

**Public Knowledge, Awareness and Practice towards Emergency Services and First Aid in
Mumbai, India**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

In

Hospital and Health Management by

Shilpa Singh

Under the Supervision and Guidance of

Dr. Sandesh Kumar Sharma

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled “Public Knowledge, Awareness and Practice towards Emergency Services and First Aid in Mumbai, India” is the bonafide record of my original research work. I declare that 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 Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Shilpa Singh

2-07-2021

CERTIFICATE

This is to certify that Shilpa Singh in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed her internship at Medulance Healthcare during March 22, 2021 to June 19, 2021.

Place:

Preceptor/Head of the Organization

Date:

Name of the organization

CERTIFICATE

This is to certify that dissertation titled Public Knowledge, Awareness and Practice towards Emergency Services and First Aid in Mumbai, India is a record of the research work undertaken by Shilpa Singh in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

Faculty Guide
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School Dean
IIHMR University, Jaipur

Date

Date

Abstract

Introduction

India has been very slow in putting in place a central emergency medical services (EMS) system. According to the recent articles, there is an increase in awareness level among people with respect to pre-hospital care post second wave of COVID-19.

Aim

The Aim of the study is to assess the awareness, knowledge, attitude, and practices of ERS, and First Aid among people living in Mumbai and to provide recommendations to increase the awareness level.

Methods

A descriptive, cross-sectional study was executed online among 123 Indian population from Mumbai. The survey was used to examine the awareness, knowledge, attitude and practices of ERS and First Aid. The self-administered questionnaire was sent to the participants digitally as 'google form'. The results were analyzed using MS EXCEL office 365. The Chi-square test for Independence was done using Minitab 17 to deduce any relationship between demographic variables and AKAP regarding ERS and First Aid Results.

Result

Total of 123 respondents took part in survey and only 44 % people had good awareness level with respect to ERS and First Aid. Only 43% people know about the emergency helpline number. The knowledge level stood to 47% while the Attitude towards ERS and First Aid was also found to be approximately 48%. About 95% people are aware about the nearby hospitals, diagnostic centers and pharmacies and around 80% people thinks that chances of survival increase by transporting a patient from ambulance than private vehicle.

Conclusion

COVID-19 highlighted the vulnerabilities of Emergency Response Sector in India. Various helpline numbers were shared across social media channels but still the awareness, knowledge and practice level are not satisfactory. People do not have a positive attitude towards Emergency Response Sector.

Keywords

ERS, Awareness, First Aid, Ambulance Service

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Abbreviations

EMS - Emergency Medical Service

ERS – Emergency Response Service

ALS – Advanced Life Support

BLS – Basic Life Support

PT – Patient Transport

EMT – Emergency Medical Technician

WHO – World Health Organization

KAP – Knowledge, Attitude and Practice

Introduction

World Health Organization (WHO) reports that more than 1.2 Mn. people are killed, and 50 million people are wounded in accidents on road each year around the world. (1)

Every year, 150,000 people may perish in circumstances where first assistance may have saved their lives. (2)

One of the most critical life-saving skills is first-aid assistance. The essence of first aid is to provide basic treatment until emergency medical services arrive, which can prevent many deaths.

Pre-hospital treatment and stabilization, as well as transfer to definitive care, are provided by emergency medical services (EMS), sometimes known as ambulance or paramedic services. EMS is a vital part of the health-care system, and it is required to enhance outcomes of time-sensitive medical mishaps

According to EMS standards, advanced cardiac life support ambulances responding to life-threatening circumstances should arrive in 8 minutes or fewer. (3)

There are mainly three types of ambulances used to transport patients. A normal patient transport (PT) ambulance is used to transport non-critical patients.

The Basic Life Support (BLS) ambulances are accompanied with EMTs or paramedics. The personnel are not allowed to administer injection, IV fluids or give medications. The ambulance is well equipped with the latest medical equipment like AEDs, Pulse Oximeter, Oxygen Cylinders etc.

The Advanced Life Support Ambulance has a doctor, paramedic or EMT (Emergency Management Technicians) on board. The ambulance has access to all the lifesaving equipment

and medications like cardiac life support, cardiac monitor, ventilators, IV drips, BiPap etc. The paramedics and the EMTs are highly trained and have the permission to administer injections, IV fluids and give medications to stabilize the patient's condition

In 2018, 1,51,000 fatalities were caused due to road accidents (4) .50% lives of road accident victims could be saved if quick assistance were made available to them. (5)

India still lacks a centralized medical emergency response system. Although separate hospitals or private service providers run private ambulance services in various cities, they are not coordinated.

There are major challenges with Indian EMS system. Firstly, there are no prominent national entities in emergency response service. Hence there are many different service providers who maintain their own emergency number. This makes it impossible for people to remember all the numbers creating a lack of top-of-mind recall. According to previous studies, there is a huge lack of awareness among people in line with emergency services. The ambulances are owned by hospitals or some private players who typically transit their patients or customers. There is a paucity in coordination among the service providers which results in poor standardization. This severely affects serviceability and customer experience.

These ambulances require trained professionals but in India there is a shortage of EMTs. Most of the time, these vehicles are solely staffed by a driver and an attendant, who may or may not be a qualified paramedic. This implies that even if an ambulance arrives on time, the manpower may not be trained to provide emergency care.

WHO reports that for a population of 1 lakh, there must be one ambulance. In India, we have enough ambulances as per Road Transport Yearbook 2016-17, but this does not guarantee that the ambulances are operational.

The quality of ambulances is also overlooked in India. There is no maintenance of equipment or vehicles for years. Many of the ambulances do not have medical equipment and first aid kit as per the mandated

CAG report from Madhya Pradesh (2017) reports that the mean response time for ambulance service was noted between 41-47 mins. against 8 minutes recommend by WHO (6)

During COVID, the demand of ambulance service multiplied many folds which also highlighted the severe lack of standardization in terms of quality of services and rates charged by these service providers

Due to these huge flaws, the emergency response sector in India is considered to be unreliable, unorganized, unregulated and not responsive.

There have been many studies in the past, which have focused on the Knowledge, Attitude and Practice level of the various sections of people in terms of Emergency Medical Services and First Aid. Many studies have shown that there is a poor awareness level among people.

The Purpose of this research is to understand the current AKAP level of people in Mumbai around ERS and First Aid

Review of Literature

Search Strategy

For structuring the basis of this study, a lot of literature has been reviewed. Several published studies were explored on the platforms like PUBMED, Google Scholar, EBSCO, ScienceDirect, ResearchGate, Hindawi etc. Search was done with two objectives a) to find the basis for KAP questionnaire formulation and data interpretation b) to find the exploratory studies done on Emergency Response Services and First Aid.

The guidelines published on how a KAP study should be formulated and interpreted, and KAP studies on ERS and First Aid were studied and reviewed. The published studies on ERS and First Aid helped in finding the gap in literature.

Guideline for Conducting a Knowledge, Attitude and Practice (KAP) (7)

The Guidelines Provides the Knowledge, Attitude and Practice study of diabetes and diabetic retinopathy and takes within its ambit the management of the same. In the beginning, the basics are defined to understand the scope of The Knowledge, Attitudes and Practices in diabetes and diabetic retinopathy.

The steps in preparation of KAP study requires domain identification, question preparation and validation of questions. In the domain identification, the suitable domain has to be selected on which the study will be conducted. In the Question Preparation step, the questions which are relevant are stated on the Knowledge, Attitude, and Practice section of the study respectively. Multiple choice questions are avoided as it limits the knowledge because of guessing the answer. Questions incorporated in the attitude section should assess any prevailing attitude, belief or misconception among the population.

The Knowledge, Attitude and Practice about Public Emergencies and the Response Capability of Residents in Shanghai after the Outbreak of Coronavirus Disease 2019 (COVID-19): A Cross-Sectional Study (8)

Cross sectional study was performed on 1269 participants in Shanghai, China. The purpose was to understand the KAP about public emergency and response capability of residents.

It was discovered that 90.3 percent of participants demonstrated a positive behavior , although only 46.8% had solid knowledge and 46.2 percent performed well in the practice element. This showed that there was a poor knowledge and perception of people with respect to emergency response.

Knowledge, attitude and practice of emergency medical care in Lima, Peru (9)

This study was performed in Peru among 210 households. It was done to understand if the community requires first aid and CPR training. The study revealed that 61.4% people were unaware about the EMS number and only 24.8% said that they would call an ambulance in case of an emergency.

The findings revealed a lack of faith in Lima's EMS services as well as a lack of understanding of EMS contact numbers, which may have encouraged community members to trust one other instead of their local EMS.

Public Awareness of the Emergency Medical Services in Maharashtra, India: A Questionnaire-based Survey (10)

The purpose of the study was to find out the awareness level of EMS among people in Mumbai. It was a cross-sectional survey in which 1220 people participated. Data was collected using a convenient sampling strategy. The results revealed that 76.2 percent of those polled are aware that the number '108' is for medical emergencies.

Public awareness of the need to call emergency medical services following the onset of acute myocardial infarction and associated factors in Japan (11)

It was a quota sampling-based population-based survey done in Japan. A total of 1200 people took part in the poll. The study revealed that awareness level among the general public was low with respect to calling an emergency service.

Knowledge, attitudes, and practices of emergency department staff towards disaster and emergency preparedness at tertiary health care hospital in central Saudi Arabia (12)

This study was done at Tertiary health care hospital in central Riyadh, Kingdom of Saudi Arabia. There was a total of 189 participants. The survey found that healthcare professionals had a good

degree of awareness of and a neutral attitude, practise, and familiarity of disaster preparedness.

Knowledge, attitude, and practice of first aid among the commercial drivers in the Kumaon region of India (13)

From November 2018 to January 2019, the study focused on drivers working in Uttarakhand's Haldwani Block. Participants were chosen using consecutive sampling approaches in this cross-sectional study. The participants in the study had a positive behavior on giving first aid to RTA victims. Although most commercial drivers had a rudimentary understanding of first aid, just a handful of them received advanced training. The drivers were positive about assisting RTA victims and receiving first-aid training.

Knowledge, Attitude and Practice of First Aid and Emergency Care among the Classes Educated in Aurangabad, Maharashtra (14)

A total of 700 people participated in this survey. Only 5.6 percent of the participants had strong knowledge of Emergency and First Aid Services while 58.7% of the participants had poor understanding of the same. The study suggested initiating programs to build awareness among people.

Current Status of Knowledge about Cardiopulmonary Resuscitation among the University Students in the Northern Region of Saudi Arabia (15)

Between March and November 2017, a study was conducted among four Saudi Arabian universities in the northern region, with a total of 947 students participating to assess their KAP on CPR. Although they lacked sufficient knowledge of CPR, they had a good attitude about it.

Knowledge and Attitude about Basic Life Support and Emergency Medical Services amongst Healthcare Interns in University Hospitals: A Cross-Sectional Study (16)

For the study, questionnaire with 15 questions was created. The survey was completed by 698

out of 865 health interns. The overall awareness score among the study participants was average, while the knowledge score was below average. Furthermore, the participants demonstrated positive behavior for BLS training.

Awareness about basic life support and emergency medical services and its associated factors among students in a tertiary care hospital in South India (17)

A descriptive cross-sectional research of 520 study subjects was undertaken in hospital in South India. The goal was to assess the level of BLS awareness and skills among medical and dentistry and nursing students and interns of the hospital. The level of BLS awareness was found to be below average, emphasizing the significance of need of training at all levels.

Gap In Literature

After extensive literature review it was found that most of the studies are either done on health professionals/doctors or some cohort of medical students. Few studies have been found which was done among the general public and took practices regarding ERS and First Aid into account. That is why this study was conducted to examine the AKAP regarding ERS and First Aid among the population of India residing in Mumbai

Objectives

- a) To gauge the Awareness, Attitude, Knowledge, and Practices regarding ERS and First Aid among population of India in Mumbai
- b) To provide recommendations for the improvement of Awareness, Knowledge, Attitude and Practice with respect to ERS and First Aid

Methodology

Study Design

It is a descriptive and cross-sectional study which was carried out from 1 April 2021 to 19 June 2021

Study Participants

The study population comprised of participants from the state of Maharashtra. The sampling method for the selection of participants used was convenient sampling.

Ethical Approval

The significance of the study was described to the participants in the Google Form description, and e-consent was secured prior to filling out the google form. The questionnaire did not include the individual's names, phone numbers, or email addresses in order to protect their privacy. Only 6% of the participants refused to take part in the survey, which was distributed at random.

Measurement

A self-designed questionnaire was formulated and rolled-out to collect primary data. Each participant was required to read the questions and rate the degree to which they agreed with each statement using a 5-point Likert scale. The questionnaire collected information on demographic characteristics (including gender, age, education, occupation and place of residence), an individual's awareness towards ERS and First Aid through a total of five questions. A 5-point Likert scale on Intensity starting from 1 (Not At All) to 5 (Very Much) was used to rate the individual's awareness level. (3) The participant's knowledge was assessed through seven questions on emergency preparedness and first aid. A 5-point Likert scale on Likelihood ranging from 1 (Definitely Not) to 5 (Definitely) was used to rate the individual's knowledge level. (4)

An individual's attitude towards ERS and First Aid were identified by seven questions and a 5-point on likelihood ranging from 1 (Definitely Not) to 5 (Definitely) was used. (5) Finally, the individual's practice towards ERS and First Aid were identified by five questions and a 5-point on Frequency ranging from 1 (Never) to 5 (Always) was used.

Each person was allowed to submit the questionnaire only once.

The total points for all of the four domains of awareness (five items), knowledge (seven items), attitude (seven items), and practice (five items) were calculated for analysis

Data Processing & Analysis

Descriptive analysis of the responses was done in MS Excel office 365. Frequencies of 5-point Likert scale responses were used for the description of findings and pie charts, bar graphs are used for the visual demonstration of the data collected. The Chi-square test for Independence was done using Minitab 17 for analyzing the association between the demographic variables and AKAP regarding ERS and First Aid.

Result

The total number of responders was 123, with 6 people declining to participate in the poll.

58 percent of participants were between the ages of 18 and 25, 35.3 percent were between the ages of 25 and 40, and the percentage of people aged 40 to 60 was 6.7 percent.

Male participants made up 73.1 percent of the total, while females made up 26.9%.

Only 11 of the 119 participants were from rural areas, whereas the majority of the participants were from urban areas. 68.1 percent of the participants were employed, and nearly 44 percent had completed their post-graduation.

Age of the participant	Number	Percent
18-25	69	58%

25-40	42	35.3%
40-60	8	6.7%
60+	-	-
Total	119	100%

Table 1 Age distribution of participants

Gender	Number	Percent
Male	87	73.1%
Female	32	26.9%
Transgender	-	-
Prefer Not to say	-	-
Total	119	100%

Table 2 Gender distribution of participants

Level of Education	Number	Percent
School	1	0.8%
Diploma	2	1.7%

Graduation	64	53.8%
Post-Graduation	52	43.7%
Total	119	100%

Table 3 Level of education of participants

Working Professional	Number	Percent
Yes	79	68.1%
No	37	31.9
Total	119	100%

Table 4 Working and non-working professionals

Place of Residence	Number	Percent
Urban	108	90.8%
Rural	11	9.2%
Total	119	100%

Table 5 Place of residence of participants

Null Hypothesis Statement	Pearson Chi-Square Value	p-Value	Decision (Accept/Reject)
There is No relationship between the Age of the participant and Awareness regarding ERS and First Aid	2.671	0.263	Accept
There is No relationship between the Age of the participant and Knowledge regarding ERS and First Aid	0.001	0.975	Accept
There is No relationship between the Age of the participant and Attitude regarding ERS and First Aid	0.663	0.717	Accept
There is No relationship between the Age of the participant and Practice regarding ERS and First Aid	2.538	0.281	Accept
There is No relationship between the Gender of the participant and Awareness regarding ERS and First Aid	0.011	0.916	Accept
There is No relationship between the Gender of the participant and Knowledge regarding ERS and First Aid	0.727	0,393	Accept
There is No relationship between the Gender of the participant and Attitude regarding ERS and First Aid	0.302	0.582	Accept

There is No relationship between the Gender of the participant and Practice regarding ERS and First Aid	1.223	0.269	Accept
There is No relationship between the Level of Education the participant and awareness regarding ERS and First Aid	1.476	0.224	Accept
There is No relationship between the Level of Education of the participant and Knowledge regarding ERS and First Aid	2.016	0.1555	Accept
There is No relationship between the Level of Education of the participant and Attitude regarding ERS and First Aid	0.112	0.738	Accept
There is No relationship between the Level of Education of the participant and Practice regarding ERS and First Aid	0.986	0.320	Accept
There is No relationship between the working professionals and Awareness regarding ERS and First Aid	0.367	0.544	Accept
There is No relationship between the working professionals and Knowledge regarding ERS and First Aid	0.054	0.816	Accept
There is No relationship between working professionals and Attitude regarding ERS and First Aid	0.012	0.912	Accept

There is No relationship between the working professionals and Practice regarding ERS and First Aid	0.256	0.613	Accept
There is No relationship between the Place of Residence of the participant and Awareness regarding ERS and First Aid	0.004	0.949	Accept
There is No relationship between the Place of Residence of the participant and Knowledge regarding ERS and First Aid	0.013	0.911	Accept
There is No relationship between the Place of Residence of the participant and Attitude regarding ERS and First Aid	0,029	0.865	Accept
There is No relationship between the Place of Residence of the participant and Practice regarding ERS and First Aid	0.646	0.421	Accept

Table 6 Chi-square test results

Awareness:

- According to the survey, approximately 43% of the people are aware about the toll-free number for medical emergency while about 16% of the people did not have a clue
- About 31% people have little to no idea about the private ambulance service providers in the city
- Almost 76% people are familiar with basic first aid procedures while 45% of the people have less awareness towards CPR

- About 95% people are aware about the nearby hospitals, diagnostic centers and pharmacies
- No relationship was found between demographic variables and awareness on performing the chi square test

Are you aware of toll-free number for medical emergency?

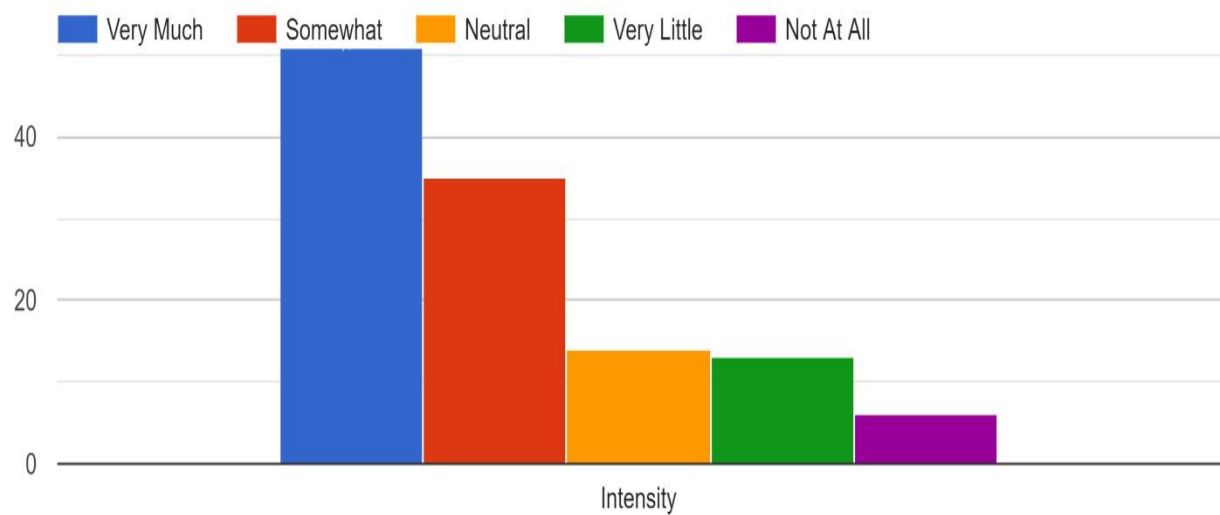


Figure 1 Number of participants familiar with the toll-free number for medical emergency

Are you aware of Cardiopulmonary resuscitation (CPR)?

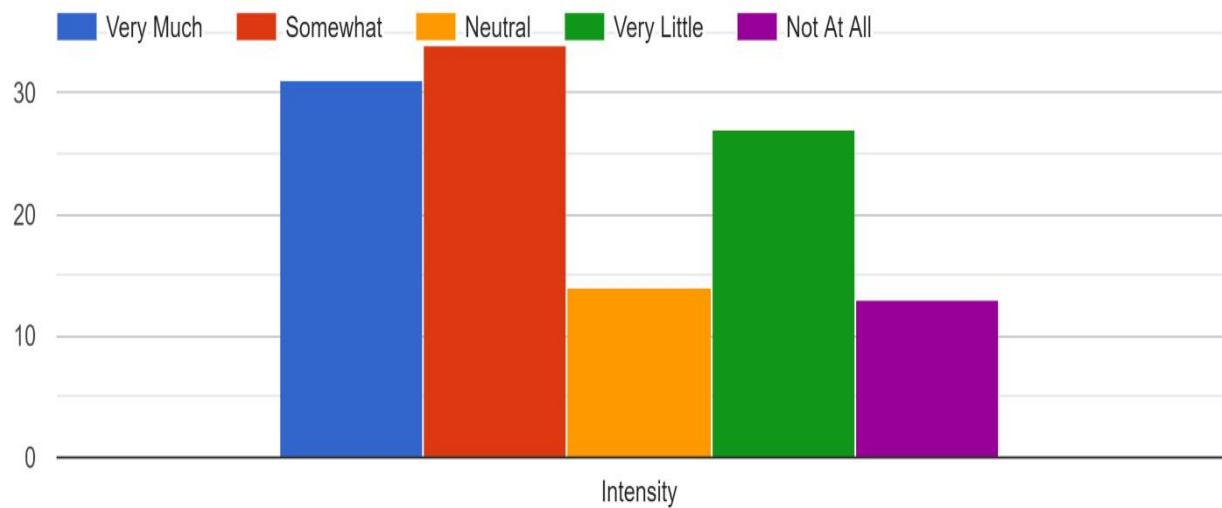


Figure 2 No. of Participants familiar with the CPR

Knowledge:

- According to the survey, 66 out of 119 people were definite that 102/112/108 are the emergency helpline numbers
- About 74% people thinks that ambulance provides prehospital care facilities

- 82% of the people have the knowledge of different type of ambulances
- 102 out of 119 participants are sure that booking of an ambulance does not requires the permission of either a doctor or a police officer
- Most of the participants agree to the fact that first aid can save lives and almost 90% are aware that anyone can learn first aid techniques and that there are courses for the same
- No relationship was established between demographic variables and knowledge

112/108/102 are ambulance helpline numbers

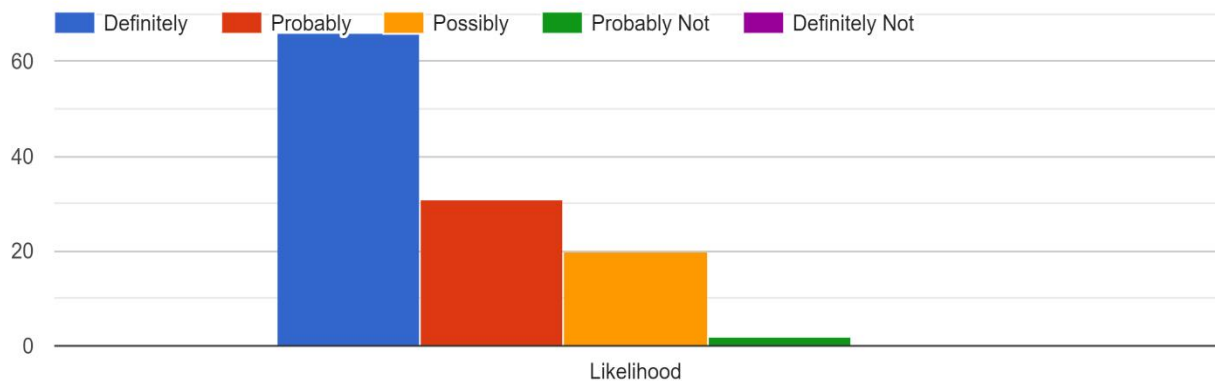


Figure 3 No. of Participants with the knowledge of 112/108/102

Attitude:

- Majority of the participants think that there are not enough ambulances available in the city
- 80% of the people have positive attitude towards ERS and they believe that chances of survival increases when a patient is transported from ambulance than a private vehicle Almost
- About 53% thinks that if they call for an ambulance, it wont reach on time and 56% thinks that ERS in India are not affordable
- On being asked whether they will enroll themselves for a CPR training course, 70.5% showed a positive response
- No relationship was found between demographic variables and attitude of the participants

Do you think we have sufficient number of ambulances?

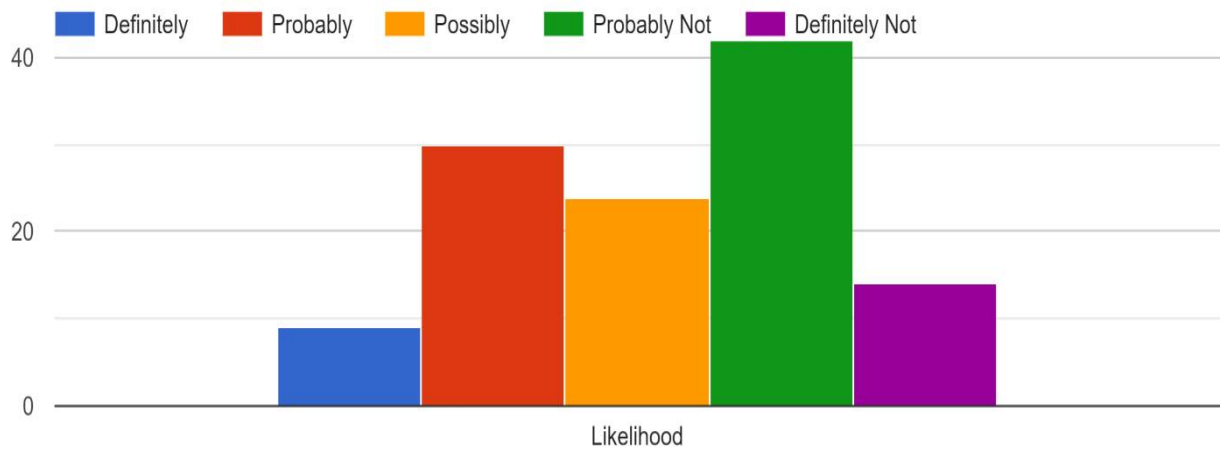


Figure 4 No of participants who thinks that there are sufficient no. of ambulances

Do you think emergency healthcare services are affordable?

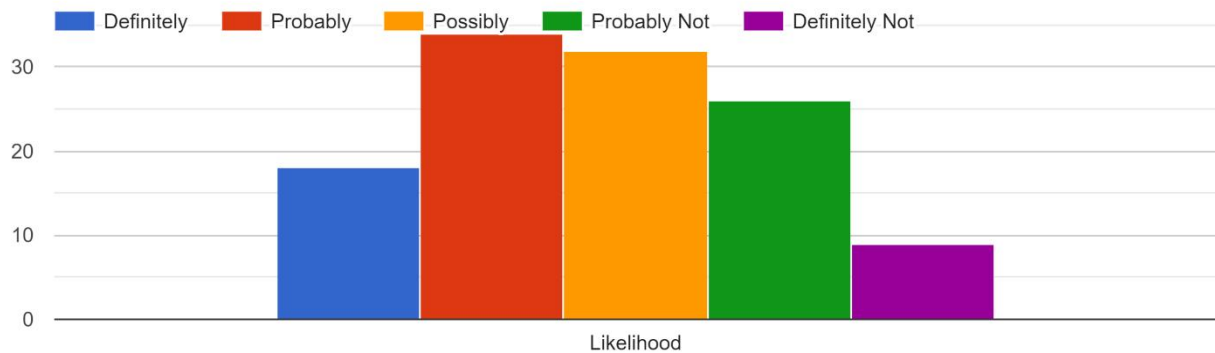


Figure 5 No of participants who think that healthcare services are affordable

Practice:

- On being asked if they call emergency helpline during emergency, 57% people showed negative response.
- Only 54% people save the emergency helpline numbers
- 70% people have first aid kit with them while only 63% use them
- Majority of the people provide first aid to people in need and assist their lives

- No relationship was found between demographic variables and practice level of the participants

Do you save the emergency helpline numbers?

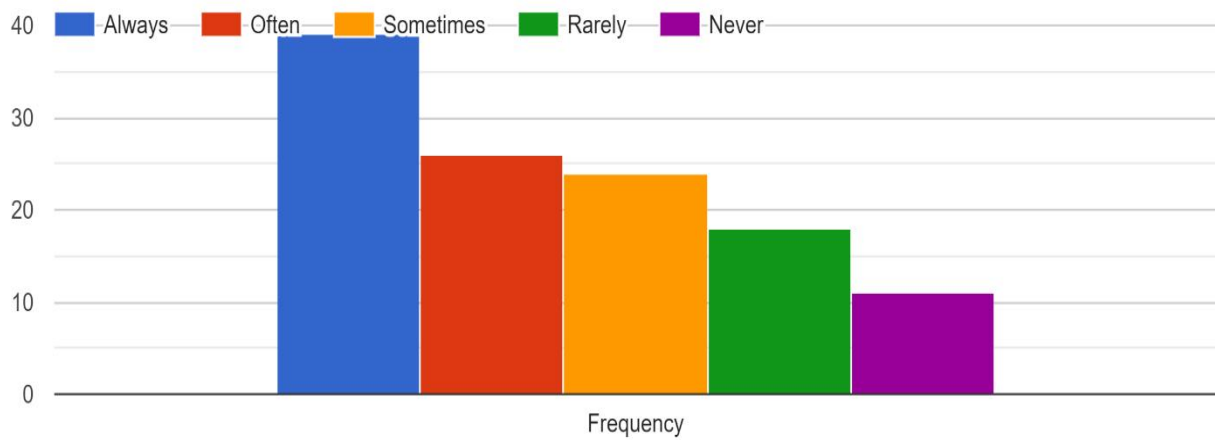


Figure 6 No of Participants who saves emergency helpline numbers

Do you have a first aid kit?

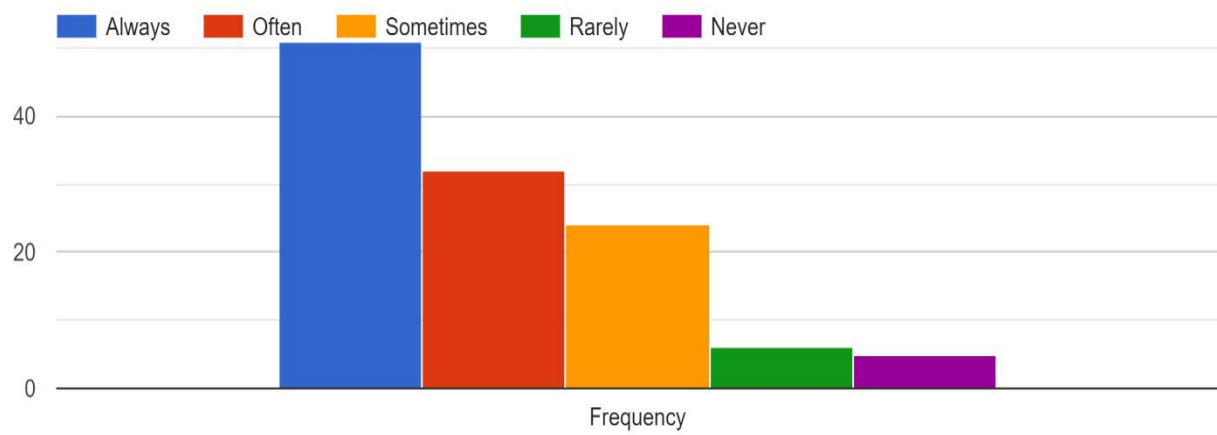


Figure 7 No of Participants who have first aid kit

Discussion

Key purpose of the study was to examine the level of awareness among people regarding the Emergency Response Services and First Aid in Mumbai. It was found out that people still are not aware about the emergency helpline number. Only 42% of the working population have a good awareness level in terms of ERS and First Aid. Even after COVID-19, there is not much difference in the knowledge and practice level of people for ERS and First Aid. According to the survey a majority of people have an opinion that we do not have sufficient ambulances in the city to cater to the emergency requirement of people. People do not trust the EMS in India considering the fact that more than 50% people think that ambulance will not reach on time, if a request is made. They also have an opinion that these services are not affordable to use.

Conclusion

COVID-19 highlighted the vulnerabilities of Emergency Response Sector in India. Various helpline numbers were shared across social media channels but still the awareness, knowledge and practice level are not satisfactory. People do not have a positive attitude towards Emergency Response Sector.

Recommendations

The certain recommendations are-

1. Government should work on PPP model with private emergency service providers. This will not only ensure a central number for the service but also make the emergency service more affordable

2. Every state government should ensure steps like awareness drive, Ad campaigns etc. to create top of mind recall for the general public to remember the helpline number
3. More investment can be made in EMS of the country with respect to technology and operations to make it robust. The good quality services would generate a sense of trust among people on the EMS system
4. Government should also take initiatives to make people learn about the basic first aid
5. Corporates, IT firms and other sectors should make sure to build a safer working environment for the safety of their employees by either creating wellness plans for their employees, setting up medical rooms inside the building etc
6. The working professionals should be trained with basic first aid procedures and CPR. This will empower them to practice basic first aid procedures independently to people in need

Limitation

1. Being a cross sectional study, the opinions of the people were considered at one point of time.
2. The questionnaire was circulated online. Everyone did not have the equal chance of participation due to lesser penetration of smart phones and internet.

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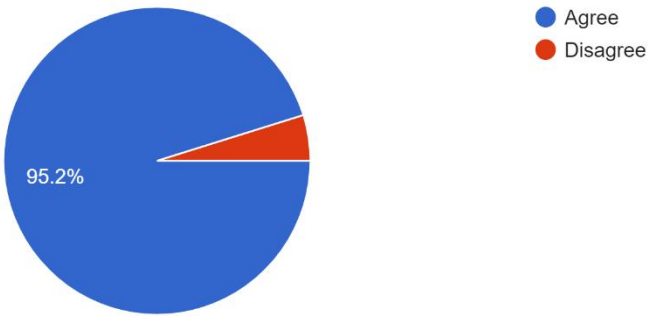
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ANNEXURES

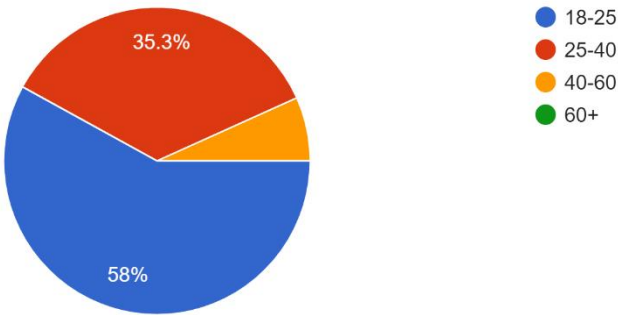
E- Consent to participate

125 responses

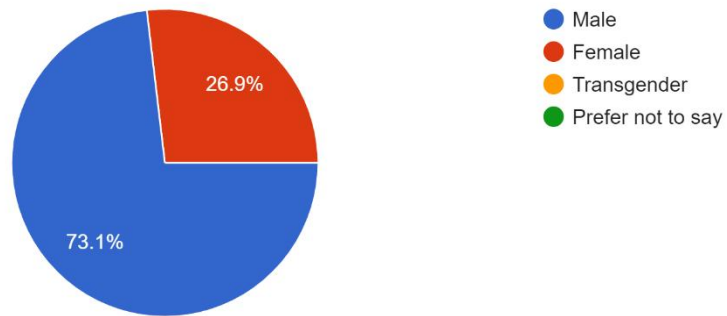


How old are you?

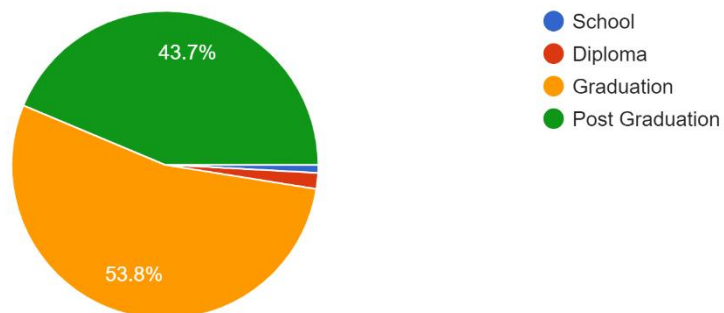
119 responses



Are you
119 responses



Level of Education
119 responses



Place of residence

119 responses

