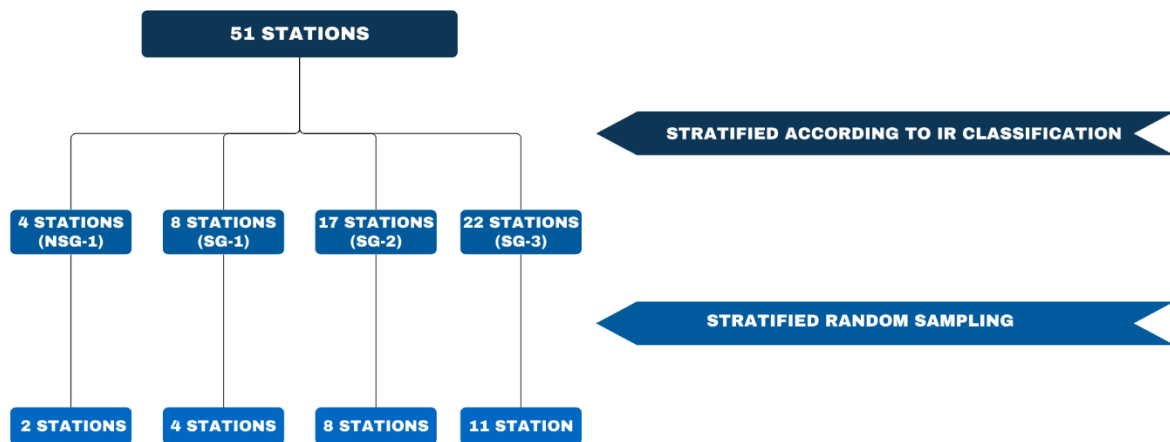


Figure 6 shows the sampling strategy for selecting stations (IR – Indian Railway)

2.7.3 Selection of Station Masters:

The sampling of SMs faced challenges due to uneven distribution across station categories (NSG-1, SG-1, SG-2, SG-3). To ensure balanced representation:

1. **NSG-1 stations** - Only two stations were initially selected, requiring repeated visits and the inclusion of a replacement station. Data was collected randomly; the day PI visited was considered random, and whoever was present during the visit was interviewed.
2. **SG-1 stations** - Some stations had low responses, prompting revisits to stations with better response rates at different times; these visits maintained randomness.
3. **SG-2 stations** – A Few of the SG-2 stations are overseen by the Commercial Department, which operates under the Operating Department. Unaware of this distinction, PI initially secured permission to study SMs from the Operating Department. When SMs from the Commercial Department were approached, they declined to participate, as the approval did not cover their section. Consequently,

replacements from the next randomly chosen stations were taken to achieve the required sample size.

4. **SG-3 stations** - Data was collected from all selected stations except for one with non-participation. Since the target was met, no replacement was needed.

In total, **40 SMs** participated, **10 from each category**, ensuring balanced representation despite the challenges. Although fewer SMs were sampled overall compared to GRP personnel, stratification ensured equal representation from different categories of stations. This approach helped balance sample diversity despite lower numbers.

PI could collect data from 246 GRP personnel and 40 SMs at the end of the data collection.

2.8 Tools and data collection:

A self-administered questionnaire was prepared on prehospital care, which had six major themes which were-

- Demographic details
- Awareness of first aid
- General first aid knowledge
- Awareness of specific railway accident scenarios
- Awareness of medical box
- Barriers and facilitators

Along with the questionnaire, an observational checklist was used to assess the prehospital care facilities available at the randomly chosen railway stations.

This Observational Checklist includes-

- Emergency facilities and equipment availability
 - Medical box/first aid box

- AED (Automated External Defibrillator)
- Stretcher
- Ambulance
- Staff and personnel
 - Uniformed personnel
 - Lady personnel
- Emergency response protocol
 - Incident reporting protocol
- Cleanliness and maintenance
- Emergency response readiness
 - Display of emergency contact numbers for passengers
 - Communication devices availability
 - Coordination with local emergency services
- Emergency Medical Room (For Stations with Functional EMR)

The themes for the data collection were selected to collect information on the ground realities regarding the knowledge, attitudes, practices, barriers, and facilitators of the primary responders.

Data collection was conducted after obtaining the Institutional Ethics Committee approval and approval from the respective authorities in railways and in the Commissionerate to conduct the study.

The data was collected from potential primary responders, namely, SMs and GRP Personnel, through a self-administered questionnaire (See Annexure III). The informed consent (See Annexure II) was collected after giving the participant an information sheet (See Annexure

I) regarding the research study and clarifying doubts, if any. The participant information sheet was read out, if necessary and explained by the PI. The questionnaires were answered on a one-to-one basis with SMs, and a group of GRPs administered the questionnaire and were supervised by the PI. All participants were informed that they may be contacted again if required. PI visited all 25 stations and did the observations required for the checklist.

2.9 Data entry and analysis:

PI collected data in paper forms from the participants and entered the data into ODK forms, which she made. The completed forms were stored securely under the PI's custody, who bears the sole responsibility of data security. The soft data was generated using ODK and did not have any personal identification data, and all the participants were given unique participant IDs.

Analysis of the data was done under the supervision of guide. Data cleaning and quantitative data analysis were done using R software version 4.3.2. The significance level, $p\text{-value} < 0.05$, was considered for deciding the statistical significance. The data obtained through the questionnaire were grouped into different categories. The frequencies and proportions were calculated for the categorical variables.

Outcome

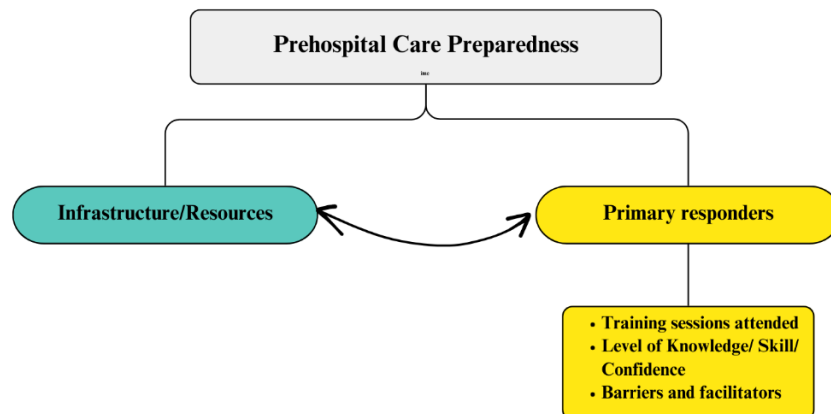


Figure 7 Flowchart showing Outcome

The outcome of prehospital care preparedness (Figure seven) was reached through two components (variables): infrastructure and primary responders (Human resources). Their training, skills, and confidence in emergencies were examined, and the key barriers and facilitators affecting their response and available infrastructures were assessed, along with the interlink between these two components in achieving better prehospital care.

Knowledge levels were assessed using a score out of 18, with one point for each correct answer and zero marks for the wrong answer. Scores were categorised as ‘Good knowledge’ (median and above) and ‘Poor knowledge’ (below median). Analysis was conducted for all participants and dichotomised by type of job, GRP group, and SM group separately using logistic regression (Univariate and Multivariable analysis). This approach captures differences and similarities between groups, as the score distribution across different job categories.

The data were compared between the stations belonging to different categories (NSG-1, SG-1, SG-2 and SG-3) using the chi-square test or Fisher exact test. Also, the data were compared among the sub-groups of the participants to determine their level of knowledge as well as the barriers and facilitators among them. Stations were compared for the data obtained from the observational checklist using the chi-square test or Fisher exact test.

2.10 Ethical considerations:

Approval from the Institutional Ethics Committee was obtained on 15 January 2025 for this study. (SCT/IEC/2338/DECEMBER-2024)

The study was conducted after approval from the Institutional Ethics Committee of Sree Chitra Tirunal Institute for Medical Sciences and Technology and the relevant authorities from Central Railway, Mumbai Division and Mumbai Railway Police Commissionerate.

Before providing the questionnaire, the participants' informed consent for participating in the study was obtained. The informed consent was gathered after giving the participants an information sheet in the local language and clarifying doubts, if any, regarding the study. Participants were informed regarding the voluntary nature of the participation, study objectives, and the potential benefits and risks of the participation. The participants could either accept or refuse to participate and could withdraw from the study at any time during the study without any explanation. Utmost priority was given to protect the privacy and confidentiality of the participants, and the collected information will not be shared with anyone not involved in the study. At no stage will the identity of the participant be revealed.

2.11 Operational definition:

- **Primary responder** – A person actively engaged in responding to an emergency or critical situation. In this context, GRP Personnel and SMs were considered primary responders because they were obligated by duty to participate in emergency response efforts.
- **Prehospital care** – The medical services provided to patients before arriving at a hospital, typically provided by primary responders at the emergency scene. It includes a wide range of interventions, such as basic first aid, stabilisation of injuries, and administration of medication. Prehospital care aims to stabilise the patient until they receive definitive treatment at a hospital.
- **Preparedness** - Preparedness refers to the state of being fully equipped and ready to provide effective prehospital medical care in emergencies.

- **Suburban Trains** – Suburban trains are those trains that travel up to 150 km to facilitate the rapid movement of passengers within the cities, suburbs and extended suburban areas (Comptroller and Auditor General of India [CAG], 2016, p. 1).

2.12 Terms-

Station Master/Station Manager – The SM are Indian Railway officials responsible for the management of other station employees and for the safety and efficient running of the station.

Government Railway Police Personnel - The GRP is a branch of the state police responsible for maintaining law and order and investigating crimes on railway premises and trains. Unlike RPF, which protects railway property and passengers, the GRP handles legal proceedings. Crimes detected by the RPF are handed over to the GRP for investigation (Government Railway Police, 2025). Apart from this, they are obliged by their duty to take the victims from the site of the accident to the hospital and investigate the incident (Ministry of Railways [Railway Board], 2011).

Knowledge of general first aid – Nine questions on general first aid were included in the section ‘General First Aid Knowledge’, which was created using basic knowledge about first aid (Indian Red Cross Society, 2016; International Federation of Red Cross and Red Crescent Societies, 2020). Correct responses were given one mark, and wrong responses were given zero.

Knowledge on specific railway-related accident first aid – A vignette-based assessment with nine railway-related scenarios tested knowledge on common railway injuries and was included in the section ‘Specific Railway Accident Scenarios’. Each correct answer scored one mark; incorrect answers received zero.

Knowledge of prehospital care – Cumulative score of both general first aid and railway accident-related first aid was taken. The Maximum score was taken out of 18.

Barriers and facilitators: The assessment included targeted questions to understand participants' perceived barriers and facilitators when responding to emergency situations. Participants were presented with multiple-choice options to identify the specific challenges they believe hinder their ability to act effectively during emergencies, as well as factors that could support or improve their response.

Medical box - As per the 2018 Press Information Bureau (PIB) of the Ministry of Railways, first aid boxes/kits were renamed as Medical box, and the apparatus to be kept in the box was decided by a group of experts from AIIMS, Delhi. Section of medical box assesses the level of awareness, location, contents, accessibility and designated person in charge of the medical box. These variables were taken as facilitators in providing prehospital care.

Training needs: Participants were asked to reflect on their experiences and indicate the types of training they feel were necessary to enhance their skills and preparedness. They could select from multiple-choice options, allowing them to highlight areas where they believe additional training or resources would be most beneficial. This helped identify gaps and prioritise training programs tailored to their needs.

CHAPTER THREE: RESULTS

The proposed sample size for the study was 278, although the PI could collect the data from 286 participants. The participants included both SMs and GRP personnel. A non-response was observed among some SMs, who declined due to fear of being identified by authorities, public criticism, discomfort with external assessment, or lack of time. Among GRP personnel, only one individual refused, citing blame from victims' families and a lack of support during emergencies. Of the 294 potential study participants approached, only eight individuals did not agree to participate, resulting in a non-response rate of 2.72 percent.

3.1 Demographic details

The demographic details of the study participants are presented in Table 3.1. The majority were GRP constables, comprising 246 out of 286 participants, resulting in a SM-to-GRP ratio of 1:6. It was not possible to determine the percentage of participation in relation to the entire workforce since the complete number of GRP staff and SMs, as well as their sex distribution, were unavailable. The overall median age of participants was 35 years, with an age range of 20–59 years. However, the median age differed between groups, with GRP constables being younger than SMs: SMs had a median age of 49 years (range: 27–59 years), while GRP constables had a median age of 34 years (range: 20–56 years). Around two-thirds of the study participants were males (n=197 participants). Most participants held a graduate degree. Employment duration varied, with most SMs having over 10 years of service, while less than half of the GRP personnel had similar experience. Station masters typically serve four years at a station, and GRP constables serve five to six years at a police station. As a result, most participants fell into the category of one to five years of employment at their current station.

Table 3.1: Sociodemographic characteristics of study participants

Characteristic	Overall, N = 286 ¹	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value
Age (In years)	35 (20 - 59)	34 (20 – 56)	49 (27 - 59)	<0.001 ²
Sex				
Female	89 (31%)	86 (35%)	3 (7.5%)	<0.001 ³
Male	197 (69%)	160 (65%)	37 (92.5%)	
Education level				
10 th	21 (7.1%)	21 (8.5%)	0 (0%)	<0.001 ⁴
12 th	76 (27%)	76 (30.9%)	0 (0%)	
Graduation	172 (60%)	136 (55.2%)	36 (90%)	
Post graduation	17 (5.9%)	13 (5.4%)	4 (10%)	
Duration of employment				
Less than 1 year	13 (4.5%)	13 (5%)	0 (0%)	<0.001 ⁴
1 – 5 years	81 (28%)	76 (31%)	5 (12.5%)	
6 – 10 years	58 (20.5%)	54 (22%)	4 (10%)	
More than 10 years	134 (47%)	103 (42%)	31 (77.5%)	
Duration of employment in current station				
Less than 1 year	80 (28.1%)	74 (30%)	6 (15%)	0.006 ⁴
1 – 5 years	155 (54.1%)	124 (50.4%)	31 (77.5%)	
6 – 10 years	24 (8.4%)	24 (9.8%)	0 (0%)	
More than 10 years	27 (9.4%)	24 (9.8%)	3 (7.5%)	

¹ Median (Range); n (%)² Wilcoxon Rank-Sum Test ; ³ Pearson's Chi-Squared Test; ⁴ Fisher's Exact Test

3.2 Awareness of first aid and perceived confidence levels

The details of the awareness of first aid among study participants is shown in Table 3.2.1.

Almost all SMs reported participating in first aid training sessions, while only 36.5 percent of GRP personnel had done so. Most participants participated in these sessions during their training period (which happens once every three – four years for SMs by DRH Kalyan, Maharashtra). In terms of training duration, 58.9 percent of GRP personnel reported sessions lasting only a few hours, whereas 61.5 percent of SMs underwent half-day training ($p < 0.001$). When assessing their prehospital care knowledge, 21.1 percent of trained GRP personnel rated it as 'excellent', compared to 7.7 percent of SMs. In comparison, 69.2

percent of SMs rated their knowledge as ‘good’, higher than the 53.4 percent of GRP personnel ($p = 0.026$). These findings suggest that SMs generally receive more consistent and longer training, leading to higher self-assessed confidence. At the same time, GRP personnel have limited training opportunities and shorter sessions, potentially impacting their preparedness and confidence. (Table 3.2.1)

Table 3.2.1: Awareness of first aid among study participants

Characteristic	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
Have you ever attended any first aid training sessions?			
Yes	90 (36.5%)	39 (97.5%)	<0.001³
No	156 (63.5%)	1 (2.5%)	
When was the training session attended?			
	N = 90	N = 39	<0.001
Training period for the job	55 (61.1%)	37 (94.8%)	
In service	24 (26.7%)	1 (2.6%)	
Others	7 (7.8%)	0 (0%)	
No answer	4 (4.4%)	1 (2.6%)	
Duration of the training session			
	N = 90	N = 39	<0.001
Few hours	53 (58.9%)	9 (23.1%)	
Half day	15 (16.7%)	24 (61.5%)	
Full day	14 (15.6%)	3 (7.7%)	
More than a day	5 (5.5%)	1 (2.5%)	
Others	2 (2.2%)	0 (0%)	
No answer	1 (1.1%)	2 (5.2%)	
Self-assessed knowledge of prehospital care among trained responders			
	N = 90	N = 39	0.026
Excellent	19 (21.1%)	3 (7.7%)	
Good	48 (53.4%)	27 (69.2%)	
Fair	20 (22.2%)	6 (15.4%)	
Poor	0(0%)	2 (5.2%)	
No answer	3 (3.3%)	1 (2.5%)	

¹ n (%); ² Fisher’s Exact Test; ³ Pearson’s Chi-Squared Test;

Participants were asked to rate their confidence in performing certain prehospital care procedures using a Likert scale from one to five, where one meant ‘least confident’ and five

meant 'very confident'. For easier analysis, these ratings were grouped into three categories: scores of one and two were labelled as 'least confident', three as 'moderate', and four and five as 'very confident'. The results showed a noticeable difference in confidence between GRP personnel and SMs. Overall, SMs reported higher confidence in most skills compared to GRP. However, when it came to placing a person in the recovery position, 44.7 percent of GRP felt very confident, while only 30 percent of SMs did. A significant gap was seen in managing bleeding, where 60 percent of SMs felt very confident compared to 36.5 percent of GRP as shown in Table 3.2.2

Both showed the least confidence in using an AED, with 42.2 percent of GRP and 52.5 percent of SMs reporting low confidence.

Table 3.2.2: Self-rated confidence to perform prehospital care skills among study participants
(1 to 5 – 1 being no/least confident and 5 being very confident)

Skills	Participant	Least confident (1-2)	Moderately confident (3)	Very confident (4 – 5)	No answer
CPR¹	GRP	48 (19.6%)	66 (26.9%)	110 (44.6%)	22 (8.9%)
	SM	2 (5%)	14 (35%)	21 (52.5%)	3 (7.5%)
Spinal stabilisation	GRP	53 (21.7%)	77 (31.3%)	90 (36.5%)	26 (10.5%)
	SM	12 (30%)	13 (32.5%)	12 (30%)	3 (7.5%)
Securing the airway	GRP	59 (24%)	48 (19.5%)	100 (40.6%)	39 (15.9%)
	SM	7 (17.5%)	12 (30%)	17 (42.5%)	4 (10%)
Managing fracture	GRP	82 (33.3%)	41 (16.7%)	85 (34.6%)	38 (15.4%)
	SM	9 (22.5%)	9 (22.5%)	18 (45%)	4 (10%)
Management of bleeding	GRP	59 (24%)	57 (23.2%)	90 (36.5%)	40 (16.3%)
	SM	3 (7.5%)	9 (22.5%)	24 (60%)	4 (10%)
Basic life support	GRP	52 (21.2%)	50 (20.3%)	103 (41.8%)	41 (16.7%)
	SM	3 (7.5%)	14 (35%)	19 (47.5%)	4 (10%)
Using AED²	GRP	104(42.2%)	27 (11%)	70 (28.5%)	45 (18.3%)
	SM	21 (52.5%)	6 (15%)	9 (22.5%)	4 (10%)
Safe movement	GRP	34 (13.9%)	24 (9.8%)	152 (61.7%)	36 (14.6%)
	SM	2 (5%)	6 (15%)	29 (72.5%)	3 (7.5%)
Choking first aid	GRP	34 (13.8%)	35 (14.3%)	140 (56.9%)	37 (15%)
	SM	7 (17.5%)	5 (12.5%)	25 (62.5%)	3 (7.5%)
Recovery position	GRP	52 (21.1%)	45 (18.3%)	110 (44.7%)	39 (15.9%)
	SM	15 (37.5%)	9 (22.5%)	12 (30%)	4 (10%)
Checking for consciousness and breathing	GRP	23 (9.4%)	50 (20.3%)	136 (55.3%)	37 (15%)
	SM	4 (10%)	6 (15%)	27 (67.5%)	3 (7.5%)

n (%);

¹Cardiopulmonary Resuscitation

²Automated External Defibrillator

3.3 Level of knowledge of prehospital care among GRP and SM

The knowledge of primary responders in prehospital care was assessed using two sections:

'Awareness of General First Aid' and 'Railway Accident Specific Scenario.' Each section had

nine questions, with one mark given for a correct answer and zero for an incorrect answer. The total score from these sections was used for assessment. Tables 3.3.1 and 3.3.2 list all the questions, with the correct answers highlighted in bold.

In the question about the site of chest compressions, some participants correctly identified the site for CPR but chose the wrong option in the questionnaire due to confusion with the terms used. Since they demonstrated the correct skill to the PI, they were given one mark despite the error in their written response. Most questions showed a significant difference in correct answers between the groups, with SM providing more correct answers compared to GRP, but the question about preserving a severed part in amputation cases had a similar proportion of correct answers from both subgroups.

Table 3.3.1: Responses to general first aid among study participants

Characteristic	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
What would you do to check if an unconscious person is breathing?			
Look, listen, and feel for breathing for at least 10 seconds.	50 (20.3%)	18 (45%)	0.012
Shake them and call their name loudly.	18 (7.3%)	2 (5%)	
Watch their chest for 5 seconds and then check for a pulse.	172 (70%)	20 (50%)	
I don't know	6 (2.4%)	0 (0%)	
What is the best way to ensure an unconscious person has a clear and open airway?			
Tilt their head back and lift their chin while checking if they are breathing.	144 (58.5%)	34 (85%)	0.009
Stand them up and tell them to take deep breaths.	12 (4.8%)	0 (0%)	
Give rescue breaths right away without checking their airway	51 (20.7%)	2 (5%)	
I don't know	39 (16%)	4 (10%)	
What do you think is the ratio of chest compressions to breaths while doing CPR?			
15:2	43 (17.4%)	0 (0%)	<0.001
30:2	111 (45.1%)	14 (35%)	
45:3	6 (2.5%)	1 (2.5%)	
I don't know	86 (35%)	25 (62.5%)	
While in need of performing CPR, where should you place your hands for compressions?			
Place both hands on the upper chest and compress.	195 (79.2%)	26 (65%)	0.026
Place both hands on the abdomen and compress.	4 (1.7%)	0 (0%)	
Place one hand on the chest and use the other hand to support it while compressing	32 (13%)	13 (32.5%)	
I don't know	15 (6.1%)	1 (2.5%)	
Are you aware of what does an AED (Automated External Defibrillator) do?			
It gives instructions on how to do CPR	47 (19.1%)	1 (2.5%)	<0.001
It shocks the heart to try to restart it	66 (27%)	23 (57.5%)	
It helps you call for emergency help	12 (4.9%)	0 (0%)	
I don't know	121 (49%)	16 (40%)	
What would you do to dress a severe bleeding wound?			
Pack it tightly with a clean cloth and apply pressure.	164 (66.7%)	38 (95%)	0.002

Characteristic	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
Clean it with water and cover it loosely with a bandage.	44 (17.9%)	1 (2.5%)	
Use tape to secure a dressing without pressure.	27 (11%)	1 (2.5%)	
I don't know	11 (4.4%)	0 (0%)	
Are you aware of the recovery position?			
Yes	88 (36%)	16 (40%)	0.63 ³
No	158 (64%)	24 (60%)	
If yes, why do you put someone in the recovery position?	N = 88	N = 16	
Keep their airway open	64 (72.7%)	16 (100%)	0.2
Stop bleeding	17 (19.4%)	0 (0%)	
Protect their spine	6 (6.8%)	0 (0%)	
I don't know	1 (1.1%)	0 (0%)	
How do you put an unconscious but breathing person in the recovery position?	N = 88	N = 16	
Roll them onto their back and raise their legs	20 (23%)	1 (6%)	0.002
Turn them onto their side, clear their airway, and place the top leg in front	38 (43%)	14 (88%)	
Leave them on their back and check their breathing	27 (30.6%)	0 (0%)	
I don't know	3 (3.4%)	1 (6%)	
How should you move a victim with a suspected spinal injury from a dangerous area?			
Gently pull them from under their arms without supporting the head and neck	39 (16%)	2 (5%)	<0.001
Use a rigid surface like a backboard to roll and transport them while keeping the spine and neck stabilised	95 (39%)	31 (77.5%)	
Carry them in your arms to avoid further injury	50 (20%)	1 (2.5%)	
I don't know	62 (25%)	6 (15%)	

¹ n (%); ² Fisher's Exact Test; ³ Pearson's Chi square test

Correct answers are highlighted in bold

Table 3.3.2: Responses to railway accident-specific scenarios among study participants

Characteristic	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
What is the most common cause of death among railway accident victims?			
Amputation	144 (58.5%)	6 (15%)	<0.001
Electric shock	4 (1.6%)	2 (5%)	
Severe bleeding	88 (35.8%)	32 (80%)	
I don't know	10 (4.1%)	0 (0%)	
What would you do first if someone fell off a train and is on the tracks?			
Make the area safe by warning oncoming trains and checking for hazards before getting close.	83 (33.9%)	30 (75%)	<0.001
Call for help and wait before doing anything.	26 (10.5%)	0 (0%)	
Quickly move the person to safety without checking for injuries.	133 (54%)	10 (25%)	
I don't know	4 (1.6%)	0 (0%)	
The victim is unconscious, not breathing, and with no pulse. (injuries of the victim are not yet assessed) What are you going to do first?			
Give rescue breaths	50 (20%)	8 (20%)	0.2
Start chest compressions	73 (30%)	18 (45%)	
Ensure the airway is open	101 (41%)	11 (27.5%)	
I don't know	22 (9%)	3 (7.5%)	
The victim has a broken bone in the hand. What are you going to do?			
Let the victim move the hand to see how much it hurts	20 (8.1%)	0 (0%)	0.2
Use a splint to support the hand and secure it with bandages	210 (85.3%)	39 (97.5%)	
Put ice directly on the hand and wrap it	6 (2.5%)	0 (0%)	
I don't know	10 (4.1%)	1 (2.5%)	
A man has been hit on his chest, is having difficulty breathing suddenly becomes unconscious but still breathing.			
What are you going to do?			
Place in the recovery position	3 (1.2%)	2 (5.0%)	0.022
Start chest compression	36 (14.7%)	1 (2.5%)	
Move the person immediately to a hospital	197 (80%)	37 (92.5%)	
I don't know	10 (4.1%)	0 (0%)	
What is the first step to take in case of a partial amputation?			
Apply direct pressure to the wound to stop the bleeding	70 (28.5%)	32 (80%)	<0.001

Characteristic	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
Pour water over the wound	3 (1.2%)	0 (0%)	
Move the person immediately to a hospital	166 (67.5%)	8 (20%)	
I don't know	7 (2.8%)	0 (0%)	
What should you do with the severed part (if found)?			
Place it in a clean plastic bag and then in ice water	154 (62.4%)	29 (72.5%)	0.058
Wash it with soap and water	19 (7.6%)	0 (0%)	
Keep the severed part in an ice box	45 (18.7%)	10 (25%)	
I don't know	28 (11.3%)	1 (2.5%)	
How should you position the injured person while waiting for help?			
Lay them down and keep the injured limb elevated	177 (71.9%)	37 (92.5%)	0.006
Sit them up	8 (3.3%)	0 (0%)	
Keep the hand down without moving it	41 (16.6%)	0 (0%)	
I don't know	20 (8.2%)	3 (7.5%)	
What will you do to help the person stay calm and prevent shock?			
Talk to them calmly, keep them warm, and elevate their legs slightly	193 (78.4%)	36 (90%)	0.5
Let them lie down	32 (13%)	3 (7.5%)	
Give them something to eat and drink	9 (3.7%)	0 (0%)	
I don't know	12 (4.9%)	1 (2.5%)	
What would you do first if you think someone has bleeding inside the body but no visible injuries outside?			
Lay the person down and keep them still with their legs up	79 (32.1%)	17 (42.5%)	0.001
Lie the person on their right side	46 (18.7%)	1 (2.5%)	
Press on their stomach to find where the bleeding is	26 (10.6%)	0 (0%)	
I don't know	95 (38.6%)	22 (55%)	

¹ n (%); ² Fisher's Exact Test; ³ Pearson's Chi-Squared Test

Correct answers are highlighted in bold.

The total score was calculated out of 18. Figure eight represents the distribution of total scores among GRP and SM. The GRP graph shows a near-normal distribution (skewness = -0.078) while the SMs graph shows a negatively skewed graph (skewness = -0.776),

indicating that most of the GRP participants scored between one and ten, with percentages decreasing as the scores increased and the exact opposite in SMs.

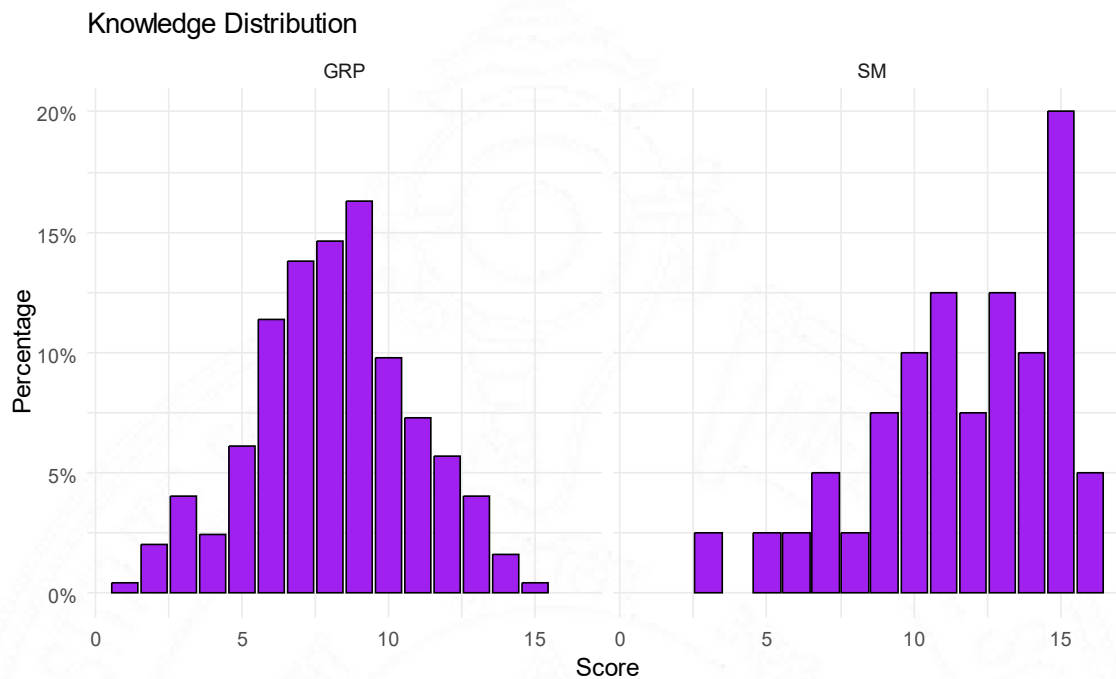


Figure 8: Total score distribution among study participants (percentage)

The total scores were divided into two categories, 'Poor knowledge' and 'Good knowledge,' using the median score for each group separately. This was done because the distribution of scores was different between GRP personnel and SMs. By using separate median splits for each group, we can better capture these differences.

The overall median score was nine (Range: one – 16). For GRP, the median score was eight with a range of one to 15, indicating a near-normal distribution, while SM had a higher median score of 12, with a range of three to 16, showing a negatively skewed distribution.

(Table 3.3.3)

Table 3.3.3 Median score and range of knowledge among study participants

Groups	Overall, N = 285 ¹	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
Median score and range	9 (1 – 16)	8 (1 – 15)	12 (3 - 16)	<0.001

¹ Median (Range); ² Wilcoxon Rank-Sum Test

3.4 Knowledge of prehospital care and demographic factors

We observed that prehospital care awareness was associated with sex and ever attending first aid training, as shown in Table 3.4. Sex showed a strong association ($X^2 = 6.69$, p-value = 0.01), with males having two times higher odds (OR = 1.95, 95% CI: 1.17–3.26) of having good prehospital care knowledge than females. Similarly, attending first aid training was significantly associated with better prehospital care knowledge ($X^2 = 10.45$, p-value = 0.01), with trained participants having two times higher odds (OR = 2.15, 95% CI, 1.36 – 3.52) of having good prehospital care knowledge than those without training. Upon multivariable analysis, slight attenuation was observed in the degree of association, although our findings remained unchanged.

Upon doing the subset analysis, it was seen that sex showed a similar association ($X^2 = 4.06$, p-value = 0.04), with males having almost two times higher odds (OR = 1.72, 95% CI: 1.01–2.94) of good prehospital care knowledge than females and participants with training had two times higher odds (OR = 1.85, 95% CI: 1.08–3.22) of having good prehospital care knowledge than those without training. No such association was observed among SMs, indicating that the association among the study participants was driven by GRP group.

Table 3.4: Knowledge of prehospital care and demographic factors in study participants

Characteristic	Good, N = 145 ¹	Poor, N = 141 ¹	X ² Value	P- Value ²	Crude OR ³	Adjusted OR ⁴
Age group	35 (20 - 59)	35 (21 – 58)	1.5445	0.12 ⁵	-	-
Sex						
Female	35 (39%)	54 (61%)	6.6868	0.01	1	1
Male	110 (56%)	87 (44%)			1.95 (1.17 – 3.26)	1.78 (1.06 – 3.02)
Employment duration						
Less than 1 year	5 (38%)	8 (62%)	2.4927	0.5	-	-
1 – 5 years	41 (51%)	40 (49%)				
6 – 10 years	34 (59%)	24 (41%)				
More than 10 years	65 (49%)	69 (51%)				
Station service duration						
Less than 1 year	42 (52%)	38 (48%)	0.4059	>0.9	-	-
1 – 5 years	79 (51%)	76 (49%)				
6 – 10 years	11 (46%)	13 (54%)				
More than 10 years	13 (48%)	14 (52%)				
Education level						
10 th	10 (48%)	11 (52%)	2.1347	0.5	-	-
12 th	35 (46%)	41 (54%)				
Graduation	93 (54%)	79 (46%)				
Post graduation	7 (41%)	10 (59%)				
Attended first aid training						
No	66 (42%)	91 (58%)	10.446	0.001	1	1
Yes	79 (61%)	50 (39%)			2.18 (1.36 – 3.52)	2.05 (1.26 – 3.33)

¹ n (%); Median (Range)² Pearson's Chi-Squared Test; ³ Univariate logistic regression; ⁴ Multivariable logistic regression; ⁵ Wilcoxon Rank-Sum Test

3.5 Knowledge of prehospital care and self-assessed knowledge rating

Participants who participated in first aid training were asked to assess their knowledge in the categories given, which were 'Excellent', 'Good', 'Fair' or 'Poor'. This analysis was included to determine whether self-perceived knowledge corresponded with actual

knowledge levels, which is important for identifying gaps in training effectiveness and confidence in real-life emergency response situations.

Table 3.5 compares the self-assessed knowledge with their actual knowledge. Participants' self-assessments did not always align with their actual knowledge. Among those who rated their knowledge as 'Excellent,' only 64 percent demonstrated good knowledge, while 36 percent had poor knowledge. All participants who rated themselves as 'Poor' indeed had poor knowledge. Among GRP personnel, 84 percent of those with 'Excellent' self-ratings had good knowledge, compared to 58 percent in the 'Good' and 80 percent in the 'Fair' categories. None rated themselves as 'Poor.'

For SMs, 67 percent of those rating themselves as 'Excellent' had good knowledge. This dropped to 63 percent for 'Good' and 50 percent for 'Fair.' All SMs who rated themselves 'Poor' were correctly assessed with poor knowledge.

Table 3.5: Knowledge of prehospital care and self-assessed knowledge rating

Characteristic	Good, N = 145 ¹	Poor, N = 141 ¹	P-Value ²
Overall			
Excellent	14 (64%)	8 (36%)	0.4 ³
Good	46 (61%)	29 (39%)	
Fair	17 (65%)	9 (35%)	
Poor	0 (0%)	2 (100%)	
GRP			
Excellent	16 (84%)	3 (16%)	0.057
Good	28 (58%)	20 (42%)	
Fair	16 (80%)	4 (20%)	
Poor	0 (0%)	0 (0%)	
SM			
Excellent	2 (67%)	1 (33%)	0.4
Good	17 (63%)	10 (37%)	
Fair	3 (50%)	3 (50%)	
Poor	0 (0%)	2 (100%)	

¹ n (%); ² Fisher's Exact Test ; ³ Pearson's Chi-Squared Test

3.6 Knowledge of prehospital care and self-assessed confidence to perform the skill

This section examines the link between participants' actual knowledge of prehospital care and their self-assessed confidence in performing them. The aim was to assess whether higher knowledge correlates with greater confidence, helping to understand if knowledge translates into practical readiness for emergency situations.

Annexure XI shows a significant difference between self-confidence and correct responses for several skills. Very confident participants performed significantly better (52 percent) than those with moderate confidence (31 percent) ($p = 0.003$) while answering CPR question. Surprisingly, even those with least confidence had a 52 percent correct response rate. Most participants struggled to identify when CPR should be administered, regardless of confidence ($p = 0.7$). Very confident participants had significantly better knowledge about AED (43 percent) than least confident participants (25 percent) ($p = 0.029$), though overall scores were low. A strong association was found between confidence and knowledge ($p < 0.001$) regarding bleeding control. For recovery position, both reasoning and method were significantly better among those with better confidence (41 percent and 28 percent correct, respectively; $p < 0.001$ and $p = 0.002$). However, nearly all participants struggled with identifying the correct situation to use it (>97 percent incorrect).

No significant differences were found in spinal support, airway clearance, or fracture management across confidence levels, though overall fracture care knowledge was high.

3.7 Barriers and facilitators in providing prehospital care

Next, we assessed the barriers and facilitators of providing prehospital care to the victims of accidents at railway stations.

All SMs were aware of the medical box and its location. Approximately 87.5 percent were familiar with its contents, while 12.5 percent were partially familiar. Nearly all found the medical box accessible, although 2.5 percent reported it as partially available. The majority also knew the person in charge of the medical box.

Among GRP personnel, the majority were aware of the medical box and its location. However, only 77.2 percent were familiar with its contents, and just 54 percent found it accessible as shown in Table 3.7.1

Table 3.7.1: Medical box (first-aid box) awareness among participants

Characteristic	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
Awareness of medical box availability			
Yes	232 (94.3%)	40 (100%)	0.4
No	12 (4.9%)	0 (0%)	
Unsure	2 (0.8%)	0 (0%)	
Location of the medical box			
Station office	238 (96.8%)	37 (92.5%)	0.3
On the platform	6 (2.4%)	3 (7.5%)	
Unsure	2 (0.8%)	0 (0%)	
Familiarity with the contents of the medical box			
Yes	190 (77.2%)	35 (87.5%)	0.11
No	22 (8.9%)	0 (0%)	
Partially	34 (13.9%)	5 (12.5%)	
Accessibility of medical box			
Yes	133 (54%)	39 (97.5%)	<0.001
No	22 (9%)	0 (0%)	
Partially	91 (37%)	1 (2.5%)	
Awareness about the person responsible for maintaining medical box			
Yes	149 (61%)	34 (85%)	<0.001
No	25 (10%)	5 (12.5%)	
Unsure	72 (29%)	1 (2.5%)	

¹ n (%); ² Fisher's Exact Test

'Perceived' barriers and facilitators were analysed, and the results are presented in Table 3.7.2, which shows notable differences between GRP and SM participants. SMs were less

anxious, with 52.5 percent reporting being ‘Not Anxious’ as compared to 30 percent of GRP ($p = 0.018$). Commuter cooperation was rated lower by SMs (30 percent ‘Not Cooperative’) compared to GRP (13 percent) ($p = 0.02$). More SMs reported attending many emergencies in the past year (55 percent as compared to 40.2 percent among GRP; $p = 0.0123$), though this was self-reported. Confidence to handle future emergencies was higher among GRP, with no one reporting low confidence, while 5.7 percent of SMs did ($p = 0.0233$).

Table 3.7.2: Barrier and facilitators among study participants

Characteristic	GRP, N = 246 ¹	SM, N = 40 ¹	P-Value ²
Anxiety level on attending emergency			
Not anxious	74 (30%)	21 (52.5%)	0.018
Somewhat anxious	110 (45%)	11 (27.5%)	
Very anxious	62 (25%)	8 (20%)	
Effect of time of the day (day or night time)			
Does not affect	73 (30%)	12 (30%)	0.074
Somewhat affects	129 (52%)	15 (37.5%)	
Affects very much	44 (18%)	13 (32.5%)	
Concern about own safety while attending emergency			
Not concerned	53 (22%)	11 (27.5%)	0.2
Sometimes concerned	106 (43%)	11 (27.5%)	
Yes, very concerned	87 (35%)	18 (45%)	
Cooperation of commuters while attending emergency			
Not cooperative	33 (13%)	12 (30%)	0.02
Somewhat cooperative	181 (74%)	22 (55%)	
Very cooperative	32 (13%)	6 (15%)	
Difficulty level of managing bystanders during emergency			
Not difficult	8 (3.3%)	0 (0%)	0.8 ³
Somewhat difficult	105 (42.7%)	18 (45%)	
Very difficult	133 (54%)	22 (55%)	
Number of emergencies attended in the last year			
Yes, a lot	99 (40.2%)	22 (55%)	0.012
Few emergencies	135 (54.9%)	13 (32.5%)	
Not till now	12 (4.9%)	5 (12.5%)	
Based on the emergencies attended in the past year, the level of confidence to attend emergencies in future	N = 234	N = 35	
Not confident	0 (0%)	2 (5.7%)	0.023³
Somewhat confident	118 (50%)	15 (42.9%)	
Very confident	116 (50%)	17 (48.6%)	
No answer	0 (0%)	1 (2.8%)	

¹ n (%); ² Pearson's Chi-Square Test; ³ Fisher's Exact Test

In order to determine whether there are any similarities, differences, or patterns, a subset analysis of the barriers and facilitators was also conducted. SMs and GRP personnel were

taken separately and analysed. For SMs, an attempt was made to see the pattern by using the categories of the stations, and for GRP, the Railway police station to which they belong was used. Each police station was assigned a number between one and seven to ensure that their identities were anonymised. For GRP, anxiety levels during emergencies differed significantly ($p = 0.009$), with Station two having the highest proportion of 'Very Anxious' respondents (32 percent). Time of the day significantly affected emergency response ($p = 0.021$), with Station five reporting the highest impact (33 percent 'Affects Very Much'). Cooperation from commuters also varied ($p = 0.016$), with Station two having the least cooperative commuters (36 percent 'Not Cooperative'). Stations four and six attended the most emergencies (51.5 percent and 60 percent 'A Lot', respectively), while confidence in handling future emergencies was highest at Station six (56 percent 'Very Confident').

For SMs, anxiety levels varied, with SG-3 reporting the highest proportion of 'Very Anxious' respondents (50 percent). Time of day affected emergency response, with SG-3 having the highest impact (50 percent 'Affects Very Much'). Safety concerns were highest in NSG-1 (70 percent 'Very Concerned'), while cooperation from commuters was lowest in SG-2 and SG-3 (40 percent 'Not Cooperative'). Managing bystanders was 'Very Difficult' for most groups. SG-1 attended the most emergencies (100 percent 'A Lot'), while confidence in handling future emergencies was highest in NSG-1 (56 percent 'Very Confident') and SG-1 (70 percent 'Very Confident').

The most important 'perceived' barrier to providing prehospital care was the lack of transportation ($n = 195$), which was followed by the distance between the accident site and the railway station ($n = 146$) and the accident's location, including whether it happened in a remote or difficult-to-reach area ($n = 125$). In comparison, nighttime and weather conditions

were perceived as a relatively lesser barrier ($n = 122$ and $n = 103$, respectively). These findings suggest that while environmental conditions like time of day do play a role, logistical issues, particularly transport availability and access, are the primary challenges in timely prehospital intervention.

Figure nine compares the perceived barriers to prehospital care reported by GRP and SM.

For GRP personnel, lack of transport was the most cited barrier, with nearly 70 percent reporting it as a significant challenge. This was followed by distance from the station (48 percent) and location of the incident (42 percent). Nighttime conditions were also noted (41 percent), while weather conditions (33 percent) and other factors (3 percent) were seen as less impactful.

In contrast, SM participants most frequently identified distance from the station (70 percent) as the primary challenge, followed by lack of transport (57.5 percent) and location (55 percent). Interestingly, weather conditions and nighttime (52.5 percent both) were perceived as more of a barrier by SMs than by GRP. Other barriers were more commonly reported by SMs (17.5 percent) than by GRP.

Overall, both groups acknowledged lack of transport and incident location as key barriers. However, GRP personnel faced greater issues with transport availability, while SMs were more challenged by the distance between the station and the accident site.

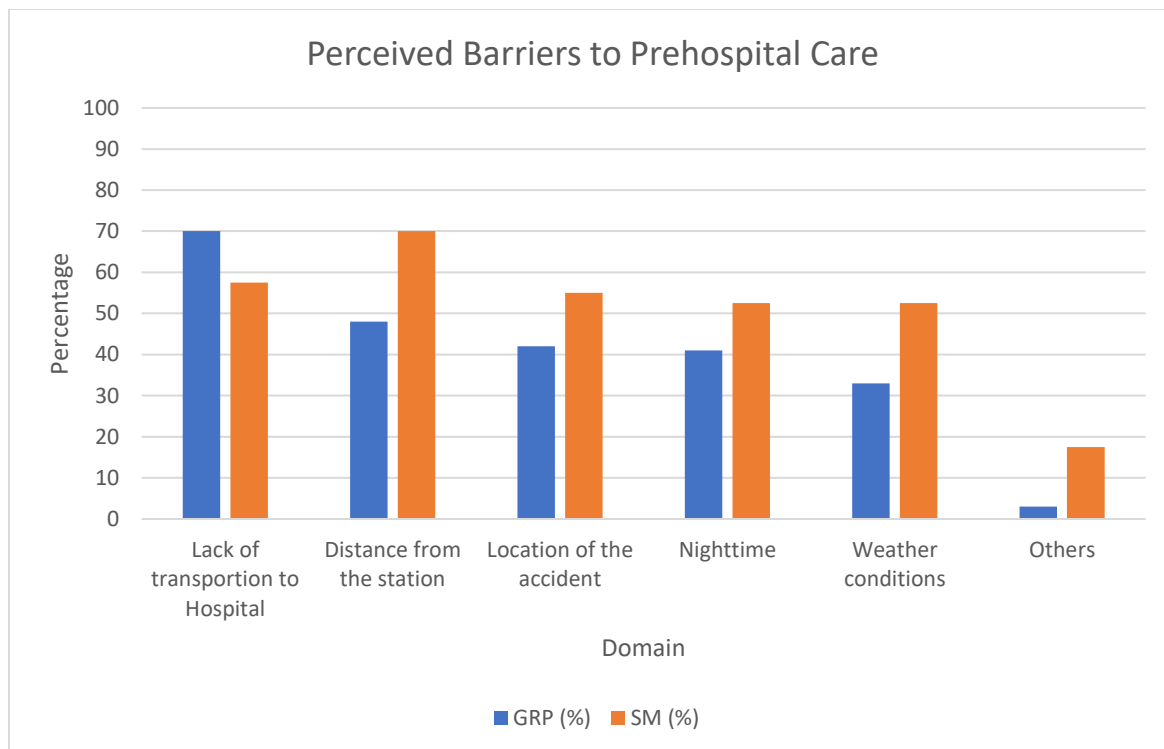


Figure 9: A graphical representation of the perceived barriers among both GRP and SM

As shown in Figure 10, CPR was the most requested training ($n = 211$), followed by AED use ($n = 137$). Airway management, bleeding control, and safe lifting were each selected by 128 participants. Neck stabilisation, checking for consciousness, and the recovery position were followed at $n = 119$ and $n = 117$, respectively, with BLS ($n = 111$), choking ($n = 104$), and fracture management ($n = 100$) also noted.

All domains received over 100 responses, indicating broad training needs across multiple emergency care skills.

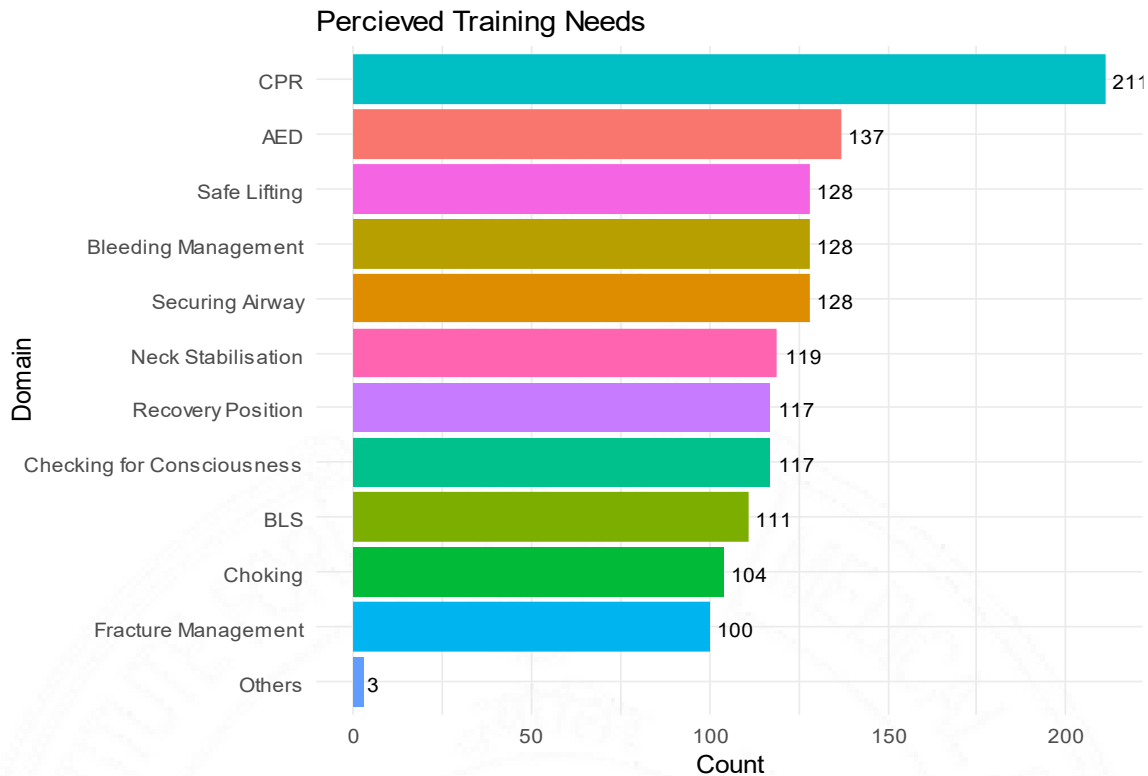


Figure 10: Perceived training needs among participants

Figure 11 presents a comparison of training needs between GRP personnel and SMs. CPR was the most prioritised skill for both groups—75.6 percent of GRP and 62.5 percent of SMs identified it as essential. AED training was also highly cited, especially by SMs (62.5 percent). While GRP personnel largely focused on core interventions like CPR, they showed moderate interest in safe lifting (45.1 percent), neck stabilisation, and airway management (44 percent), with less emphasis on fracture management (33.3 percent), checking for consciousness (42 percent), and recovery position (37 percent).

In contrast, SMs displayed a broader range of training needs. Beyond CPR and AED, they emphasised neck stabilisation (57.5 percent), airway management, BLS (50 percent), and bleeding control (47.5 percent). Skills like fracture management (45 percent) and scene safety (65 percent) also featured more prominently for SMs than GRP.

This divergence suggests that GRP may benefit from expanded training in lesser-emphasised areas, while SMs could reinforce practical execution through scenario-based drills.

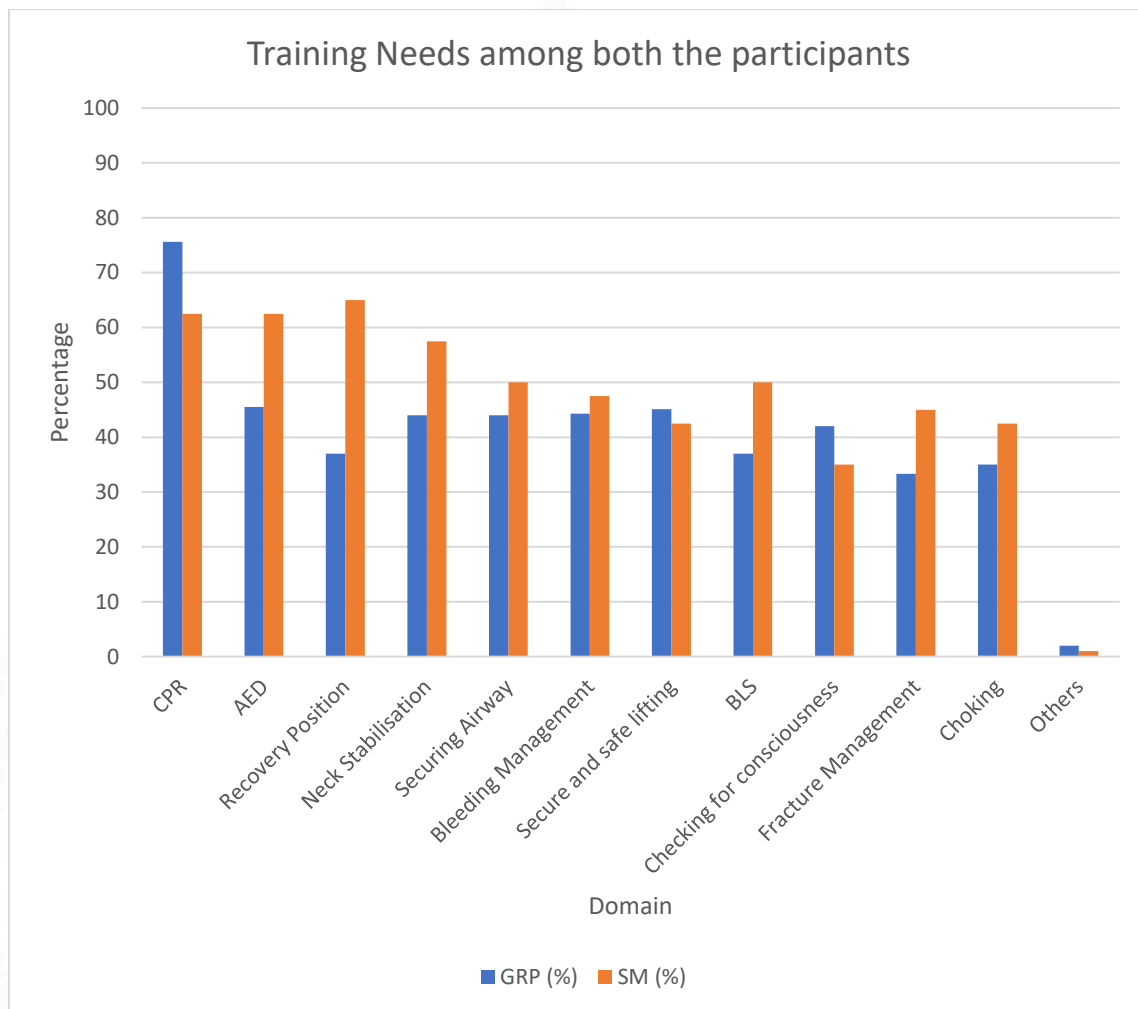


Figure 11: Perceived training needs among GRP and SM

3.8 Prehospital care facilities available in stations

In total, 25 stations were visited where the preparedness was checked using an observational checklist made by the PI. The distribution of the stations visited for the assessment of preparedness is given in Table 3.8.1.

Table 3.8.1: Category wise number of stations selected for observation

Category of stations	NSG - 1	SG - 1	SG - 2	SG - 3
Total number of stations	4	8	17	22
Stations selected for the study	2	4	8	11

The checklist for assessing preparedness included 12 main facilities identified through literature review, focusing on accident-specific prehospital care emergency facilities. Most facilities, such as communication devices, incident reporting systems, cleanliness of first aid areas, staff deployment, and the presence of lady personnel, were generally available and in good working condition across all stations and were not included in Table 3.8.2. This table only highlights facilities that are unevenly distributed or lacking in some stations. Key findings reveal that while medical boxes and stretchers were available at all stations, their numbers varied. Critical resources like AEDs were only available at six stations, ambulances were parked outside just four stations, and emergency medical rooms were in only two stations. These results indicate that while some essential facilities are widely available, critical resources are limited and unevenly distributed, highlighting areas where improvements are needed to ensure better preparedness for prehospital care across all stations.

Table 3.8.2: Facilities available in the stations

Characteristic	Overall, N = 25 ¹	NSG 1, N = 2 ¹	SG 1, N = 4 ¹	SG 2, N = 8 ¹	SG 3, N = 11 ¹
Number Of Medical Boxes Available					
One	22 (88%)	1 (50%)	3 (75%)	7 (87.5%)	11 (100%)
Two	3 (12%)	1 (50%)	1 (25%)	1 (12.5%)	0 (0%)
Number Of AEDs Available					
None	19 (76%)	0 (0%)	2 (50%)	7 (87.5%)	10 (90.9%)
One	6 (24%)	2 (100%)	2 (50%)	1 (12.5%)	1 (9.1%)
Number Of Stretchers Available					
One	3 (12%)	0 (0%)	0 (0%)	1 (12.5%)	2 (18.2%)
Two	13 (52%)	0 (0%)	3 (75%)	5 (62.5%)	5 (45.4%)
Three	4 (16%)	1 (50%)	0 (0%)	1 (12.5%)	2 (18.2%)
Four	4 (16%)	0 (0%)	1 (25%)	1 (12.5%)	2 (18.2%)
Five	1 (4.0%)	1 (50%)	0 (0%)	0 (0%)	0 (0%)
Number Of Ambulances Available					
None	21 (84%)	1 (50%)	2 (50%)	8 (100%)	10 (90.9%)
One	4 (16%)	1 (50%)	2 (50%)	0 (0%)	1 (9.1%)
Availability Of Emergency Medical Room					
None	23 (92%)	1 (50%)	3 (75%)	8 (100%)	11 (100%)
Yes	2 (8.0%)	1 (50%)	1 (25%)	0 (0%)	0 (0%)

¹ n (%)

CHAPTER FOUR – DISCUSSION AND CONCLUSION

The present study aimed to assess primary responders' knowledge, skill confidence, and perceived barriers, including SMs and GRP personnel, and resource availability in providing prehospital care at railway stations. The key findings are discussed below.

4.1 Discussion

Prehospital care preparedness in Mumbai's central suburban railway line was assessed through three core objectives: structural, personnel, and commuter-related factors that influence prehospital care. These aspects, which collectively reflect the system's readiness, are discussed below.

4.1.1 Demographic and training profiles

Most non-responders were male SMs over 50 showed reluctance toward external evaluation and fear of results being reported to higher authorities. This suggests mistrust of performance scrutiny, particularly among older employees who fear administrative consequences.

The only young SM who declined stated time constraint, pointing to workload challenges that may limit engagement despite greater openness.

The demographic and training characteristics of SMs and GRP personnel revealed notable differences that may influence their preparedness for prehospital care.

SMs had a significantly higher median age (49 years) than GRP personnel (34 years), similar to trends observed in Nigerian police personnel who were mostly aged 30–39 (Ogunyemi et al., 2023). This age gap may be due to differing recruitment processes and job roles where SMs often have longer tenures and higher ranks, while GRP personnel are generally younger. Greater work experience among SMs may enhance their confidence and ability to manage emergencies, especially in smaller stations with limited resources.

Sex disparity was apparent, with females comprising only 7.5 percent of SMs (Nair, 2015, The Economics Times, 2025) and 31 percent of GRPs. Similar trends have been seen in studies from Nigeria and Greece, where males made up 62.1 percent and 83.5 percent of police staff, respectively (Ogunyemi et al., 2023; Tzenetidis et al., 2023). Surprisingly, 98.5 percent of the participants in a study done in Hubballi, Dharwad, among traffic police, were males (Bant, 2020). Low female representation may stem from lack of infrastructure and support, work-life balance, workplace discrimination and limited leadership roles, which affect the retention (Hairiya & Singh, 2025).

Educational qualifications also varied among the responders. SMs typically held graduate or postgraduate degrees, as required for their job, while GRP personnel had a broader range of education levels. Higher educational attainment, especially among SMs, may contribute to a better understanding and application of emergency training (Ogunyemi et al., 2023).

Most participants had one to five years of experience at their current stations due to routine transfers every four to six years. Although this may limit familiarity with local resources, it provides broader exposure to varying emergency contexts.

Training exposure showed a stark contrast, with 97.5 percent of SMs having received first aid training, compared to only 36.5 percent of GRP personnel, similar to Nigerian (37.7 percent) and Greek (39 percent) findings among police personnel (Ogunyemi et al., 2023; Tzenetidis et al., 2023). On the other hand, about 58 percent of the traffic police had ever received training in first aid in a study conducted in Hubballi, Dharwad (Bant, 2020). For SMs, this is due to compulsory refresher courses every three years. This disparity in training highlights how SMs are often positioned as the default prehospital care providers at railway stations. However, GRP personnel, despite having equally critical roles in prehospital care,

particularly in securing accident sites, are not equally equipped through formal first aid training, indicating a potential gap in preparedness that needs to be addressed.

While GRP personnel may have practical confidence, the lack of theoretical knowledge could lead to inconsistent responses during emergencies. Standardised training, especially for GRP, is essential to improve prehospital care on the railway network.

4.1.2 Prehospital care training and skill proficiency

SMs generally received longer, structured training sessions, often half-day modules, while most GRP personnel attended only brief sessions. This difference likely influenced the observed gap in knowledge levels, with SMs reporting higher self-assessed competence.

While GRP personnel expressed confidence in managing emergencies, their actual knowledge, particularly in areas like CPR, airway management, and AED use, was limited.

AED awareness and proficiency were notably low in both groups. However, SMs displayed stronger procedural understanding in critical tasks such as safe victim handling, recovery positioning, and bleeding control, possibly due to their formal training and higher education levels.

These findings highlight a clear gap between confidence and actual preparedness, especially among GRPs, reinforcing the need for consistent training to ensure effective emergency response across the railway network (Wagner, 2025).

4.1.3 Assessment of prehospital care knowledge

While a full evaluation of prehospital care knowledge could not be performed due to the absence of standardised benchmarks or official guidelines for GRP personnel and SMs, a comparative evaluation was carried out. Most existing literature focuses on police personnel in general, leaving a gap in research specific to GRP and SMs. In this study, questions were

prepared assuming baseline training among both GRP and SMs due to departmental requirements.

The findings suggest a clear disparity in theoretical knowledge between SMs and GRP personnel, likely due to more structured and recurrent training for SMs. However, the presence of confidence among GRP personnel, despite limited formal training, points to the value of field experience. Nonetheless, critical knowledge gaps persist in both groups, particularly in essential life-saving procedures. The widespread unawareness of recovery position across both groups highlights a gap in current training programs. These results emphasise the importance of incorporating targeted, skill-based refreshers that address practical knowledge deficits and improve emergency preparedness across all roles.

4.1.4 Knowledge levels and associated factors

Sex differences in knowledge were noted, with males performing better, contrasting findings from Ogunyemi et al. (2023) in Nigeria, where sex was not associated with knowledge. In this study, sex and training exposure appeared collinear: female respondents had significantly lower participation in first aid training, which likely contributed to their lower knowledge levels. This suggests disparities in training access may correlate with sex-based differences in prior knowledge. Female police personnel often have lower attendance due to factors such as role-based exclusions, domestic responsibilities, and lack of women-sensitive training environments highlighted in gender and policing studies (Rief et al., 2025).

Importantly, prior training was the strongest predictor of knowledge, underscoring the value of regular education over demographic factors like age, education, or service length, which were not significantly associated. These findings collectively support the need for inclusive, ongoing training programs tailored to ensure equal access and better knowledge retention.

4.1.5 Self-assessment vs. actual competence

A notable difference was observed between self-rated and actual knowledge levels. While many participants who rated themselves as ‘fair’ scored well, suggesting underestimation, others, particularly among GRP personnel, displayed high confidence but underperformed, especially in technical areas like AED. Although these associations were not statistically significant, they align with earlier findings and underscore that confidence is not always a reliable proxy for preparedness.

Procedure-specific trends further revealed that confidence aligned with knowledge in CPR and bleeding control but not in airway management or spinal stabilisation. These inconsistencies highlight the need for regular, practical training and formal assessments.

4.1.6 Systemic barriers and facilitators

This section explores the systemic barriers and facilitators experienced by GRP personnel and SMs in delivering prehospital care during emergencies.

Awareness and access to prehospital care resources

While the high awareness of the first aid (medical) box among SMs and GRPs is encouraging, the limited access reported by GRP personnel, despite their role as primary responders, highlights a critical operational shortfall. Just over half of GRPs had full access, which could significantly delay emergency interventions in the crucial initial minutes of response. This mismatch between awareness and access is problematic, especially in time-sensitive trauma cases, and reflects broader systemic issues. One of the most significant barriers in providing any prehospital care is being aware but not having access to the equipment required to execute it effectively.

A novel but significant observation from this study was the complete absence of ice packs or ice boxes at all observed stations. Given that amputations and crush injuries are common in railway incidents, this absence could critically impact limb salvage and trauma care. Studies from trauma centres have shown that immediate limb cooling is vital for tissue preservation and surgical success (Murrad et al., 2022). Integrating this into the standard railway medical box could be a low-cost, high-impact intervention.

Responsibility for maintaining the medical box was more clearly understood by SMs than GRPs, with the latter often unsure or mentioning external parties like dispensary doctors, pointsman. This ambiguity may delay timely care.

Emotional readiness and safety concerns

Emotional readiness emerged as a differentiating factor between GRPs and SMs. GRP personnel, who are more frontline workers, understandably reported higher levels of anxiety. However, their constant exposure also seemed to build resilience over time, particularly at high-traffic stations like NSG-1, SG-1 category stations, where reported anxiety was lower. This aligns with stress-adaptation seen among firefighters in a study conducted in the USA, which suggests that repeated exposure can increase coping ability but may also lead to desensitisation and irritability if not coupled with psychological support (Jahnke et al., 2016). In contrast, SMs, especially those stationed in smaller or SG-3 category stations, reported higher anxiety and lower confidence. This finding highlights the importance of simulated exposure or scenario-based drills along with regular training, which have been shown to significantly reduce stress and increase readiness in non-clinical first responders (Hedberg et al., 2024; Thapa et al., 2024).

Safety concerns also featured prominently, particularly among SMs. The recent death of an SM during a response likely contributed to these fears, suggesting the need for occupational safety protocols.

Public interaction and crowd management

Crowd control was a major challenge reported by both groups, but SMs found public cooperation more difficult. This may stem from a perceived lack of authority compared to uniformed GRPs. Similar challenges have been documented in transport hubs worldwide, where a lack of crowd control training and visible authority limits responders' effectiveness during high-stress incidents (Chandan and Meakin, 2016). As mentioned by most of the participants, the reason behind is the vast majority of the public hinder the process and instruct them to take the injured to the hospital as soon as possible without even attempting to stabilise the injured, making them more anxious when attending an emergency, this highlights the necessity of public education initiatives, particularly the significance of providing first aid training to an injured.

Role of experience in building confidence

Undoubtedly, experience was associated with greater confidence. Busier stations had more confident GRPs. A study examining risk perception among European firefighters found that greater practical experience was associated with higher perceived training and acute stress reactions, indicating that experience influences both confidence and stress management in emergencies (Prati et al., 2013) However, confidence without comprehensive training may lead to overestimation of competence, highlighted by mismatches between self-assessment and actual knowledge in the earlier subsection of this chapter.

Key operational barriers

Operational challenges varied by role. While SMs stated the distance to the accident site from the station and nighttime as obstacles, given their office-bound responsibilities and because they are unfamiliar with outdoor accident sites, GRP personnel pointed out a lack of transportation as their biggest obstacle, because they perform escort duties, which involve accompanying the injured to the hospital. Both groups also reported issues like misinformation, unclear locations, and poor weather, which further delayed the response. These challenges highlight the need for better coordination and support to improve prehospital care delivery.

Training needs and skill priorities

Participants expressed a strong need for tailored, hands-on training aligned with their field responsibilities. Both GRP personnel and SMs prioritized CPR and AED use, reflecting the life-saving urgency of these interventions in their field settings. The GRP personnel focused more on core trauma responses like CPR, airway management, and bleeding control skills closely tied to their frequent exposure to accident and trauma cases. In contrast, SMs expressed interest in a wider range of skills, including scene safety, neck stabilisation, and fracture management, likely due to their awareness of these skills. Importantly, very few SMs considered their existing training to be fully adequate. This highlights the need for updated, engaging, and scenario-based refreshers, which are proven to improve retention and confidence (Chandan and Meakin, 2016; Gopal et al., 2019; Jayaraman et al., 2009).

4.1.7 Facilities available at railway stations

This section assesses the availability and operational utility of facilities across 25 railway stations in Mumbai. The findings offer insights into infrastructural preparedness, highlight systemic gaps, and suggest directions for improvement.

A comparable study by Ogunyemi et al. (2023) also used an observation-based tool, but contextual differences in geography, participant roles, and the nature of emergencies limit direct comparisons.

General emergency readiness

Observational assessments showed that all stations had basic emergency protocols in place. Emergency contact details for hospitals, police, and blood banks were available, and uniformed staff, including female personnel, were present around the clock. Commuters were seen interacting comfortably with both GRP personnel and SMs, indicating accessibility and public trust in frontline responders.

Medical box and accessibility

All stations had at least one stocked medical box, routinely inspected and replenished every three months by local government or railway dispensaries. NSG-1 and SG-1 stations often had two boxes due to their high demand, while SG-3 stations had only one. While the association between box count and station category was not statistically significant, a general trend emerged linking busier stations with better resources.

Storage and access varied by departmental control. In stations where SMs are unavailable at night (small stations under the commercial department), the medical box was stored in accessible areas like booking offices. The boxes were in the SM's office at stations that were

open around-the-clock (large stations under the operational department). Signage for locating these boxes was generally clear across all locations.

Stretchers and emergency transport

Stretchers were universally available, though their types (collapsible or rigid) and quantities differed. Smaller stations (SG-2, SG-3), typically handling fewer passengers and emergencies, had fewer stretchers, while busier NSG-1 and SG-1 stations had up to five. Collapsible stretchers were more common than rigid (metal) ones. While this allows easier storage, rigid boards may be more appropriate for spinal injury cases. Interestingly, despite availability, personnel often bypassed stretchers in time-sensitive situations such as cardiac arrest, choosing instead to manually carry victims to the nearest vehicle due to the time it takes to retrieve stretchers from the SM's office.

In one instance, a commuter was successfully transported to the hospital using a saree and a wooden log, demonstrating both resourcefulness and significant shortcomings in the system's effectiveness.

Availability and distribution of AEDs

AED availability was a key shortfall. Only six of the 25 stations had AEDs, most donated by NGOs. Their presence was significantly associated with higher station categories ($p = 0.023$). While both NSG-1 stations were equipped, coverage dropped steeply in SG-3 stations, posing a critical challenge, given that every minute of delay in defibrillation reduces survival rates by 10% (Resuscitation Council UK, 2025).

This uneven distribution of AEDs highlights a systemic neglect of life-saving technology in lower-tier but still high-traffic stations. AED availability alone does not necessarily reflect

the preparedness of the station; thus, responders should also receive training on how to use them effectively.

Ambulance access and infrastructure challenges

Standby ambulances were available at only four stations. Many railway stations in Mumbai were built decades ago and lack the infrastructure to support modern emergency access. Narrow, congested entrances, which are often filled with commuters, hawkers, and surrounding buildings, make it difficult for ambulances to enter or park near stations. In some smaller stations, the only access point is an elevated road bridge with no parking space, which complicates the transfer of injured passengers. While elevated routes can provide quicker access, the absence of designated ambulance zones often delays response times. Additionally, the state government's withdrawal of '108' ambulance services from suburban stations, citing underutilization and high operational costs, raises concerns about the availability of emergency services (Mehta, 2016).

Challenges with stretcher hamaals

A major operational gap observed across most stations was the unavailability of stretcher hamaals. Ideally, four personnel are required to transport one injured safely, with a total payment of ₹800 per case (₹200 per person). However, the low compensation and irregular nature of emergencies deter potential workers, especially in smaller stations where footfall is low and long waiting hours are expected. In contrast, NSG-1 stations, which have regular coolie services, faced fewer issues in arranging hamaals, though even there the number of willing workers was limited.

Emergency Medical Rooms (EMRs)

Despite a Bombay High Court directive (PIL/50/2008) mandating EMRs at stations reporting over 100 emergency cases annually, according to 2012 data, implementation remains weak. While 26 Central Railway stations were expected to have EMRs, only 18 were successfully outsourced and were operational till the 2020 Press Information Bureau (PIB) report. However, most of these were later shut down, with private providers stating ‘loss-making’ operations as the main reason for discontinuation.

According to a Right to Information (RTI) filed by the PI, currently, only four EMRs remain functional, and even these suffer from operational limitations. Two were included in this study: one ran only during daytime with nurse-led care, while the other depended on on-call doctors, highlighting gaps in 24/7 readiness.

EMRs are essential for timely medical intervention at railway stations (Siddique, 2019). However, unless systemic barriers, like financial sustainability and enforcement, are addressed, the EMR network will remain inadequate despite strong policy intent.

Need for standardised prehospital care preparedness checklist

The absence of a standardised quality assessment tool makes it difficult to monitor preparedness across station types. A structured checklist aligned with station category (NSG-1 to SG-3) should assess not only the presence of medical boxes but also personnel training, AED availability, EMR functionality, and ambulance accessibility.

4.2 Session engagement and practical impacts

During data collection, several prehospital care awareness sessions were conducted for GRP personnel, focusing on basic emergency response and common injuries. Participants showed interest, provided positive feedback, and expressed a desire for more sessions. This

highlights their willingness to learn and participate in refresher and hands-on courses, suggesting that regular training could significantly enhance their preparedness.

4.3 Recommendations

Based on the findings of this study, several key recommendations are proposed to improve prehospital emergency care preparedness across Mumbai's Suburban Railway stations:

Regular and role-specific training for primary responders

- Regular hands-on training should be provided for GRP personnel, with efforts made to encourage greater female participation. Training should focus on common emergencies such as fainting, cardiac arrest, and trauma, with an emphasis on early symptom recognition. Workshops have been shown to significantly improve confidence in delivering prehospital care. (Thapa et al., 2024; Gopal et al., 2020).
- Refresher courses every 3–6 months are ideal. A study in Uganda showed high knowledge retention with modest use of supplies (Jayaraman et al., 2009), while London's Special Constables preferred 3-month intervals over six (Chandan & Meakin, 2016). Where in-person training isn't feasible, video-based modules or remote medical guidance offer practical alternatives (Hedberg et al., 2024)
- Prehospital care should be included in police training using role plays and case studies to build both knowledge and emotional readiness for emergencies (Mysliva et al., 2021).

Improve accessibility and familiarity with medical box

- Medical Box should be accessible to GRP, with their contents well-known and covered in training.

- Usage of folded cloth to stabilise the spine along with a backboard, can be used where a neck collar is not available (Eisner et al., 2022)
- Ice packs/box should be included in medical boxes at all stations, as preserving severed limbs is critical in reducing disability among amputee victims.

Public awareness and legal protection

- Public announcements and posters should promote CPR and prehospital care, highlighting that anyone can help without legal risk and encouraging bystander intervention in emergencies. This would encourage bystander support and reduce responder hesitation caused by fears of being stopped by commuters who believe only doctors can perform such procedures.

Expand availability and use of AEDs

- AEDs should be made available in all high-footfall and high-risk stations, as recommended in national guidelines (AIIMS Delhi).
- Ensure AEDs are well-maintained and responders are confident in using them, as studies show public AEDs are cost-effective and lifesaving (Shibahashi et al., 2021)

Structural and logistical improvements

- According to Bombay High Court PIL 50/2008, even if expanding the access points is not feasible because of urban limitations, designated ambulance parking places and standby ambulances must be established close to station entrances. In cases of serious injuries, this can save lives and ensures timely transport.

- Stretcher hamaals should be recruited on a fixed salary basis rather than per-case payment. This would ensure availability and reduce delays in transporting injured passengers.

Strengthen Emergency Medical Room (EMR) infrastructure

- The EMRs should operate 24/7, staffed by qualified medical personnel including nurses and doctors as mandated by the Bombay HC order.

Need for standardisation for prehospital care

A standardised preparedness checklist, tailored to station categories, should be implemented to ensure consistent quality checks across the network. This checklist must go beyond the presence of medical boxes and include key elements like trained personnel, emergency transport, and essential infrastructure. Regular audits using this tool would help promptly identify deficiencies and enable timely corrective actions, enhancing overall emergency readiness.

4.4 Strengths and limitations

Strength

This study is one of the first of its kind to assess prehospital care directly at the railway station level rather than relying on data from hospitals based on patients' conditions. This approach provided a more practical understanding of the resources available at stations and how effectively those resources are being used during emergencies.

By identifying both the barriers and facilitators, the study goes beyond just listing what is available. This helps in addressing the root causes, not just in adding resources.

The study also focused specifically on the preparedness and training of GRP and SMs, two key frontline responders. With a sample size of 286 participants, surpassing the proposed 278, and a very low non-response rate of only 2.72%, the findings were both statistically sound and practically relevant.

Furthermore, data collection through cluster sampling across all 51 railway stations ensured that the study was representative of the entire Central Line. The categorical stratification of stations by footfall added further depth, allowing comparisons between different categories and giving a comprehensive picture of emergency preparedness across the network.

Limitations

This study had several limitations. Firstly, the sample size was determined for primary responders collectively, without separate calculations for GRP personnel and SMs, leading to a potential underrepresentation of SMs' perspectives. Secondly, while the study focused on railway accidents, other common health emergencies were not explored in depth. Additionally, the study did not assess the actual contents of the medical boxes, which could have offered insights into their adherence to AIIMS Delhi guidelines. The absence of a validated tool specific to prehospital care knowledge and preparedness in this context could limit comparability with other studies. The lack of standardisation in the facilities available across railway stations, as per Indian Railway categorisation, limited the study's ability to assess deficiencies in prehospital care infrastructure based on station categories. Additionally, the reliance on self-assessment for measuring knowledge and confidence introduces the possibility of over- or underestimating actual abilities. Finally, the study primarily provides quantitative insights, and further qualitative research could help explore the nuanced challenges faced by responders during emergencies.

4.5 Conclusion

This study highlights key barriers and facilitators in prehospital care along Mumbai's central railway. Both SMs and GRP personnel showed strong commitment, often responding creatively despite limited resources. The presence of medical boxes and some training among SMs indicates basic preparedness.

However, challenges persist due to the limited GRP training, poor coordination, and inadequate infrastructure. Effective prehospital care requires more than equipment; it depends on responders' knowledge, proper use, and suitable environments.

Strengthening training, coordination, and infrastructure can greatly improve emergency response and outcomes for railway accident victims.

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ANNEXURE - I

Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

PARTICIPANT INFORMATION SHEET

Hello, my name is Dr. Nair Saranya Raj. I am a student pursuing a Master of Public Health degree at the Achutha Menon Centre for Health Sciences Studies at Sree Chitra Tirunal Institute for Medical Sciences and Technology Thiruvananthapuram, Kerala. I am conducting a survey for my dissertation titled "**Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.**"

You may know that victims of Mumbai Suburban train accidents often wait for a long time before receiving emergency medical attention. Hence, first aid and prehospital care become very crucial in saving lives and limiting disabilities.

Primary responders are essential in providing immediate emergency care, such as first aid, airway protection, and bleeding control. They help train accident victims until professional help arrives, which is crucial in saving lives.

I invite you to participate in this research survey because your experience and knowledge as a primary responder are valuable.

Before you decide to participate, feel free to discuss this survey with anyone you trust. If you find any terms or questions difficult to understand, please ask me for clarification.

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

This survey involves completing a questionnaire that will take about 30 minutes. Your participation is voluntary, and you may choose to participate in the study or not. Your decision will not affect your work or reporting in any way. You can withdraw from the study at any time. Your participation will be anonymous, and no one will identify you. There are no rewards or incentives for participating.

Risk

There are no anticipated risks in this study.

Benefits

There is no immediate direct benefit to you, but your participation will help inform public professionals about the current situation regarding knowledge, practices, and barriers in providing pre-hospital care to Mumbai Suburban train accident victims. This information could lead to future research and improvements in emergency care facilities and first aid training.

Confidentiality

Your information will be kept private and not shared with anyone else. The data collected from this survey will remain confidential.

Contact Information:

For any questions related to the study, you may contact me:

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Guide:

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ANNEXURE - II

Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

INFORMED CONSENT FORM

I have been invited to participate in the study titled “**Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.**” I have read the provided information, or it has been read to me. I had the chance to ask questions, and they were answered to my satisfaction.

- I understand there is minimal risk in participating.
- I understand there is no immediate direct benefit.
- I know I will not receive any incentives for participating.
- I understand my personal information will remain confidential.
- I know that I can withdraw my consent at any time.
- I voluntarily consent to participate in this study.

Participant ID:

Mobile Number:

Signature:

Place:

Date:

Confirmation by Researcher

I confirm that the participant was allowed to ask questions about the study and all questions were answered correctly and to the best of my ability. I confirm that the participant has not been coerced into giving consent and has done so freely and voluntarily.

Signature of the Researcher:

Date:

ANNEXURE - III

Title: - Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

Date-

Category of the Railway Station - _____ Railway Station Number - _____
Participant Unique ID (Station no/SM/GRP/participant no) – _____

Hello! Thank you for participating in this survey.

Please read each question carefully and tick (✓) the answer that best fits your experience. I am just looking to understand your experiences and opinions

Section 1

Demographic Details

I would like to know a bit about you and your job. Please try to answer all the questions.
Your responses will help me understand the background of the participants

Sr. No	Item	Response	Remark
1.	What was your age on your last birthday?		Demographic Details
2.	Sex	☐ 1. Male ☐ 2. Female ☐ 3. Transgender	
3.	What is your highest Education?	☐ 1. 10 th ☐ 2. 12 th ☐ 3. Graduation ☐ 4. Post Graduation	
4.	What is your monthly household Income from all sources?	.....	
5.	What has been the duration of Employment in Current Occupation?	☐ 1. Less than one year ☐ 2. 1-5 years ☐ 3. 6-10 years ☐ 4. More than 10 years	Occupation Details
6.	What is the duration of Service at the Current Railway Station?	☐ 1. Less than one year ☐ 2. 1-5 years ☐ 3. 6-10 years ☐ 4. More than 10 years	
7.	Are you mandated to do night shifts?	☐ 1. Yes ☐ 2. No	

Section 2

Awareness of First Aid

This section will help me understand how familiar you are with first aid practices.

8.	Have you ever attended first-aid training session/s before?	☐ 1. Yes ☐ 2. No	If the answer is No, then please go to question number 9.
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8.1	If yes, where did you attend the training session?	☐ 1. During the training period ☐ 2. In-service or on-job ☐ 3. Others, please specify--	
8.2	When was the last first aid training session attended?	.....	
8.3	How long was the training session?	☐ 1. A few hours ☐ 2. Half-day training session ☐ 3. Full-day training session ☐ 4. Sessions for more than a day ☐ 5. Other, specify.....	
8.4	How would you rate your knowledge of providing first aid?	☐ 1. Excellent ☐ 2. Good ☐ 3. Fair ☐ 4. Poor	

9. On a scale of 1 to 5, 1 being least confident and 5 being most confident, how confident are you in performing the below-mentioned first-aid procedures?

Tick (✓) the number that best represents your confidence level for each procedure.

- CPR (Cardiopulmonary Resuscitation)

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

- Neck and spinal stabilisation.

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

- Securing airway

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

- Treating fractures

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

- Managing uncontrolled bleeding

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

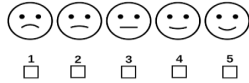
- Providing basic life support

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

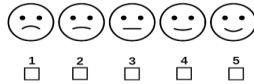
- Using an AED

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

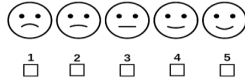
- Safe lifting and moving the victim



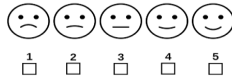
- Help someone who is choking



- Placing a person in recovery position



- Check for consciousness and breathing



Section 3

General First Aid Knowledge

I am interested in what you know about first aid. This section is not a test—just answer as best as you can. Your answers will help me understand the general level of first aid knowledge.

10.	What would you do to check if an unconscious person is breathing?	☐ 1. Look, listen, and feel for breathing for at least 10 seconds. ☐ 2. Shake them and call their name loudly. ☐ 3. Watch their chest for 5 seconds and then check for a pulse. ☐ 4. I Don't Know	Check for breathing*
11.	What is the best way to ensure an unconscious person has a clear and open airway?	☐ 1. Tilt their head back and lift their chin while checking if they are breathing. ☐ 2. Stand them up and tell them to take deep breaths. ☐ 3. Give rescue breaths right away without checking their airway ☐ 4. I Don't Know	Clear and open Airway*
12.	What do you think is the ratio of chest compression to breaths while doing CPR?	☐ 1. 15:2 ☐ 2. 30:2 ☐ 3. 45:3 ☐ 4. I Don't Know	CPR*
13.	While in need of performing CPR, where should you place your hands for compressions?	☐ 1. Place both hands on the upper chest and compress. ☐ 2. Place both hands on the	CPR*

		abdomen and compress. ☐ 3. Place one hand on the chest and use the other hand to support it while compressing ☐ 4. I Don't Know	
14	Are you aware of what does an AED (Automated External Defibrillator) do?	☐ 1. It gives instructions on how to do CPR. ☐ 2. It shocks the heart to try to restart it ☐ 3. It helps you call for emergency help. ☐ 4. I Don't Know	AED*
15.	What would you do to dress a severe bleeding wound?	☐ 1. Pack it tightly with a clean cloth and apply pressure. ☐ 2. Clean it with water and cover it loosely with a bandage. ☐ 3. Use tape to secure a dressing without pressure. ☐ 4. I don't Know	Bleeding control*
16.	Are you aware of the recovery position?	☐ 1. Yes ☐ 2. No	If the answer is No, then please go to question number 17.
16.1	If yes, why do you put someone in the recovery position?	☐ 1. Keep their airway open ☐ 2. Stop bleeding ☐ 3. Protect their spine ☐ 4. I don't Know	Recovery Position*
16.2	How do you put an unconscious but breathing person in the recovery position?	☐ 1. Roll them onto their back and raise their legs ☐ 2. Turn them onto their side, clear their airway, and place the top leg in front. ☐ 3. Leave them on their back and check their breathing. ☐ 4. I don't Know	

17.	How should you move a victim with a suspected spinal injury from a dangerous area?	☐ 1. Gently pull them from under their arms without supporting the head and neck. ☐ 2. Use a rigid surface like a backboard to roll and transport them while keeping the spine and neck stabilized. ☐ 3. Carry them in your arms to avoid further injury. ☐ 4. I don't Know	Spinal Injury*
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Section 4

Specific Railway Accident Scenarios

Think about these situations and choose one answer that best describes what you would do.

18.	What is the most common cause of death according to you in Railway accident victims?	☐ 1. Electric shock ☐ 2. Severe Bleeding ☐ 3. Amputation (Body parts getting cut) ☐ 4. I Don't Know	
19.	What would you do first if someone fell off a train and is on the tracks?	☐ 1. Make the area safe by warning oncoming trains and checking for hazards before getting close. ☐ 2. Call for help and wait before doing anything. ☐ 3. Quickly move the person to safety without checking for injuries. ☐ 4. I don't Know	Safety of the scene*
20.	Scenario: Read the below situations then answer the following questions according to your understanding. During your working hours, you receive a call concerning a person injured in a railway accident.		
20.1	Case 1 - whereby the victim is unconscious, not breathing, and with no pulse. (injuries of the victim are not yet assessed) What are you going to do first?	☐ 1. Give rescue breaths. ☐ 2. Start chest compressions ☐ 3. Ensure the airway is open ☐ 4. I don't Know	CPR*
20.2	Case 2 - whereby the victim has a broken bone in the	☐ 1. Let the victim move the hand to see how much it	Fracture Immobilization*

	hand What are you going to do?	hurts. ☐ 2. Use a splint to support the hand and secure it with bandages. ☐ 3. Put ice directly on the hand and wrap it. ☐ 4. I don't Know	
20.3	Case 3 - whereby, a man has been hit on his chest, is having difficulty breathing suddenly becomes unconscious but still breathing. What are you going to do?	☐ 1. Place in the recovery position ☐ 2. Start chest compression ☐ 3. Rapidly transport the victim to the hospital for immediate assistance ☐ 4. I don't Know	Patent airway*
21.	Case 4 - A passenger's arm gets caught between the wheels of the train, leading to a severe injury and partial amputation.		Amputation*
21.1	What is the first step to take in case of a partial amputation?	☐ 1. Apply direct pressure to the wound to stop the bleeding ☐ 2. Pour water over the wound ☐ 3. Move the person immediately to a hospital ☐ 4. I don't Know	
21.2	What should you do with the severed part (if found)?	☐ 1. Place it in a clean plastic bag and then in ice water ☐ 2. Wash it with soap and water ☐ 3. Keep the severed part in an ice box ☐ 4. I don't Know	
21.3	How should you position the injured person while waiting for help?	☐ 1. Lay them down and keep the injured limb elevated ☐ 2. Sit them up ☐ 3. Keep the hand down without moving it ☐ 4. I don't Know	
21.4	What will you do to help the person stay calm and prevent shock?	☐ 1. Talk to them calmly, keep them warm, and elevate their legs	

		slightly ☐ 2. Let them lie down ☐ 3. Give them something to eat and drink ☐ 4. I don't Know	
22.	Case 5 - A passenger involved in an accident complains of severe abdominal pain, dizziness, and weakness, but there is no visible external injury.		Internal Bleeding*
22.1	What would you do first if you think someone has bleeding inside the body but no visible injuries outside?	☐ 1. Lay the person down and keep them still with their legs up. ☐ 2. Lie the person on their right side. ☐ 3. Press on their stomach to find where the bleeding is ☐ 4. I don't Know	

Section 5

Medical Box/First Aid Box

(As per the 2018 PIB of the Ministry of Railways, First-Aid boxes/Kits were renamed as Medical Box, and the apparatus to be kept in the Box was decided by a group of experts from AIIMS, Delhi)

I would like to know about the availability and knowledge of medical boxes at your station. Please answer the following questions to the best of your ability.

23.	Are medical boxes readily available at your station/area of work?	☐ 1. Yes ☐ 2. No ☐ 3. I am unsure	
24.	Where is the medical box located on the station platform?	☐ 1. In the station office ☐ 2. On the platform, where everyone can access it easily ☐ 3. In the waiting room ☐ 4. I am unsure	
25.	Are you familiar with the contents of the medical box?	☐ 1. Yes ☐ 2. No ☐ 3. Partially	
26.	Do you have access to a medical box that is regularly checked and restocked?	☐ 1. Yes ☐ 2. No ☐ 3. Partially (access to a few equipment and others are accessible only to doctors)	
27.	Is there a designated person responsible for maintaining	☐ 1. Yes ☐ 2. No	

	the medical box at your station?	☐ 3. I am unsure	
27.1	If yes, could you please let me know the designation of that person?	.....	

Section 6

Barriers and Facilitators

I would like to understand the challenges and support you experience during medical emergencies. Your honest answers will help me understand the situation. Please share your thoughts and experiences.

28.	Do you feel anxious when responding to medical emergencies?	☐ 1. Yes, very anxious ☐ 2. Somewhat anxious ☐ 3. Not anxious	Psychological Barriers*
29.	Do you think the time of day (daytime or nighttime) affects the effectiveness of your response during emergencies?	☐ 1. Yes, significantly ☐ 2. Yes, somewhat ☐ 3. No, it doesn't	Physical Challenges*
29.1	Are there any physical barriers (like lighting, weather, location of the accident) that make it hard to help victims?	☐ 1. Night time ☐ 2. Rain ☐ 3. Location of the accident ☐ 4. Distance of the accident ☐ 5. Lack of transportation facilities to reach the site ☐ 6. Others, please specify....	
29.2	Are you concerned about your safety when responding to emergencies?	☐ 1. Yes, often ☐ 2. Sometimes ☐ 3. No	
30.	How cooperative are commuters during emergencies?	☐ 1. Very Co-operative ☐ 2. Somewhat Co-operative ☐ 3. Not Co-operative	Public Awareness and Cooperation*
30.1	How challenging is it to manage bystanders and crowds during an accident in the station?	☐ 1. Very challenging ☐ 2. Somewhat challenging ☐ 3. Not challenging	
31.	Have you had experience handling emergencies in the past year?	☐ 1. Yes, many times, ☐ 2. A few times ☐ 3. Not till now	If the answer is No, then please go to question number 32.
31.1	How confident did you feel while handling those emergencies?	☐ 1. Very confident ☐ 2. Somewhat confident ☐ 3. Not confident	Personal Motivation and Experience*

32	Based on your experiences, what additional training do you think would help improve your emergency response skills? (Select all that apply)	☐ 1. CPR (Cardiopulmonary Resuscitation) ☐ 2. Neck and spinal stabilisation. ☐ 3. Securing airway ☐ 4. Treating fractures ☐ 5. Managing uncontrolled bleeding ☐ 6. Providing basic life support ☐ 7. Using an AED ☐ 8. Safe lifting and moving the victim ☐ 9. Help someone who is choking ☐ 10. Placing a person in recovery position ☐ 11. Check for consciousness and breathing ☐ 12. Other (please specify):	
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*- skill covered in that particular question

Thank you for participating in this survey! Your responses are valuable for my research. If you have any questions or need further assistance, please feel free to ask.

General Information

—

Emergency Facilities and Equipment

- 13 - | P a g e

	• Locations where ambulances are stationed (e.g., near main entrance, parking area) • Clear signage indicating ambulance locations • EMS/MEMS/ALS/BLS		
8.	Communication Devices: • Functionality of public address system • Availability of emergency communication devices (e.g., walkie-talkies, intercoms)		
Staff (GRP/RPF/SM) Availability			
9.	Staff-to-Passenger Ratio: • Adequate number of staff relative to passenger volume (According to the categorisation of the railway station) • Staff availability during peak and off-peak hours i. During Peak Hours (Morning- 8:00 am – 10:00 am Evening- 6:00 pm – 9:00 pm) ii. Non-Peak Hours		
10.	Staff Uniforms and Identification: • Staff wearing identifiable uniforms • Staff carrying identification badges • Visibility of staff for easy identification by passengers		
11.	Passenger Awareness of Emergency Procedures: • Visibility and clarity of emergency contact information for passengers • Locations where emergency information is displayed for passengers • Methods used to educate passengers (e.g., announcements, signage)		
12.	Deployment of Lady Personnel: • Number of Lady personnel stationed at platforms		

	Areas monitored by Lady personnel		
Emergency Response Protocols			
13.	Incident Reporting Procedures: - Availability of incident reporting form - Procedure of Reporting (details to be entered in remark)		
14.	Coordination with Local Emergency Services: - Established protocols for coordination with local hospitals and emergency services (Y/N) - If yes, what is the process? - If no, what is the process? - Accessibility of emergency contact numbers for local services (Display of hospital/ Private ambulance numbers for easy access to SM)		
Cleanliness and Maintenance			
15.	Cleanliness of Emergency Areas: Cleanliness of emergency rooms/rooms where first-aid is provided and first-aid areas		
16.	Waste Disposal: - Availability of proper waste disposal bins - Regular emptying and maintenance of waste bins - Protocols for disposal of medical waste		
Emergency Response Readiness			
17.	Accessibility and Response Time: - Accessibility of ambulance locations for quick deployment - Effectiveness of clear pathways for ambulance movement		
18.	Coordination with Hospitals: - Regular updates on hospital capacities and specializations (Availability of recent data) - Efficient transfer protocols for patients (Y/N)		
Emergency Medical Room (For Stations with functional EMR)			

19.	Location of emergency medical room: • Accessibility and visibility		
20.	Cleanliness and organisation		
21.	Equipment available in medical rooms: Basic medical supplies availability Staffing (trained medical personnel present) (According to the Bombay High Court Judgement on EMR Facilities)		
22.	Operating hours of medical rooms		
23.	Number of on-site medical staff		

ANNEXURE - V

Hindi

Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

मुंबई की सेंट्रल लाइन के उपनगरीय रेलवे स्टेशनों में प्रीहॉस्पिटल केयर तैयारियों का आकलन।

प्रतिभागी सूचना पत्र

नमस्कार, मेरा नाम डॉ. नायर शरण्या राज है। मैं श्री चित्रा तिरुनल इंस्टीट्यूट फॉर मेडिकल साइंसेज एंड टेक्नोलॉजी तिरुवनंतपुरम, केरल में अच्युत मेनन सेंटर फॉर हेल्थ साइंसेज स्टडीज में मास्टर ऑफ पब्लिक हेल्थ (सार्वजनिक स्वास्थ्य) डिग्री के छात्रा हूँ। मैं अपने शोध प्रबंध के लिए एक सर्वेक्षण कर रही हूँ जिसका शीर्षक है “Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.”/“मुंबई के सेंट्रल लाइन के उपनगरीय रेलवे स्टेशनों में प्रीहॉस्पिटल केयर तैयारियों का आकलन”।

आप जानते होंगे कि मुंबई उपनगरीय ट्रेन दुर्घटनाओं के शिकार अक्सर आपातकालीन चिकित्सा प्राप्त करने से पहले लंबे समय तक इंतजार करते हैं। इसलिए, जीवन बचाने और विकलांगता को सीमित करने में प्राथमिक चिकित्सा और पूर्व-अस्पताल देखभाल बहुत महत्वपूर्ण हो जाती है। प्राथमिक उत्तरदाता तत्काल आपातकालीन देखभाल प्रदान करने में आवश्यक हैं, जैसे प्राथमिक चिकित्सा, वायुमार्ग सुरक्षा और रक्तस्राव नियंत्रण। वे पेशेवर मदद आने तक दुर्घटना पीड़ितों को मदद करते हैं, जो जीवन बचाने में महत्वपूर्ण है।

मैं आपको इस शोध सर्वेक्षण में भाग लेने के लिए आमंत्रित करती हूँ क्योंकि प्राथमिक उत्तरदाता के रूप में आपका अनुभव और ज्ञान मूल्यवान है।

इससे पहले कि आप भाग लेने का निर्णय लें, बेझिझक इस सर्वेक्षण पर किसी ऐसे व्यक्ति के साथ चर्चा करें जिस पर आप भरोसा करते हैं। यदि आपको कोई नियम या प्रश्न समझने में मुश्किल लगता है, तो कृपया मुझसे स्पष्टीकरण मांगें।

यदि आपके पास बाद में प्रश्न हो, तो आप मुझसे या संस्था आचार समिति के सदस्य सचिव से संपर्क कर सकते हैं।

इस सर्वेक्षण में एक प्रश्नावली को पूरा करना शामिल है जिसमें लगभग 20-25 मिनट लगेंगे। आपकी भागीदारी स्वेच्छिक है, और आप अध्ययन में भाग लेना चुन सकते हैं। आपका निर्णय किसी भी तरह से आपके काम या रिपोर्टिंग को प्रभावित नहीं करेगा। आप किसी भी समय अध्ययन से पीछे हट सकते हैं। आपकी भागीदारी गुमनाम होगी, और कोई भी आपकी पहचान नहीं करेगा। भाग लेने के लिए कोई इनाम या लाभ नहीं है।

जोखिम

इस अध्ययन में कोई अनुमानित जोखिम नहीं है।

लाभ

आपके लिए कोई तत्काल प्रत्यक्ष लाभ नहीं है, लेकिन आपकी भागीदारी सार्वजनिक पेशेवरों को मुंबई उपनगरीय ट्रेन दुर्घटना पीड़ितों को पूर्व-अस्पताल देखभाल प्रदान करने में ज्ञान, प्रथाओं और बाधाओं के बारे में वर्तमान स्थिति के बारे में सूचित करने में मदद करेगी। इस जानकारी से भविष्य के अनुसंधान और आपातकालीन देखभाल सुविधाओं और प्राथमिक चिकित्सा प्रशिक्षण में सुधार हो सकता है।

व्यक्तिगत जानकारी की सुरक्षा

आपकी जानकारी को सुरक्षित रखा जाएगा और इसे किसी को भी नहीं बताया जाएगा। इस सर्वेक्षण से जुटाई गई जानकारी गोपनीय रहेगी।

संपर्क जानकारी

अध्ययन से संबंधित किसी भी प्रश्न के लिए, आप मुझसे संपर्क कर सकते हैं:

डॉ. नायर शरण्या राज, फोन: 8652700434, ईमेल: saranyanair@sctimst.ac.in

मार्गदर्शक:

डॉ. श्रीकांत अंबतिपुडी, एसोसिएट प्रोफेसर, अच्युत मेनन सेंटर फॉर हेल्थ साइंस स्टडीज, एससीटीआईएमएसटी

टेलीफोन (कार्यालय): 0471-2524233, ईमेल: asrikant@sctimst.ac.in

वैकल्पिक रूप से, सदस्य सचिव, आईईसी, एससीटीआईएमएसटी से संपर्क किया जा सकता है:

डॉ. श्रीनिवास जी, सदस्य सचिव, आईईसी, एससीटीआईएमएसटी, और वैज्ञानिक - जी, जैव रसायन विभाग, एससीटीआईएमएसटी

ईमेल: iec.mem.sec@sctimst.ac.in, फोन: 0471 2524689

ANNEXURE - VI

Hindi

Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

मुंबई की सेंट्रल लाइन के उपनगरीय रेलवे स्टेशनों में प्रीहॉस्पिटल केयर तैयारियों का आकलन।

सूचित सहमति प्रपत्र

मुझे “Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line”/“मुंबई की सेंट्रल लाइन के उपनगरीय रेलवे स्टेशनों में पूर्व-अस्पताल देखभाल तैयारी का आकलन” शीर्षक वाले अध्ययन में भाग लेने के लिए आमंत्रित किया गया है। मैंने प्रदान की गई जानकारी पढ़ ली है, या यह मुझे पढ़कर सुनाई गई है। मुझे प्रश्न पूछने का अवसर मिला और उनका मेरी संतुष्टि के अनुसार उत्तर दिया गया।

- मैं समझता/समझती हूँ कि भाग लेने में न्यूनतम जोखिम है।
- मैं समझता/समझती हूँ कि कोई तत्काल प्रत्यक्ष लाभ नहीं है।
- मुझे पता है कि मुझे भाग लेने के लिए कोई प्रोत्साहन नहीं मिलेगा।
- मैं समझता/समझती हूँ कि मेरी व्यक्तिगत जानकारी गोपनीय रहेगी।
- मुझे पता है कि मैं किसी भी समय अपनी सहमति वापस ले सकता/सकती हूँ।
- मैं स्वेच्छा से इस अध्ययन में भाग लेने के लिए सहमति देता/देती हूँ।

प्रतिभागी आईडी:

मोबाइल नंबर:

स्थान:

हस्ताक्षर:

दिनांक:

शोधकर्ता द्वारा पुष्टि

मैं पुष्टि करती हूँ कि प्रतिभागी को अध्ययन के बारे में प्रश्न पूछने की अनुमति दी गई थी और सभी प्रश्नों का उत्तर सही ढंग से और मेरी क्षमता के अनुसार दिया गया था। मैं पुष्टि करती हूँ कि प्रतिभागी को सहमति देने के लिए मजबूर नहीं किया गया है और उसने स्वतंत्र रूप से और स्वेच्छा से ऐसा किया है।

शोधकर्ता के हस्ताक्षर:

दिनांक:

ANNEXURE - VII

Hindi

शीर्षक: - मुंबई की सेंट्रल लाइन के उपनगरीय रेलवे स्टेशनों में प्रीहॉस्पिटल केयर तैयारियों का आकलन।

Title: - Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

Date-

Category of the Railway Station - _____ Railway Station Number – _____

Participant Unique ID – _____

नमस्ते! इस सर्वेक्षण में भाग लेने के लिए धन्यवाद।

कृपया प्रत्येक प्रश्न को ध्यान से पढ़ें और उस उत्तर पर टिक (✓) लगाएं जो आपके अनुभव के साथ सबसे अच्छी तरह मेल खाता हो। मैं सिर्फ आपके अनुभवों और राय को समझना चाहती हूँ।

विभाग 1

जनसांख्यिकीय विवरण

मैं आपके बारे में और आपके काम के बारे में थोड़ा जानना चाहूंगी। कृपया सभी प्रश्नों का उत्तर देने की कोशिश करें। आपके उत्तर मुझे प्रतिभागियों की जीवन परिचय को समझने में मदद करेंगे।

क्रमांक	वस्तु	प्रतिक्रिया
1.	आपके पिछले जन्मदिन पर आपकी आयु क्या थी?	.....
2.	लिंग	☐ 1. पुरुष ☐ 2. स्त्री ☐ 3. ट्रांसजेंडर
3.	आपकी उच्चतम शिक्षा क्या है?	☐ 1. दसवीं ☐ 2. 12वीं ☐ 3. ग्रेजुएशन ☐ 4. पोस्ट ग्रेजुएशन
4.	आपकी मासिक घरेलू आय सभी स्रोतों से क्या है?	.....
5.	वर्तमान नौकरी में रोजगार की अवधि क्या रही है?	☐ 1. एक वर्ष से कम ☐ 2. 1-5 साल ☐ 3. 6-10 साल ☐ 4. 10 से अधिक वर्षों
6.	वर्तमान रेलवे स्टेशन पर सेवा की अवधि क्या है	☐ 1. एक वर्ष से कम ☐ 2. 1-5 साल ☐ 3. 6-10 साल ☐ 4. 10 से अधिक वर्षों
7.	क्या आपको नाइट शिफ्ट करना अनिवार्य है?	☐ 1. हाँ ☐ 2. नहीं

विभाग 2

प्राथमिक चिकित्सा के बारे में जागरूकता

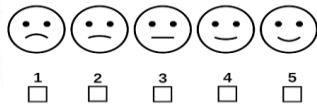
यह अनुभाग मुझे यह समझने में मदद करेगा कि आप प्राथमिक उपचार प्रथाओं से कितने परिचित हैं।

क्रमांक	वस्तु	प्रतिक्रिया
8.	क्या आपने पहले कभी प्राथमिक चिकित्सा प्रशिक्षण सत्र में भाग लिया है?	☐ 1. हाँ ☐ 2. नहीं, तो कृपया प्रश्न संख्या 9 पर जाएँ।
8.1	यदि हाँ, तो आपने प्रशिक्षण सत्र में कहाँ भाग लिया?	☐ 1. प्रशिक्षण अवधि के दौरान ☐ 2. सेवा के दौरान या ऑन-जॉब ☐ 3. अन्य, कृपया विवरण दें
8.2	अंतिम प्राथमिक चिकित्सा प्रशिक्षण सत्र में कब भाग लिया गया था?	.....
8.4	प्रशिक्षण सत्र कितने समय तक चला?	☐ 1. कुछ घंटे ☐ 2. आधे दिन का प्रशिक्षण सत्र ☐ 3. पूरे दिन का प्रशिक्षण सत्र ☐ 4. एक दिन से अधिक समय तक के सत्र ☐ 5. अन्य, कृपया विवरण दें.....
8.3	आप प्राथमिक चिकित्सा प्रदान करने के अपने ज्ञान का मूल्यांकन कैसे करेंगे?	☐ 1. उत्कृष्ट ☐ 2. अच्छा ☐ 3. सामान्य ☐ 4. खराब

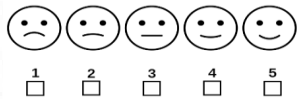
9. 1 से 5 के पैमाने पर, 1 सबसे कम आत्मविश्वास और 5 सबसे अधिक आत्मविश्वासी, आप नीचे दी गई प्राथमिक चिकित्सा प्रक्रियाओं को करने में कितने आश्वस्त हैं?

प्रत्येक प्रक्रिया के लिए अपने आत्मविश्वास स्तर को दर्शाने वाले संख्या पर टिक (✓) लगाएं।

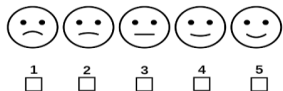
- सीपीआर (कार्डियोपल्मोनरी रिससिटेशन)



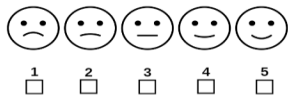
- गर्दन और रीढ़ की हड्डी स्थिरीकरण



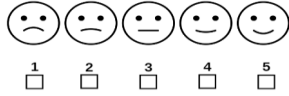
- सुरक्षित वायुमार्ग



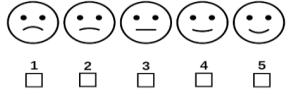
- फ्रैक्चर का इलाज



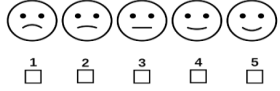
- अनियंत्रित रक्तस्राव का प्रबंधन



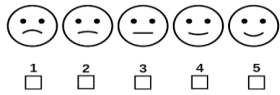
- बुनियादी जीवन समर्थन (Basic Life Support) प्रदान करना



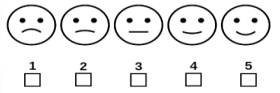
- आईडी(AED) का उपयोग करना



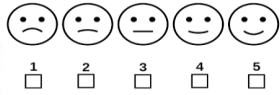
- पीड़ित को सुरक्षित तरीके से उठाना और स्थानांतरित करना



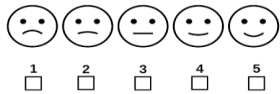
- किसी ऐसे व्यक्ति की मदद करें जो घुट रहा है



- किसी व्यक्ति को पुनर्प्राप्ति स्थिति (रिकवरी पोजीशन) में रखना



- होश और श्वास के लिए जाँच करना



विभाग 3

सामान्य प्राथमिक चिकित्सा ज्ञान

मुझे यह जानने में दिलचस्पी है कि आप प्राथमिक उपचार के बारे में क्या जानते हैं। यह अनुभाग एक परीक्षण नहीं है — बस जैसा आप जानते हैं, वैसा उत्तर दें। आपके उत्तर मुझे प्राथमिक उपचार के सामान्य ज्ञान स्तर को समझने में मदद करेंगे।

क्रमांक	वस्तु	प्रतिक्रिया
10.	आप एक बेहोश व्यक्ति की साँसें जाँचने के लिए क्या करेंगे?	☐ 1. कम से कम 10 सेकंड के लिए सांस लेते देखें, सुनें और महसूस करें। ☐ 2. उन्हें हिलाएं और जोर से उनका नाम लें। ☐ 3. 5 सेकंड के लिए उनकी छाती देखें और फिर एक नाड़ी की जांच करें। ☐ 4. मुझे नहीं पता

11.	एक बेहोश व्यक्ति का वायुमार्ग साफ और खुला रखने का सबसे अच्छा तरीका क्या है?	☐ 1. उनकी गर्दन को पीछे की ओर झुकाएँ और ठोड़ी को उठाएँ जबकि आप यह जाँच रहे हैं कि वे साँस ले रहे हैं। ☐ 2. उन्हें खड़े करें और उन्हें गहरी साँस लेने के लिए कहें। ☐ 3. उनके वायुमार्ग की जाँच किए बिना तुरंत बचाव की साँस दे ☐ 4. मुझे नहीं पता
12.	आपको क्या लगता है कि सीपीआर करते समय छाती के संपीड़न और साँसों का अनुपात क्या है?	☐ 1. 15:2 ☐ 2. 30:2 ☐ 3. 45:3 ☐ 4. मुझे नहीं पता
13.	सीपीआर करने की आवश्यकता होने पर, आपको संपीड़न के लिए अपने हाथों को कहां रखना चाहिए?	☐ 1. दोनों हाथों को ऊपरी छाती पर रखें और संपीड़न दें। ☐ 2. दोनों हाथों को पेट पर रखें और संपीड़न दें। ☐ 3. एक हाथ को छाती पर रखें और दूसरे हाथ का उपयोग करते हुए इसे संपीड़न देते समय सहायता दें ☐ 4. मुझे नहीं पता
14	क्या आप जानते हैं कि एईडी (AED) (ऑटोमेटेड एक्सटर्नल डिफिब्रिलेटर) क्या करता है?	☐ 1. यह सीपीआर करने के तरीके के बारे में निर्देश देता है। ☐ 2. यह दिल को झटका देता है ताकि उसे पुनः प्रारंभ करने की कोशिश की जा सके। ☐ 3. यह आपको आपातकालीन सहायता के लिए कॉल करने में मदद करता है। ☐ 4. मुझे नहीं पता
15.	एक गंभीर रक्तस्राव घाव की पट्टी करने के लिए आप क्या करेंगे?	☐ 1. इसे एक साफ कपड़े से कसकर लपेटें और दबाव डालें। ☐ 2. इसे पानी से साफ करें और इसे ढीले पट्टी से ढक दें। ☐ 3. दबाव के बिना पट्टी को सुरक्षित करने के लिए टेप का उपयोग करें। ☐ 4. मुझे नहीं पता
16.	क्या आप पुनर्प्राप्ति स्थिति (रिकवरी पोजीशन) से अवगत हैं?	☐ 1. हाँ ☐ 2. नहीं, तो कृपया प्रश्न संख्या 17 पर जाएँ।
16.1	यदि हां, तो आप किसी को पुनर्प्राप्ति स्थिति में क्यों रखते हैं?	☐ 1. उनके वायुमार्ग को खुला रखने ☐ 2. रक्तस्राव बंद करने ☐ 3. उनकी रीढ़ की रक्षा करने ☐ 4. मुझे नहीं पता

16.2	आप एक बेहोश लेकिन सांस लेने वाले व्यक्ति को पुनर्प्राप्ति स्थिति में कैसे डालते हैं?	☐ 1. उन्हें पीठ के बल लिटाएं और उनके पैरों को उठाएं। ☐ 2. उन्हें एक तरफ मोड़ें, उनका वायुमार्ग साफ रखें, और ऊपर वाला पैर आगे रखें। ☐ 3. उन्हें उनकी पीठ पर छोड़ दें और उनकी साँसें जाँचें। ☐ 4. मुझे नहीं पता
17.	किसी संदिग्ध रीढ़ की हड्डी की चोट वाले व्यक्ति को खतरनाक स्थान से कैसे हटाना चाहिए?	☐ 1. सिर और गर्दन का समर्थन किए बिना धीरे से उन्हें अपनी बांहों के नीचे से खींचें। ☐ 2. उनकी रीढ़ और गर्दन को स्थिर रखते हुए, उन्हें बैकबोर्ड पर लिटाकर ले जाएं। ☐ 3. उन्हें अपनी बांहों में उठाएं ताकि उन्हें और चोट न लगे। ☐ 4. मुझे नहीं पता

विभाग 4

विशिष्ट रेल दुर्घटना परिदृश्य

इन स्थितियों के बारे में सोचें और वह उत्तर चुनें जो सबसे अच्छा तरीके से यह बताता है कि आप क्या करेंगे।

क्रमांक	वस्तु	प्रतिक्रिया
18.	रेल दुर्घटना पीड़ितों में आपके अनुसार मृत्यु का सबसे आम कारण क्या है?	☐ 1. बिजली का झटका ☐ 2. गंभीर रक्तस्राव ☐ 3. विच्छेदन (शरीर के अंगों का कटना) ☐ 4. मुझे नहीं पता
19.	अगर कोई ट्रेन से गिर जाए और पटरियों पर हो तो आप सबसे पहले क्या करेंगे?	☐ 1. आने वाली ट्रेनों को चेतावनी देकर और करीब आने से पहले खतरों की जांच करके क्षेत्र को सुरक्षित बनाएं। ☐ 2. मदद के लिए कॉल करें और कुछ भी करने से पहले प्रतीक्षा करें। ☐ 3. चोटों की जांच किए बिना व्यक्ति को जल्दी से सुरक्षा में ले जाएं। ☐ 4. मुझे नहीं पता
20.	परिदृश्य: नीचे दी गई स्थितियों को पढ़ें और फिर अपनी समझ के अनुसार निम्नलिखित प्रश्नों के उत्तर दें। आपके काम के घंटों के दौरान, आपको रेल दुर्घटना में घायल हुए व्यक्ति के बारे में एक कॉल प्राप्त होती है।	
20.1	स्थिति 1 - जिससे पीड़ित बेहोश है, सांस नहीं ले रहा है, और बिना नाड़ी के है। (पीड़ित की चोटों का आकलन नहीं किया है) आप पहले क्या करेंगे?	☐ 1. बचाव की सांस दें। ☐ 2. छाती पर संपीड़न शुरू करें ☐ 3. सुनिश्चित करें कि वायुमार्ग खुला और साफ है ☐ 4. मुझे नहीं पता
20.2	स्थिति 2 - जिससे पीड़ित के हाथ में हड्डी टूटी है, आप क्या करने वाले हैं?	☐ 1. पीड़ित को हाथ हिलाने दें ताकि पता चले कि कितनी दर्द हो रही है ☐ 2. हाथ को सहारा देने के लिए एक स्प्लिंट का उपयोग करें और इसे पट्टियों से सुरक्षित करें।

		☐ 3. बर्फ को सीधे हाथ पर लगाकर लपेट दें। ☐ 4. मुझे नहीं पता
20.3	स्थिति 3 - जहाँ एक आदमी के छाती पर चोट लगी है, वह सांस लेने में कठिनाई का अनुभव कर रहा है, अचानक बेहोश हो जाता है लेकिन फिर भी सांस ले रहा है। आप क्या करेंगे?	☐ 1. पुनर्प्राप्ति स्थिति में रखें ☐ 2. छाती संपीड़न शुरू करें ☐ 3. तत्काल सहायता के लिए पीड़ित को तेजी से अस्पताल ले जाएं ☐ 4. मुझे नहीं पता
21.	स्थिति 4 - एक यात्री का हाथ ट्रेन के पहियों के बीच फंस जाता है, जिससे गंभीर चोट लगती है और आंशिक रूप से विच्छेदन होता है।	
21.1	आंशिक विच्छेदन के मामले में पहला कदम क्या है?	☐ 1. रक्तस्राव को रोकने के लिए घाव पर सीधा दबाव लागू करें ☐ 2. घाव पर पानी डालें ☐ 3. व्यक्ति को तुरंत अस्पताल ले जाएं ☐ 4. मुझे नहीं पता
21.2	कटे हुए हिस्से (यदि पाया जाता है) के साथ आपको क्या करना चाहिए?	☐ 1. इसे एक साफ प्लास्टिक बैग में रखें और फिर बर्फ के पानी में रखें ☐ 2. इसे साबुन और पानी से धो लें ☐ 3. कटे हुए हिस्से को बर्फ का डिब्बा में रखें ☐ 4. मुझे नहीं पता
21.3	मदद की प्रतीक्षा करते समय आपको घायल व्यक्ति को कैसे स्थिति में रखना चाहिए?	☐ 1. उन्हें लिटाएं और घायल अंग को ऊंचा रखें ☐ 2. उन्हें बैठाओ ☐ 3. हाथ को बिना हिलाए नीचे रखें ☐ 4. मुझे नहीं पता
21.4	व्यक्ति को शांत रहने और सदमे को रोकने में मदद करने के लिए आप क्या करेंगे?	☐ 1. उनसे शांति से बात करें, उन्हें गर्म रखें और उनके पैरों को थोड़ा ऊपर उठाएं ☐ 2. उन्हें लेटने दें ☐ 3. उन्हें कुछ खाने और पीने को दें ☐ 4. मुझे नहीं पता
22.	स्थिति 5 - एक यात्री जो दुर्घटना में शामिल हुआ है गंभीर पेट दर्द, चक्कर आना और कमजोरी की शिकायत करता है, लेकिन कोई बाहरी चोट दिखाई नहीं देती है।	
22.1	अगर आपको लगता है कि किसी के शरीर के अंदर रक्तस्राव है लेकिन बाहर कोई चोट नहीं है तो आप पहले क्या करेंगे?	☐ 1. व्यक्ति को लेटा दें और उनके पैरों को ऊपर रखकर स्थिर रखें। ☐ 2. व्यक्ति को उनकी दाहिनी ओर लिटाएं। ☐ 3. रक्तस्राव कहाँ है, यह पता लगाने के लिए उनके पेट पर दबाएं ☐ 4. मुझे नहीं पता

विभाग 5

मेडिकल बॉक्स/प्राथमिक चिकित्सा बॉक्स

मैं आपके स्टेशन पर मेडिकल बॉक्स की उपलब्धता और ज्ञान के बारे में जानना चाहती हूँ। कृपया निम्नलिखित प्रश्नों का उत्तर अपनी सबसे अच्छी क्षमता के अनुसार दें।

क्रमांक	वस्तु	प्रतिक्रिया
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23.	क्या आपके स्टेशन/कार्यक्षेत्र में मेडिकल बॉक्स आसानी से उपलब्ध हैं?	☐ 1. हाँ ☐ 2. नहीं ☐ 3. मुझे नहीं पता
24.	स्टेशन प्लेटफॉर्म पर मेडिकल बॉक्स कहाँ स्थित है?	☐ 1. स्टेशन कार्यालय में ☐ 2. प्लेटफॉर्म पर, जहाँ सभी लोग इसे आसानी से प्राप्त कर सकें। प्रतीक्षालय में ☐ 3. मुझे नहीं पता
25.	क्या आप मेडिकल बॉक्स की सामग्री से परिचित हैं?	☐ 1. हाँ ☐ 2. नहीं ☐ 3. अंशतः
26.	क्या आपके पास ऐसे मेडिकल बॉक्स तक पहुंच है जिसकी नियमित रूप से जांच की जाती है और उसे दोबारा भरा जाता है?	☐ 1. हाँ ☐ 2. नहीं ☐ 3. अंशतः (कुछ उपकरणों तक पहुंच और अन्य केवल डॉक्टरों के लिए सुलभ हैं)
27.	क्या आपके स्टेशन पर मेडिकल बॉक्स के रखरखाव के लिए कोई नामित व्यक्ति जिम्मेदार है?	☐ 1. हाँ ☐ 2. नहीं ☐ 3. मुझे नहीं पता
27.1	यदि हां, तो क्या आप कृपया मुझे उस व्यक्ति का पदनाम बता सकते हैं?	.....

विभाग 6

बाधाएं और सूत्रधार

मैं यह समझना चाहती हूँ कि आपातकालीन स्थितियों के दौरान आपको कौन-कौन सी चुनौतियाँ और समर्थन मिलते हैं। आपके ईमानदार उत्तर मुझे स्थिति को समझने में मदद करेंगे। कृपया अपने विचार और अनुभव साझा करें।

क्रमांक	वस्तु	प्रतिक्रिया
28.	क्या आपको आपातकालीन स्थितियों का जवाब देते समय घबराहट महसूस होती है?	☐ 1. हाँ, मुझे बहुत घबराहट होती है। ☐ 2. मुझे थोड़ी घबराहट होती है। ☐ 3. मुझे घबराहट नहीं होती।
29.	क्या आपको लगता है कि दिन का समय (दिन या रात) आपातकालीन स्थितियों में आपकी प्रतिक्रिया को प्रभावित करता है?	☐ 1. हाँ, महत्वपूर्ण रूप से ☐ 2. हां, कुछ हद तक ☐ 3. नहीं, ऐसा नहीं है
29.1	क्या कोई भौतिक बाधाएं हैं जो पीड़ितों की मदद करना मुश्किल बनाती हैं? (लागू होने वाले सभी का चयन करें)	☐ 1. रात का समय ☐ 2. बारिश ☐ 3. दुर्घटना का स्थान ☐ 4. दुर्घटना की दूरी ☐ 5. स्थल तक पहुँचने के लिए परिवहन सुविधाओं की कमी ☐ 6. अन्य, कृपया विवरण दें.....
29.2	क्या आप आपात स्थिति का जवाब देते समय अपनी सुरक्षा के बारे में चिंतित रहते हैं?	☐ 1. हाँ, अक्सर ☐ 2. कभी कभी ☐ 3. नहीं

30.	आपात स्थिति के दौरान यात्री कितने सहयोगी हैं?	☐ 1. बहुत सहकारी ☐ 2. कुछ हद तक सहकारी ☐ 3. सहकारी नहीं
30.1	स्टेशन में दुर्घटना के दौरान राहगीरों और भीड़ को संभालना कितना चुनौतीपूर्ण है?	☐ 1. बहुत चुनौतीपूर्ण ☐ 2. कुछ हद तक चुनौतीपूर्ण ☐ 3. चुनौतीपूर्ण नहीं
31.	क्या आपको पिछले एक साल में आपात स्थिति से निपटने का अनुभव है?	☐ 1. हाँ, कई बार, ☐ 2. कुछ बार ☐ 3. अभी तक नहीं, तो कृपया प्रश्न संख्या 32 पर जाएँ।
31.1	आपको उन आपात स्थितियों को संभालते समय कितना आत्मविश्वास महसूस हुआ?	☐ 1. बहुत आत्मविश्वासी ☐ 2. थोड़ा आत्मविश्वासी ☐ 3. आत्मविश्वास नहीं
32	आपके अनुभवों के आधार पर, आपको क्या लगता है कि अतिरिक्त प्रशिक्षण आपके आपातकालीन प्रतिक्रिया कौशल को बेहतर बनाने में मदद करेगा? (लागू होने वाले सभी का चयन करें)	☐ 1. सीपीआर (कार्डियोपल्मोनरी रिससिटेशन) ☐ 2. गर्दन और रीढ़ की हड्डी स्थिरीकरण। ☐ 3. सुरक्षित वायुमार्ग ☐ 4. फ्रैक्चर का इलाज ☐ 5. अनियंत्रित रक्तस्राव का प्रबंधन ☐ 6. बुनियादी जीवन समर्थन (Basic Life Support) प्रदान करना ☐ 7. एईडी(AED) का उपयोग करना ☐ 8. पीड़ित को सुरक्षित तरीके से उठाना और स्थानांतरित करना ☐ 9. किसी ऐसे व्यक्ति की मदद करें जो घुट रहा है ☐ 10. किसी व्यक्ति को पुनर्प्राप्ति स्थिति (रिकवरी पोजीशन) में रखना ☐ 11. होश और श्वास के लिए जाँच करना ☐ 12. अन्य (कृपया निर्दिष्ट करें):

इस सर्वेक्षण में भाग लेने के लिए धन्यवाद! आपके उत्तर मेरी शोध के लिए महत्वपूर्ण हैं। यदि आपके कोई प्रश्न हैं या आपको अतिरिक्त सहायता की आवश्यकता हो, तो कृपया बेझिझक पूछें।

ANNEXURE VIII

Marathi

Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

मुंबईच्या मध्य मार्गावरील उपनगरीय रेल्वे स्थानकांवरील प्रीहॉस्पिटल केअर तयारीचे मूल्यांकन करणे.

सहभागी माहिती पत्रक

नमस्कार, माझं नाव डॉ. नाथर शरण्या राज आहे. मी श्री चित्ता तिरुनाल वैद्यकीय विज्ञान आणि तंत्रज्ञान संस्थेच्या आचुता मेनन सेंटर फॉर हेल्थ सायन्स स्टडीजमध्ये सार्वजनिक आरोग्याचे मास्टर डिग्री अभ्यासक्रम करत आहे. मी “Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.”/“मुंबईच्या मध्य रेल्वे मार्गावर प्राथमिक उपचाराच्या तयारीचे मूल्यांकन” या शीर्षकासाठी एक सर्वेक्षण करत आहे.

आपणास माहीत असेल की मुंबई उपनगरातील ट्रेन अपघातांचे बळी अनेक वेळा आपत्कालीन वैद्यकीय मदतीसाठी लांब प्रतीक्षा करतात. त्यामुळे, प्राथमिक उपचार आणि प्री-हॉस्पिटल (रुग्णालयापूर्वीची) काळजी जीवन वाचवण्यासाठी आणि अपंगत्व कमी करण्यासाठी खूप महत्वाची आहे.

प्राथमिक प्रतिसादक तात्काळ आपत्कालीन मदत प्रदान करण्यात महत्वाची भूमिका निभावतात, जसे की प्राथमिक उपचार, वायुमार्ग संरक्षण आणि रक्तस्त्राव नियंत्रण. ते वैद्यकीय मदत येईपर्यंत ट्रेन अपघाताच्या बळींना मदत करतात, जे जीवन वाचवण्यासाठी अत्यंत महत्वाचे आहे.

आपल्या अनुभव आणि ज्ञानामुळे या सर्वेक्षणात भाग घेण्याची मी आपल्याला आमंत्रण देते, कारण प्राथमिक प्रतिसादक म्हणून आपले अनुभव महत्वाचे आहेत.

आपण सहभागी होण्याचा निर्णय घेण्यापूर्वी, या सर्वेक्षणाबद्दल आपल्या विश्वासू व्यक्तीशी चर्चा करण्यास मोकळे आहात. जर कोणतेही शब्द किंवा प्रश्न समजायला कठीण असतील, तर कृपया मला स्पष्टतेसाठी विचारा.

आपल्याला नंतर प्रश्न असल्यास, आपण माझ्याशी किंवा संस्थेच्या नैतिक समितीच्या सदस्य सचिवांशी संपर्क साधू शकता.

या सर्वेक्षणात एक प्रश्नावली पूर्ण करणे समाविष्ट आहे ज्यास सुमारे 20-25 मिनिटे लागतील. आपला सहभाग ऐच्छिक आहे आणि आपण अभ्यासात भाग घेणे किंवा न घेणे निवडू शकता. तुमच्या निर्णयाचा तुमच्या कामावर किंवा रिपोर्टिंगवर कोणताही परिणाम होणार नाही. आपण कधीही अभ्यासातून माघार घेऊ शकता. तुमचा सहभाग गोपनीय राहील आणि कोणीही तुम्हाला ओळखू शकणार नाही. सहभागी होण्यासाठी कोणतेही बक्षीस किंवा प्रोत्साहन नाही.

जोखीम

या अभ्यासात कोणतेही अपेक्षित जोखीम नाहीत.

फायदे

आपल्याला तात्काळ कोणताही थेट फायदा होणार नाही, परंतु आपल्या सहभागामुळे सार्वजनिक व्यावसायिकांना मुंबई उपनगरीय रेल्वे अपघातग्रस्तांना रुग्णालयपूर्व सेवा प्रदान करण्यात ज्ञान, पद्धती आणि अडथळ्यांबद्दल सद्य परिस्थितीची माहिती देण्यास मदत होईल. या माहितीमुळे भविष्यातील संशोधन आणि आपत्कालीन काळजी सुविधा आणि प्रथमोपचार प्रशिक्षणात सुधारणा होऊ शकतात.

गोपनीयता

आपली माहिती खाजगी ठेवली जाईल आणि ती कोणासोबतही साझा केली जाणार नाही. या सर्वेक्षणातून गोळा केलेली माहिती गोपनीय राहणार आहे.

संपर्क माहिती

अभ्यासाशी संबंधित कोणत्याही प्रश्नांसाठी, आपण माझ्याशी संपर्क साधू शकता:

डॉ. नायर शरण्या राज, फोन: 8652700434, ईमेल: saranyanair@sctimst.ac.in

मार्गदर्शक:

श्रीकांत अंबाटीपुडी, असोसिएट प्रोफेसर, अच्युता मेनन सेंटर फॉर हेल्थ सायन्स स्टडीज, एससीटीआयएमएसटी

दूरध्वनी (कार्यालय): 0471-2524233, ईमेल: asrikant@sctimst.ac.in

वैकल्पिकरित्या, सदस्य सचिव, आयईसी, एससीटीआयएमएसटी यांच्याशी संपर्क साधला जाऊ शकतो:

श्रीनिवास जी, सदस्य सचिव, आयईसी, एससीटीआयएमएसटी, आणि शास्त्रज्ञ - जी, बायोकेमिस्ट्री विभाग, एससीटीआयएमएसटी

ईमेल: iec.mem.sec@sctimst.ac.in, फोन: 0471-2524689

ANNEXURE - IX

Marathi

Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

मुंबईच्या मध्य मार्गावरील उपनगरीय रेल्वे स्थानकांवरील प्रीहॉस्पिटल केअर तयारीचे मूल्यांकन करणे.

सूचित संमती फॉर्म

मला "मुंबईच्या मध्य मार्गावरील उपनगरीय रेल्वे स्थानकांमध्ये प्रीहॉस्पिटल केअर प्रिपेअरनेसचे मूल्यांकन"/"Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line." या अभ्यासात सहभागी होण्यासाठी आमंत्रित करण्यात आले आहे. मी दिलेली माहिती वाचली आहे, किंवा वाचून दाखवली आहे. मला प्रश्न विचारण्याची संधी मिळाली आणि त्यांची समाधानकारक उत्तरे मिळाली.

- मला समजले आहे की सहभागी होण्यात कमी जोखीम आहे.
- मला समजले आहे की तात्काळ कोणताही थेट फायदा नाही.
- मला माहित आहे की मला सहभागी होण्यासाठी कोणतेही प्रोत्साहन मिळणार नाही.
- मला समजले आहे की माझी वैयक्तिक माहिती गोपनीय राहील.
- मला माहित आहे की मी कधीही माझी सहमती मागे घेऊ शकतो/शकते.
- मी या अभ्यासात सहभागी होण्यासाठी स्वेच्छेने सहमती देत आहे

सहभागी आयडी:

मोबाईल नंबर :

सही:

संशोधकांनी केलेली पुष्टी

मी पुष्टी करतो की सहभागीला अभ्यासाबद्दल प्रश्न विचारण्याची परवानगी देण्यात आली होती आणि सर्व प्रश्नांची योग्य आणि माझ्या क्षमतेनुसार उत्तरे दिली गेली होती. मी पुष्टी करतो की सहभागीला संमती देण्यास भाग पाडले गेले नाही आणि त्याने ते मोकळेपणाने आणि स्वेच्छेने केले आहे.

संशोधकाची स्वाक्षरी :

तारीख:

ठिकाण:

तारीख:

ANNEXURE - X

Marathi

मुंबईच्या मध्य मार्गावरील उपनगरीय रेल्वे स्थानकांवरील प्रीहॉस्पिटल केअर तयारीचे मूल्यांकन.

Title: - Assessing Prehospital Care Preparedness in Suburban Railway Stations of Mumbai's Central Line.

Date –

Category of the Railway Station - _____ Railway Station Number- _____

Participant Unique ID – _____

नमस्कार! या सर्वेक्षणात सहभागी झाल्याबद्दल धन्यवाद.

कृपया प्रत्येक प्रश्न काळजीपूर्वक वाचा आणि तुमच्या अनुभवाला सर्वात योग्य उत्तरावर टिक (✓) करा. मी फक्त तुमचे अनुभव आणि मते समजून घेण्याचा प्रयत्न करीत आहे.

विभाग १

जनसांख्यिकीय तपशील

माझी इच्छा आहे की मला तुमच्याबद्दल आणि तुमच्या नोकरीबद्दल थोडेसे माहित असावे. कृपया सर्व प्रश्नांची उत्तरे देण्याचा प्रयत्न करा. तुमच्या उत्तरांमुळे मला सहभागींची माहिती समजण्यास मदत होईल।

वरिष्ठ क्र.	वस्तू	उत्तर
1.	तुमच्या शेवटच्या वाढदिवसाला तुमचे वय किती होते	.....
2.	लिंग	☐ 1. पुरुष ☐ 2. स्त्री ☐ 3. ट्रान्सजेंडर
3.	तुमचे सर्वोच्च शिक्षण कोणते आहे?	☐ 1. दहावी ☐ 2. बारावी ☐ 3. ग्रॅज्युएशन ☐ 4. पोस्ट ग्रॅज्युएशन
4.	सर्व स्रोतांमधून तुमचे मासिक कौटुंबिक उत्पन्न किती आहे?	☐ 1. 15,000 पेक्षा कमी ☐ 2. 15,000 – 25,000 ☐ 3. 25,000 – 50,000 ☐ 4. 50,000 पेक्षा जास्त
5.	सध्याच्या नोकरीत काम करण्याचा कालावधी किती आहे?	☐ 1. एक वर्षापेक्षा कमी ☐ 2. १-५ वर्षे ☐ 3. ६-१० वर्षे ☐ 4. १० वर्षांहून अधिक काळ
6.	सध्याच्या रेल्वे स्थानकावरील सेवेचा कालावधी किती आहे	☐ 1. एक वर्षापेक्षा कमी

		☐ 2. १-५ वर्षे ☐ 3. ६-१० वर्षे ☐ 4. १० वर्षांहून अधिक काळ
7.	तुम्हाला रात्रीच्या शिफ्टमध्ये काम करण्यास अनिवार्य आहे का?	☐ 1. हो ☐ 2. नाही

विभाग २

प्रथमोपचाराची (First-Aid) जनजागृती

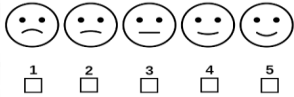
हा विभाग मला प्राथमिक उपचार पद्धतींशी तुम्ही किती परिचित आहात हे समजून घेण्यास मदत करेल।

वरिष्ठ क्र.	वस्तू	उत्तर
8.	आपण यापूर्वी कधी प्रथमोपचार प्रशिक्षण सत्रात भाग घेतला आहे का?	☐ 1. हो ☐ 2. नाही, कृपया प्रश्न क्रमांक 9 वर जा.
8.1	जर होय, तर आपण प्रशिक्षण सत्रात कोठे उपस्थित राहिलात?	☐ 1. प्रशिक्षण कालावधीदरम्यान ☐ 2. इन-सर्व्हिस किंवा ऑन-जॉब ☐ 3. इतर, कृपया स्पष्ट करा----
8.2	शेवटचे प्रथमोपचार प्रशिक्षण सत्र कधी आयोजित केले गेले?	.....
8.3	प्रशिक्षण सत्र किती वेळ चालला होता?	☐ 1. काही तास ☐ 2. अर्ध्या दिवसाचे प्रशिक्षण सत्र ☐ 3. पूर्ण दिवसाचे प्रशिक्षण सत्र ☐ 4. एक दिवसापेक्षा जास्त सत्र ☐ 5. इतर, कृपया स्पष्ट करा.....
8.4	प्रथमोपचार देण्याच्या आपल्या ज्ञानाचे मूल्यमापन कसे कराल?	☐ 1. उत्कृष्ट ☐ 2. चांगला ☐ 3. सामान्य ☐ 4. खराब

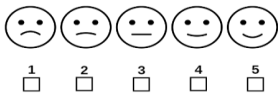
9. १ ते ५ च्या प्रमाणावर, १ म्हणजे सर्वात कमी आत्मविश्वास आणि ५ म्हणजे सर्वात जास्त आत्मविश्वास, खालीलप्रमाणे प्राथमिक उपचार पद्धतींमध्ये तुम्हाला किती आत्मविश्वास आहे?

प्रत्येक प्रक्रियेबद्दल तुमच्या आत्मविश्वासाच्या स्तराचे प्रतिनिधित्व करणाऱ्या क्रमांकावर टिक (✓) करा.

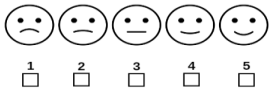
- सीपीआर (कार्डिओपल्मोनरी रिससिटेशन)



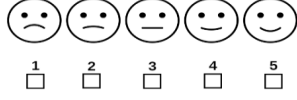
- मान आणि पाठीचा कणा स्थिरीकरण.



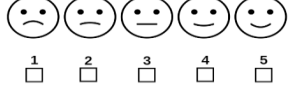
- वायुमार्ग सुरक्षित करणे



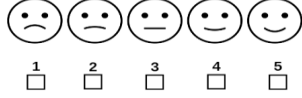
- फ्रॅक्चरवर उपचार करणे



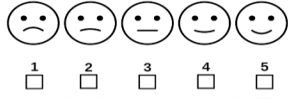
- अनियंत्रित रक्तस्राव नियंत्रित करणे



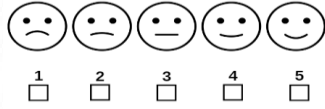
- मूलभूत जीवन समर्थन (Basic Life Support) प्रदान करणे



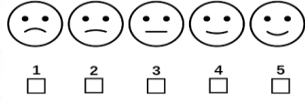
- एईडी(AED) वापरणे



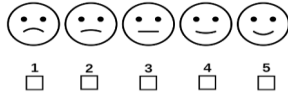
- पीडितेला सुरक्षितपणे उचलणे आणि हलविणे



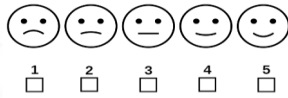
- गुदमरणा या एखाद्यास मदत करा



- एखाद्या व्यक्तीला पुनर्प्राप्ती स्थितीत (रिकव्हरी पोजिशन) ठेवणे



- होश आणि श्वासोच्छ्वास तपासणे



विभाग ३

सामान्य प्रथमोपचार ज्ञान

मला तुमचे प्राथमिक उपचारांबद्दलचे ज्ञान जाणून घ्यायला आवडेल. हा विभाग कोणतीही परीक्षा नाही—फक्त शक्य तितके सर्व प्रश्नांची उत्तरे देण्याचा प्रयत्न करा. तुमची उत्तरे मला प्राथमिक उपचारांबद्दलच्या तुमच्या सामान्य ज्ञानाची पातळी समजून घेण्यास मदत करतील।

वरिष्ठ क्र.	वस्तू	उत्तर
10.	बेशुद्ध व्यक्ती श्वास घेत आहे की नाही हे तपासण्यासाठी आपण काय कराल?	☐ 1. कमीतकमी 10 सेकंद श्वास घेताना पाहणे, ऐकणे आणि अनुभवणे. ☐ 2. त्यांना हलवा आणि मोठ्याने त्यांचे नाव घ्या. ☐ 3. 5 सेकंद त्यांची छाती पहा आणि नंतर नाडी तपासा. ☐ 4. मला माहित नाही

11.	बेशुद्ध व्यक्तीला स्पष्ट आणि मोकळा वायुमार्ग आहे याची खात्री करण्याचा सर्वोत्तम मार्ग कोणता आहे?	☐ 1. ते श्वास घेत आहेत की नाही हे तपासताना त्यांचे डोके मागे झुकवा आणि त्यांची हनुवटी वर करा. ☐ 2. त्यांना उभे करा आणि दीर्घ श्वास घेण्यास सांगा. ☐ 3. त्यांच्या वायुमार्गाची तपासणी न करता ताबडतोब बचाव श्वास द्या ☐ 4. मला माहित नाही
12.	सीपीआर करताना छातीच्या संपीडन आणि श्वासाचे प्रमाण काय आहे असे आपल्याला वाटते?	☐ 1. 15:2 ☐ 2. 30:2 ☐ 3. 45:3
13.	सीपीआर करण्याची आवश्यकता असताना, आपण संपीडनासाठी आपले हात कोठे ठेवावे?	☐ 1. दोन्ही हात छातीवर ठेवा आणि संपीडित करा. ☐ 2. दोन्ही हात पोटावर ठेवा आणि संपीडित करा. ☐ 3. एक हात छातीवर ठेवा आणि दुसरा हात संपीडित करताना त्याला आधार देण्यासाठी वापरा ☐ 4. मला माहित नाही
14	ईडी (ऑटोमेटेड एक्सटर्नल डिफिब्रिलेटर) काय करते हे आपल्याला माहित आहे का?	☐ 1. हे CPR कसे करावे याबद्दल सूचना देते.. ☐ 2. दिलाला धक्का देऊन हृदय पुन्हा सुरू करण्यास मदत करते ☐ 3. हे आपल्याला आपत्कालीन मदतीसाठी कॉल करण्यास मदत करते. ☐ 4. मला माहित नाही
15.	गंभीर रक्तस्राव असलेल्या जखमेवर पट्टी कशी बांधाल?	☐ 1. स्वच्छ कापडाने घट्ट बांधून दाब द्या. ☐ 2. ती पाण्याने स्वच्छ करा आणि पट्टीने हलके बांधून ठेवा ☐ 3. दबाव न लावता पट्टी सुरक्षित करण्यासाठी टेप वापरा. ☐ 4. मला माहित नाही
16.	पुनर्प्राप्ती स्थिती (रिकव्हरी पोजिशन) बदल तुम्हाला माहिती आहे का?	☐ 1. हो ☐ 2. नाही, कृपया प्रश्न क्रमांक 17 वर जा.
16.1	जर होय, तर आपण एखाद्याला पुनर्प्राप्तीच्या स्थितीत का ठेवता?	☐ 1. त्यांचे वायुमार्ग खुला ठेवण्यासाठी ☐ 2. रक्तस्राव थांबवण्यासाठी ☐ 3. त्यांची पाठ सुरक्षित ठेवण्यासाठी ☐ 4. मला माहित नाही
16.2	आपण बेशुद्ध परंतु श्वासोच्छ्वास करणार्या व्यक्तीला पुनर्प्राप्तीच्या स्थितीत कसे ठेवता?	☐ 1. त्यांना पाठीवर फिरवून त्यांचे पाय वर करा ☐ 2. त्यांना त्यांच्या बाजूला वळवा, त्यांचे वायुमार्ग खुला करा आणि वरचा पाय समोर ठेवा. ☐ 3. त्यांना त्यांच्या पाठीवर ठेवा आणि त्यांचा श्वास तपासा. ☐ 4. मला माहित नाही
17.	संशयित पाठदुखापती असलेल्या पीडिताला धोकादायक क्षेत्रातून	☐ 1. त्यांच्या खांद्याखालून सौम्यपणे ओढा, डोके

	कसे हलवावे?	आणि गळा न धरता. ☐ 2. पाठ आणि गळा स्थिर ठेवण्यासाठी बॅकबोर्ड वापरून त्यांना रोल करा आणि हलवा. ☐ 3. अधिक दुखापत होणार नाही यासाठी त्यांना आपल्या हातात उचलून नेवा. ☐ 4. मला माहित नाही.
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विभाग ४

विशिष्ट रेल्वे अपघात परिस्थिती

या परिस्थितीबद्दल विचार करा आणि आपल्याला काय करायचे आहे हे सर्वात योग्यरीत्या वर्णन करणारा उत्तर निवडा.

वरिष्ठ क्र.	वस्तू	उत्तर
18.	रेल्वे अपघातग्रस्तांमध्ये आपल्या मते मृत्यूचे सर्वात सामान्य कारण काय आहे?	☐ 1. विजेचा शॉक ☐ 2. तीव्र रक्तस्राव ☐ 3. विच्छेदन (शरीरचे भागांचा तुकडे होणे) ☐ 4. मला माहित नाही
19.	जर कोणी ट्रेनमधून पडून रुळांवर असेल तर तुम्ही आधी काय कराल?	☐ 1. येणाऱ्या गाड्यांना इशारा देऊन आणि जवळ येण्यापूर्वी तपासून परिसर सुरक्षित करा. ☐ 2. मदतीसाठी कॉल करा आणि काहीही करण्यापूर्वी थांबा. ☐ 3. जखमांची तपासणी न करता त्वरीत त्या व्यक्तीला सुरक्षित स्थळी हलवा. ☐ 4. मला माहित नाही
20.	परिदृश्य : खालील परिस्थिती वाचा मग आपल्या आकलनानुसार खालील प्रश्नांची उत्तरे द्या. आपल्या कामाच्या वेळेत, आपल्याला रेल्वे अपघातात जखमी झालेल्या व्यक्तीबद्दल कॉल येतो.	
20.1	घटना 1 - ज्यामुळे पीडित बेशुद्ध आहे, श्वास घेत नाही आणि नाडी नाही. (पीडितेच्या जखमांचे मूल्यमापन केले नाही) तुम्ही आधी काय करणार आहात?	☐ 1. बचाव श्वास द्या. ☐ 2. छातीचा दाब सुरू करा ☐ 3. वायुमार्ग खुला आहे याची खात्री करा ☐ 4. मला माहित नाही
20.2	घटना 2 - ज्यामुळे पीडितेच्या हाताचे हाड तुटले आहे तुम्ही काय करणार आहोस?	☐ 1. किती दुखतंय हे पाहण्यासाठी पीडितेला हात हलवू द्या. ☐ 2. हाताला आधार देण्यासाठी स्प्लंट वापरा आणि पट्टीने सुरक्षित करा. ☐ 3. थेट हातावर बर्फ ठेवून गुंडाळून घ्या. ☐ 4. मला माहित नाही
20.3	घटना 3 - ज्यामुळे, एका व्यक्तीच्या छातीवर मार लागला आहे, त्याला श्वास घेण्यास त्रास होत आहे, तो अचानक बेशुद्ध होतो परंतु तरीही श्वासोच्छवास करतो आणि नाडीसह. तुम्ही काय करणार आहोस?	☐ 1. पुनर्प्राप्ती स्थितीत स्थान द्या ☐ 2. छातीचा संपीडन सुरू करा ☐ 3. तात्काळ मदतीसाठी पीडितेला तातडीने रुग्णालयात दाखल करा ☐ 4. मला माहित नाही
21.	घटना 4 - प्रवाशाचा हात ट्रेनच्या चाकांमध्ये अडकतो, ज्यामुळे गंभीर दुखापत होते आणि अंशतः विच्छेदन होते.	

21.1	अंशतः विच्छेदन झाल्यास पहिले पाऊल काय आहे?	☐ 1. रक्तस्राव थांबविण्यासाठी जखमेवर थेट दबाव लावा ☐ 2. जखमेवर पाणी घाला ☐ 3. त्या व्यक्तीला ताबडतोब रुग्णालयात घेऊन जा. ☐ 4. मला माहित नाही
21.2	कापलेल्या भागाचे (सापडल्यास) काय करावे?	☐ 1. स्वच्छ प्लास्टिक पिशवीत आणि नंतर बर्फाच्या पाण्यात ठेवा ☐ 2. साबण आणि पाण्याने धुवा ☐ 3. कापलेला भाग बर्फाच्या डब्यात ठेवा ☐ 4. मला माहित नाही
21.3	मदतीची वाट पाहत असताना आपण जखमी व्यक्तीला कसे ठेवले पाहिजे?	☐ 1. त्यांना खाली ठेवा आणि जखमी अवयव उंच ठेवा ☐ 2. त्यांना उठून बसा ☐ 3. हात न हलवता खाली ठेवा ☐ 4. मला माहित नाही
21.4	त्या व्यक्तीला शांत राहण्यास आणि धक्का टाळण्यास मदत करण्यासाठी आपण काय कराल?	☐ 1. त्यांच्याशी शांतपणे बोला, त्यांना उबदार ठेवा आणि त्यांचे पाय थोडे उंच ठेवा ☐ 2. त्यांना झोपू द्या ☐ 3. त्यांना काहीतरी खायला आणि प्यायला द्या ☐ 4. मला माहित नाही
22.	घटना 5 - एखाद्या प्रवाशाला अपघात होतो आणि तो तीव्र पोटदुखी, चक्कर येणे, आणि अशक्तपणाची तक्रार करतो, पण कोणतीही बाह्य जखम दिसत नाही.	
22.1	जर तुम्हाला असं वाटत असेल की कुणाच्या शरीरात आतून रक्तस्राव होतो आहे पण बाहेरील जखमा दिसत नाहीत, तर तुम्ही पहिले काय कराल?	☐ 1. त्या व्यक्तीला खाली ठेवा आणि त्यांचे पाय वर ठेवून स्थिर ठेवा. ☐ 2. त्या व्यक्तीला त्यांच्या उजव्या बाजूला झोपवा. ☐ 3. रक्तस्राव कोठे आहे हे शोधण्यासाठी त्यांच्या पोटावर दाबा ☐ 4. मला माहित नाही

विभाग ५

मेडिकल बॉक्स/प्रथमोपचार पेटी

मी तुमच्या स्थानकावर मेडिकल बॉक्सची उपलब्धता आणि त्याबद्दलचे ज्ञान जाणून घ्यायचं आहे. कृपया खालील प्रश्नांची उत्तरे तुमच्या क्षमतेनुसार द्या.

वरिष्ठ क्र.	वस्तू	उत्तर
23.	आपल्या स्टेशन / कामाच्या ठिकाणी मेडिकल बॉक्स सहज उपलब्ध आहेत का?	☐ 1. हो ☐ 2. नाही ☐ 3. मला खात्री नाही.
24.	स्टेशन प्लॅटफॉर्मवर मेडिकल बॉक्स कोठे आहे?	☐ 1. स्टेशन ऑफिस मध्ये ☐ 2. प्लॅटफॉर्मवर, जिथे प्रत्येकजण सहजपणे प्रवेश करू शकतो ☐ 3. वेटिंग रूममध्ये

		☐ 4. मला खात्री नाही.
25.	आपण मेडिकल बॉक्समधील सामग्रीशी परिचित आहात का?	☐ 1. हो ☐ 2. नाही ☐ 3. अंशतः
26.	आपल्याकडे मेडिकल बॉक्समध्ये उपलब्धता आहे का, जो नियमितपणे तपासला जातो आणि पुनर्साठा केला जातो?"	☐ 1. हो ☐ 2. नाही ☐ 3. अंशतः (काही उपकरणे आणि इतर केवळ डॉक्टरांनाच उपलब्ध आहेत)
27.	आपल्या स्टेशनवर मेडिकल बॉक्सची देखभाल करण्यासाठी कोणी नियुक्त व्यक्ती जबाबदार आहे का?	☐ 1. हो ☐ 2. नाही ☐ 3. मला खात्री नाही.
27.1	जर होय, तर कृपया मला त्या व्यक्तीचे पदनाम सांगाल का?	.....

विभाग ६

अडथळे आणि सुविधा

मी तुमच्याकडून आपातकालीन परिस्थितींमध्ये तुम्हाला आलेली आव्हाने आणि मिळालेली मदत समजून घ्यायचं आहे. तुमच्या प्रामाणिक उत्तरांमुळे मला परिस्थिती समजून घेण्यात मदत होईल. कृपया तुमचे विचार आणि अनुभव सांगा

वरिष्ठ क्र.	वस्तू	उत्तर
28.	तुम्हाला आपातकालीन परिस्थितींमध्ये प्रतिसाद देताना चिंता वाटते का?	☐ 1. होय, खूप चिंताग्रस्त ☐ 2. काहीशी चिंताग्रस्त ☐ 3. चिंताग्रस्त नाही
29.	आपल्याला असे वाटते का की दिवसाची वेळ (दिवसा किंवा रात्री) आपत्कालीन परिस्थितीत आपल्या प्रतिसादाच्या प्रभावीतेवर परिणाम करते?	☐ 1. होय, खूप ☐ 2. होय, काहीप्रमाणात ☐ 3. नाही, तसे नाही
29.1	असे काही भौतिक अडथळे आहेत का ज्यामुळे पीडितांना मदत करणे कठीण होते?	☐ 1. रात्रीचा वेळ ☐ 2. पाऊस ☐ 3. अपघाताचे स्थान ☐ 4. अपघाताचे अंतर ☐ 5. स्थळी पोहोचण्यासाठी वाहतूक सुविधा कमी असणे ☐ 6. इतर, कृपया स्पष्ट करा....
29.2	आपण आपत्कालीन परिस्थितींना प्रतिसाद देताना आपल्या सुरक्षिततेबद्दल चिंतित आहात का?	☐ 1. होय, अनेकवेळा ☐ 2. कधीकधी ☐ 3. नाही
30.	आपत्कालीन परिस्थितींमध्ये प्रवाशांची सहकार्याची पातळी किती आहे?	☐ 1. खूप सहकारी ☐ 2. काही प्रमाणात सहकारी ☐ 3. सहकारी नाही
30.1	स्थानकात अपघाताच्या वेळी प्रेक्षक आणि गर्दीचे व्यवस्थापन करणे किती आव्हानात्मक आहे?	☐ 1. अतिशय आव्हानात्मक ☐ 2. काहीसे आव्हानात्मक ☐ 3. आव्हानात्मक नाही

31.	आपल्याला मागील वर्षात आपत्कालीन परिस्थिती हाताळण्याचा अनुभव आहे का?	☐ 1. होय, अनेक वेळा ☐ 2. काही वेळा ☐ 3. आत्तापर्यंत नाही, तर कृपया प्रश्न क्रमांक 32 वर जा.
31.1	ही आपत्कालीन परिस्थिती हाताळताना तुम्हाला किती आत्मविश्वास वाटला?	☐ 1. खूप आत्मविश्वासी ☐ 2. काहीसा आत्मविश्वास; ☐ 3. आत्मविश्वास नाही
32.	आपल्या अनुभवांच्या आधारे, कोणते अतिरिक्त प्रशिक्षण आपली आपत्कालीन प्रतिसाद कौशल्ये सुधारण्यास मदत करेल असे आपल्याला वाटते? (लागू होणारे सर्व निवडा)	☐ 1. सीपीआर (कार्डिओपल्मोनरी रिससिटेशन) ☐ 2. मान आणि पाठीचा कणा स्थिरीकरण. ☐ 3. वायुमार्ग सुरक्षित करणे ☐ 4. फ्रॅक्चरवर उपचार करणे ☐ 5. अनियंत्रित रक्तस्राव नियंत्रित करणे ☐ 6. मूलभूत जीवन समर्थन (Basic Life Support) प्रदान करणे ☐ 7. एईडी(AED) वापरणे ☐ 8. पीडितेला सुरक्षितपणे उचलणे आणि हलविणे ☐ 9. गुदमरणार् या एखाद्यास मदत करा ☐ 10. एखाद्या व्यक्तीला पुनर्प्राप्ती स्थितीत (रिकव्हरी पोजिशन) ठेवणे ☐ 11. होश आणि श्वासोच्छ्वास तपासणे ☐ 12. इतर (कृपया निर्दिष्ट करा):

या सर्वेक्षणात भाग घेतल्याबद्दल धन्यवाद! तुमची उत्तरे माझ्या संशोधनासाठी महत्त्वाची आहेत. जर तुम्हाला काही प्रश्न असतील किंवा आणखी काही मदतीची आवश्यकता असेल, तर कृपया विचारण्यास संकोच करू नका.

ANNEXURE- XI

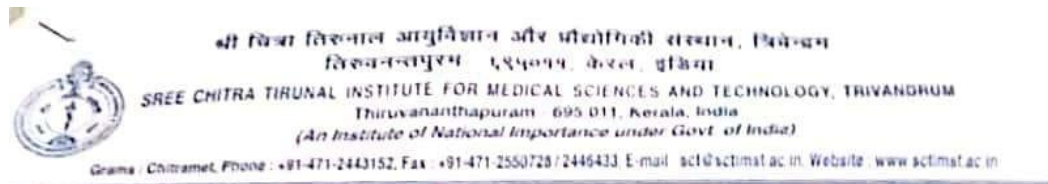
Table 1: Knowledge of a procedure and self-assessed confidence to perform that procedure

CPR confidence	CPR ratio		X ² Value	P-Value ²
	N = 286 ¹			
	Incorrect	Correct		
Very (4 -5)	63 (48%)	68 (52%)	13.971	0.003
Moderate (3)	55 (69%)	25 (31%)		
Least (1 -2)	24 (48%)	26 (52%)		
Missing	19 (76%)	6 (24%)		
CPR confidence	Compression site for CPR			
	N = 286 ¹			
	Incorrect	Correct		
Very (4 -5)	9 (7.0%)	122 (93%)		0.093 ³
Moderate (3)	4 (5.0%)	76 (95%)		
Least (1 -2)	2 (4.0%)	48 (96%)		
Missing	5 (20%)	20 (80%)		
CPR confidence	Situation in which CPR is given			
	N = 286 ¹			
	Incorrect	Correct		
Very (4 -5)	89 (68%)	42 (32%)	1.5723	0.7
Moderate (3)	58 (72%)	22 (28%)		
Least (1 -2)	31 (62%)	19 (38%)		
Missing	17 (68%)	8 (32%)		
Checking for breath and consciousness confidence	Checking for breath and consciousness			
	N = 286 ¹			
	Incorrect	Correct		
Very (4 -5)	124 (76%)	39 (24%)	0.837	0.8
Moderate (3)	43 (77%)	13 (23%)		
Least (1 -2)	19 (70%)	8 (30%)		
Missing	32 (80%)	8 (20%)		
AED Confidence	AED Knowledge			
	N = 286 ¹			
	Incorrect	Correct		
Very (4 -5)	45 (57%)	34 (43%)	8.9924	0.029
Moderate (3)	21 (64%)	12 (36%)		
Least (1 -2)	94 (75%)	31 (25%)		
Missing	37 (76%)	12 (24%)		
Bleeding Control Confidence	Bleeding Control			
	N = 286 ¹			
	Incorrect	Correct		

Very (4 -5)	22 (19%)	92 (81%)	17.819	<0.001
Moderate (3)	22 (33%)	44 (67%)		
Least (1 -2)	30 (48%)	32 (52%)		
Missing	10 (23%)	34 (77%)		
Airway Clearance				
Securing airway confidence	N = 286¹			
	Incorrect	Correct		
Very (4 -5)	44 (38%)	73 (62%)	2.457043	0.5
Moderate (3)	18 (30%)	42 (70%)		
Least (1 -2)	28 (42%)	38 (58%)		
Missing	18 (42%)	25 (58%)		
Recovery Position-Reason				
Recovery position confidence	N = 286¹			
	Incorrect	Correct		
Very (4 -5)	72 (59%)	50 (41%)	23.066	<0.001
Moderate (3)	38 (70%)	16 (30%)		
Least (1 -2)	59 (88%)	8 (12%)		
Missing	37 (86%)	6 (14%)		
Recovery Position-Method				
Recovery position confidence	N = 286¹			
	Incorrect	Correct		
Very (4 -5)	88 (72%)	34 (28%)	15.243	0.002
Moderate (3)	45 (83%)	9 (17%)		
Least (1 -2)	61 (91%)	6 (9.0%)		
Missing	40 (93%)	3 (7.0%)		
Situation for placing a person in recovery position				
Recovery position confidence	N = 286¹			
	Incorrect	Correct		
Very (4 -5)	119 (98%)	3 (2.0%)		>0.9³
Moderate (3)	53 (98%)	1 (2.0%)		
Least (1 -2)	66 (99%)	1 (1.0%)		
Missing	43 (100%)	0 (0%)		
Fracture first aid				
Fracture treatment confidence	N = 286¹			
	Incorrect	Correct		
Very (4 -5)	12 (12%)	91 (88%)	1.1199	0.8
Moderate (3)	7 (14%)	43 (86%)		
Least (1 -2)	14 (15%)	77 (85%)		
Missing	4 (10%)	38 (90%)		

¹ n (%); ² Pearson's Chi-Squared Test ; ³ Fisher's Exact Test

ANNEXURE – XII IEC Approval



Institutional Ethics Committee

CDSCO Registration No: ECR/159/Inst/KL/2013/RR-24
DHR Registration No. EC/NEW/INST/2022/2775

SCT/IEC/2338/DECEMBER/2024

15.01.2025

Dr. Nair Saranya Raj
MPH Student, AMCHSS
SCTIMST, Thiruvananthapuram

Dear Dr. Nair Saranya Raj,

The Institutional Ethics Committee held on 30th December, 2024, reviewed and discussed your application to conduct the study titled "ASSESSING PREHOSPITAL CARE PREPAREDNESS IN SUBURBAN RAILWAY STATIONS OF MUMBAI'S CENTRAL LINE" (IEC /2338) .

Principal Investigator	Dr. Nair Saranya Raj, MPH Student, AMCHSS, SCTIMST
Co-Principal Investigator(s)	Dr. Srikanth A. Associate Professor, AMCHSS, SCTIMST
Duration of the study	6 months

The following members of the Ethics Committee were present at the meeting held on 30th December, 2024

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Dr. Manoj Murhekar	MD (Preventive & Social Medicine)	Male	Social Scientist	No
2	Dr. Annapurna Y	MD	Female	Basic Medical Scientist	No
3	Adv. Priya Kaimal	LLM, MBL	Female	Legal Expert	No
4	Dr. Indu PV	MBBS, DPM, MPhil, PhD	Female	Clinician	No
5	Dr. Rejish Kumar	MBBS, MD, DNB	Male	Clinician	No
6.	Smt. Rekha Radhakrishnan	M A (Eng.), B. Ed	Female	Lay person	No
7	Dr. Biju Soman	MBBS, MD, DPH, MSc, DLSHTM	Male	Basic Medical Scientist	Yes
8	Dr. Syam K	MBBS, MD, DM	Male	Clinician	Yes
9	Dr. Srinivas G	PhD	Male	Basic Medical Scientist (Member Secretary)	Yes

ANNEXURE – XII

SCT/EC/2338/DECEMBER-2024

The following documents were reviewed:

Original submission

- 1 IEC Application Form
- 2 Permission letter
- 3 Funding details and Budget
- 4 Covering letter addressed to the Chairperson, IEC, SCTIMST dated 09.12.2024 forwarded by HOD
- 5 Interview schedule in English, Hindi and Marathi
- 6 Informed Consent Forms in English, Hindi and Marathi
- 7 Participant Information Sheets in English, Hindi and Marathi
- 8 Checklist Form
- 9 Proposal
- 10 Declaration Form
- 11 CV of PI and Co-PI

Revised submission

- 1 Covering letter addressed to the Chairperson, IEC, SCTIMST dated 11.01.2025
- 2 Responses/amendments made based on the IEC comments
- 3 IEC recommendation letter dated 09.01.2025
- 4 Proposal
- 5 Participant Information Sheets in English, Hindi and Marathi
- 6 Informed Consent Forms in English, Hindi and Marathi
- 7 Interview schedule in English, Hindi and Marathi
- 8 Observation checklist

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



ANNEXURE – XIII
Approval to conduct the study among Station Masters



मध्य रेल

CENTRAL RAILWAY

परिचालन विभाग, मुंबई मंडल, मुंबई छत्रपति शिवाजी महाराज टर्मिनस - 400 001

OPERATING DEPARTMENT, MUMBAI DIVISION, CHHATRAPATI SHIVAJI MAHARAJ TERMINUS - 400 001

No. BB/T/161/P/Misc

October 7, 2024

**All Station Managers/
Mumbai Division**

Sub: Grant of Permission to conduct Research on pre-hospital care awareness on Suburban stations of Mumbai Suburban system.

Dr. Saranya Raj, MPH – Batch 2023 of Sree Chitra Thirunal Institute of Medical Science and Technology, Thiruvananthapuram, Kerala, is hereby permitted to conduct research and survey with Station Managers on Mumbai Division during January to February 2025 to study pre-hospitalisation care awareness and services available at various stations.

Kindly co-operate with the survey.

(P. N. RAMACHANDRAN)
Sr. Divisional Operations Manager (Cog)

07/10/2024

ANNEXURE – XIV
Approval to conduct the study among Government Railway Police



क्रमांक - पोआरे/वाचक/ 138 /२०२५.
पोलीस आयुक्त लोहमार्ग मुंबई कार्यालय,
एरिया मॅनेजर बिल्डींग, वाडीबंदर, मुंबई
दिनांक :- 14 /०१/२०२५.

विषय :- मध्य रेल्वे मार्गावरील स्थानकावर Pre- Hospitalisation care awareness and Services या विषयावरील संशोधनाबाबत...

संदर्भ :- डॉ. नायर सरन्या राज (मोबाईल क्रमांक- ८६५२७००४३४) यांचा
दि. ०५/१०/२०२४ रोजीचा अर्ज.

---०००---

उपरोक्त विषय व संदर्भान्वये अर्जदार डॉ. नायर सरन्या राज हया श्री. चित्रा थिरुनल इन्सिट्यूट ऑफ मेडिकल सायन्स आणि टेक्नॉलॉजी थिरुअनंतपुरम, केरळ येथे शिक्षण घेत आहेत. त्यांना रेल्वे अपघात झाल्यानंतर जखमींना देण्यात येणारे प्रथमोपचार व त्यासंदर्भात रेल्वे पोलीसांकडून करण्यात येणारी कार्यवाही याबाबत संशोधन करावयाचे आहे. त्याबाबत त्यांनी मा. पोलीस आयुक्त, लोहमार्ग मुंबई यांची समक्ष भेट घेतली असता त्यांना माननीयांनी संशोधनाकरिता मान्यता दिलेली आहे.

सदर संशोधनादरम्यान त्या रेल्वे पोलीसांना काही प्रश्नावली (प्रश्नपत्रिका उत्तरपत्रिकेसहित) तसेच माहिती विचारणार आहेत. त्याअनुषंगाने आपल्या अधिपत्याखालील सर्व पोलीस अधिकारी /अंमलदार यांना त्याबाबत सुचित करावे व अर्जदार यांना सदर संशोधनाकरिता वेळेची निश्चिती व सहकार्य करावे.

मा. पोलीस आयुक्त,
लोहमार्ग मुंबई
यांचे आदेशान्वये }



(वाल्मिक शादुल)
वाचक पोलीस निरीक्षक,
लोहमार्ग मुंबई.

प्रति,

वरिष्ठ पोलीस निरीक्षक, सीएसएमटी, दादर, कुर्ला, ठाणे, डोंबिवली, कल्याण, कर्जत रेल्वे पोलीस ठाणे.

प्रत सादर- मा. पोलीस उप आयुक्त, मध्य परिमंडळ, लोहमार्ग मुंबई.

मा. सहायक पोलीस आयुक्त, सीएसएमटी व कल्याण विभाग, लोहमार्ग मुंबई.

ANNEXURE - XV

Originality Report

Thesis_Draft_1

ORIGINALITY REPORT

4%

SIMILARITY INDEX

PRIMARY SOURCES

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