A RESEARCH PROJECT REPORT FOR
THE OPERATIONAL RESEARCH PROGRAMME OF
THE TAMIL NADU HEALTH SYSTEM REFORM PROGRAM (TNHSRP)

TITLED

CHALLENGES OF RURAL PEOPLE IN EFFECTIVE UTILISATION OF 108 EMERGENCY AMBULANCE SERVICES IN TAMIL NADU – AN EMPIRICAL STUDY

SUBMITTED BY

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MADRAS CHRISTIAN COLLEGE
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TO

IIT MADRAS
Indian Institute of Technology Madras

Tamilnadu Health Systems Project
Department of Health and Family Welfare, Government of Tamil Nadu

FEBRUARY 2022

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TNHSP
Access, Equity, Quality

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FEBRUARY 2022

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DECLARATION

We the undersigned solemnly declare that the report of the research project entitled ***"Challenges of Rural People in Effective Utilisation of 108 Emergency Ambulance Services in Tamil Nadu – An Empirical Study"*** funded by the Operational Research Programme of Tamil Nadu Health System Reform Programme (ORP-TNHSRP) is a record of original work done by us during the period of August 2021 – February 2022. We assert that the report is prepared in adherence to the research proposal duly approved by the ORP-TNHSRP and no change has been made. We further declare that the report has not been submitted to any University/Institution for the award of any degree or diploma or certificate or has not been published any time before.

(B. Chinna Muthu)	(S. Kalyani)	(V. Vijay Devanesan)
Principal Investigator	Co-Principal Investigator	Co-Principal Investigator

Date: 28th February 2022

Place: Chennai, Tamil Nadu.

ACKNOWLEDGEMENTS

Research work is an inclusive activity that necessitates a team approach in varied dimensions. Acknowledging the good minds and hearts for their invaluable and significant contributions is one of the indispensable duties of the researchers. First and Foremost, We would like to place on record, our sincere thanks to Dr. S. Uma I.A.S., the Project Director and the programme officers of the Operational Research Programme (ORP) - Tamil Nadu Health System Reform Program (TNHSRP) for their immense support and guidance. We profusely thank Professor V. R. Muraleedharan (IIT-Madras) the Project Coordinator of ORP-TNHSRP for his continuous mentoring and correspondence. We also thank Ms. Aswini Nachiyar, the Project Associate (IIT-Madras) for her timely support and coordination.

Our heartfelt thanks to the Principal, the Bursar, the Dean – Research & Development and the Head – Department of Commerce, Madras Christian College for helping us to carry out the research work in the institution. We would like to place on record my special thanks and appreciation to Mx. Kameshwaran E Govender, the Research Assistant for his flawless work, timely assistance, skilful and intellectual support to accomplish this research work on time. We would like to thank Mr. S. Kumaran, the Field Investigator for his sincere and outstanding data collection work by visiting the selected villages in the rural sub-districts of Kancheepuram district, Tamil Nadu.

We are grateful for the assistance rendered by the staff of the Principal's office and Bursar's office, Madras Christian College. We place on record my sincere thanks to Dr. A. J. Premalatha, the Statistician for assisting in statistical analysis of the research data. We would like to thank Ms. Jayagowri K Pritham and J. Arun Kumar for editing, translating and typing the interview schedule in Tamil Language. Our special thanks to Mr. Sanjay V for helping with the English corrections and editing. We acknowledge the work of Mr. S. Vijayan and Ms. B. Muthulakshmi for transcribing the interview data, assisting in data coding and paperwork. My sincere thanks to all 108 ambulance pilots, 108 ambulance emergency medical technicians and the rural respondents of the rural sub-districts of Kancheepuram district, Tamil Nadu for their patience and cooperation in data collection. Our special thanks to our family members for their continuous care and support.

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LIST OF ABBREVIATIONS

AECT	Advance Emergency Care Technician
AIIMS	All India Institute of Medical Sciences
ALS	Advance Life Support
AMOS	Analysis of Moments Structure
AYUSH	Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana
BLS	Basic Life Support
COVID-19	Corona Virus
CPR	Cardio Pulmonary Resuscitation
D. Pharm	Diploma in Pharm
DGNM	Diploma in General Nursing & Midwifery
EAG	Empower Action Group
EAS	Emergency Ambulance Service
ECC	Emergency Care Centre
ECC	Emergency Care Centre
EMRI	Emergency Management and Research Institute
EMRI	Emergency Management and Research Institute
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
ERC	Emergency Response Centre
FNA	Female Nursing Assistant
FRB	First Responder Bikes
GH	Government Hospital
GH	General Hospital
GMC	Government Medical College
GPS	Global Positioning Service
HSC	Health Sub-Cenrte
JSSK	Janani Sishu Suraksha Kariyakaram
JSSK	Janani Sishu Suraksha Kariyakaram
KMPL	Kilometre Per Litre
MDG	Millennium Development Goal
MNA	Male Nursing Assistant
MoU	Memorandum of Understanding

NEET	National Eligibility cum Entrance Test
NGO	Non-Government Organisation
NHM	National Health Mission
NHRM	National Rural Health Mission
NLS	Neonatal Life Support
PAI	Pre-Arrival Intimation
PHC	Primary Health Centre
PMSSY	Pradhan Mantri Swasthya Suraksha Yojana
PPP	Public-Private Partnership
PPP	Public-Private Partnership
RTA	Road Traffic Accidents
SBE	Snakebite Envenomation
SEM	Structural Equation Modelling
SPSS	Statistical Package for Social Science Research
TAEI	Tamil Nadu Accident and Emergency Care Initiative
TNEMS	Tamil Nadu Emergency Management Service
TNHSP	Tamil Nadu Health Systems Project
TNHSP	Tamil Nadu Health System Project
TNHSRP	Tamil Nadu Health System Reform Program
WHO	World Health Organization

CHAPTER - I

INTRODUCTION

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INTRODUCTION

1.1. Introduction

The 108 Emergency Ambulance Services in the state of Tamil Nadu is one of the commendable healthcare services accessible to the people of all segments in society. Initially, the 108 emergency medical service was started in the state of Andhra Pradesh and later the operation was extended across 18 states and 3 union territories of India. The Emergency Ambulance Service provided with a toll-free number 108 is operated on a public-private partnership with GVK-Emergency Management and Research Institute (EMRI). Initially, Tamil Nadu Health Systems Project had partnered with selected NGOs in 15 districts to provide ambulance services. Due to various difficulties faced in running the operations, it was decided to partner with an experienced organisation and accordingly signed an MoU with GVK (EMRI) to provide emergency services for the State, fully funded by the Government of Tamil Nadu. The 108 Emergency Ambulance Service is a 24x7 service, which anyone can avail by dialling the number 108 on their phone during the case of any emergency. Tamil Nadu, being a significant state in its socio-economic growth and condition provides quality health care facilities to the people through several health care projects. However, access to emergency health care facilities by rural people is still not fully achievable. Generally, the response time of the 108 Emergency Ambulance Service for the rural calls are significantly higher in comparison to urban calls. In this research work, the researcher has enumerates the challenges of rural people in the effective utilisation of 108 Emergency Ambulance Services in the state of Tamil Nadu.

1.2. Statement of the Problem

The accessibility of medical services in rural geography is quite challenging. The Government of India and the Government of Tamil Nadu have brought many policies and programmes to benefit the rural communities. However, the outcome of these initiatives is limited. The present research work intends to explore the challenges faced by the rural population of Tamil Nadu pertaining to the utilisation of 108 Emergency Ambulance Services. The challenges may include lack of awareness, limited knowledge about the medical services provided, attitude and perception towards the service, behaviour of the service provider, lack of utility, no service in selective locations, poor accessibility, no network connectivity, lack of convenience and not helpful during an emergency. Subsequently, understanding the needs and expectations of the rural populations towards medical care needs is imperative for the prompt and effective provision of medical services. Therefore, only by identifying and analysing the

challenges faced by the rural people in utilising 108 emergency medical services, suitable remedies can be taken by the Government through effective policy measures.

1.3. Need and Importance of the Study

The current research project aims to address the challenges of rural people in utilising the 108 Emergency Ambulance Services from varied dimensions viz. Awareness, Medical Service, Behaviour, Utility, Location, Access, Network, Convenience and Emergency. The study further plans to bring out a 5 C's model approach (Care, Consultation, Commitment, Coverage and Control) to understand their needs and to address the challenges in effective utilisation of 108 services in the state of Tamil Nadu. The socio-demographic profile and health profile of the rural population are documented in the study which helps the government to understand the overall social and health condition of people in rural geography. The proposed research work is much needed and important for effective policy decisions to ensure better emergency health care services to the rural population of Tamil Nadu.

1.4. Scope and Significance of the Study

The scope of the study is extended to the rural population in the state of Tamil Nadu. The study is significant for the Ministry for Health and Family welfare of the Government of Tamil Nadu and policymakers to plan and implement suitable policies and programmes to extend emergency health care services to the rural, poor and marginalised population of the state. The outcome of the study provides a panoptic view on the challenges and the needs of rural people with regard to 108 Emergency Ambulance Services.

1.5. Objectives of the Study

1. To study the socio-demographic profile of rural people in the state of Tamil Nadu.
2. To understand the health profile of rural people in the state of Tamil Nadu.
3. To study the challenges of rural people in using 108 Emergency Ambulance Services.
4. To explore the needs of rural people in 108 Emergency Ambulance Services through the 5 C's Model approach.
5. To study the challenges and expectations of 108 ambulance Pilots and Emergency Medical Technicians in providing 108 Emergency Ambulance Services in rural areas.
6. To suggest measures to overcome the challenges of rural people in using 108 Emergency Ambulance Services.

1.6. Hypotheses of the Study

1. H_0 – There is no significant difference between the socio-demographic profile and the health profile of the respondents and the challenges of rural people in using 108 Emergency Ambulance Services.

2. H_0 – There is no significant difference between the socio-demographic profile and the health profile of the respondents and the needs of rural people in 108 Emergency Ambulance Services.
3. H_0 – There is no significant relationship amongst the challenges and needs of rural people in using 108 Emergency Ambulance Services.
4. H_0 – There is no significant influence of the challenges of rural people in using 108 Emergency Ambulance Services on their needs (5 C's Model Approach).
5. H_0 – There is no intrinsic relationship between the challenges and needs of rural people in using 108 Emergency Ambulance Services.

1.7. Research Methodology

The present research work is scientific and systematic in approach and empirical in nature. The study constitutes both primary and secondary data. The primary data of the study is collected through a well-structured interview schedule distributed to rural respondents in the district of Kancheepuram in the state of Tamil Nadu by using a judgment sampling technique. The judgments considered for the data collection include that the respondent should reside in the rural geography, experienced medical emergencies at least once in his or her lifetime and should belong to the poor or marginalised population based on their income. Further, the researcher also interviewed the 108 ambulance drivers and medical attendants to understand the challenges in rendering emergency medical care in rural areas. The secondary data of the research work is retrieved from journals, reports and web sources etc. The data collected was loaded in the suitable statistical software namely statistical package for social science research (SPSS) and analysis of moments structure (AMOS). The data analysis was conducted by using relevant statistical techniques to provide valid inferences pertaining to the objectives of the study. The reliability of the data was assessed with the help of the Cronbach Alpha value.

1.8. Population of the Study

Table: 1.1
Population Distribution of the State of Tamil Nadu

Tamil Nadu	Number of Villages		No. of Towns	No. of Households	Population	Males	Females
	Inhabited	Uninhabited					
Urban	0	0	1097	89,96,487	3,49,17,440	1,74,58,910	1,74,58,530
Rural	15049	930	0	95,28,495	3,72,29,590	1,86,79,065	1,85,50,525
Total	15049	930	1097	1,85,24,982	7,21,47,030	3,61,37,975	3,60,09,055

Source: Census of India, 2011

The rural people residing in the state of Tamil Nadu is the considered population of the study. According to the Census of India (2011), the population of Tamil Nadu stood at 7,21,47,030 which spreads across 32 districts, 215 sub-districts, 1097 towns and 15,049

villages. Out of the total population, 3,72,29,590 people reside in the rural geography of Tamil Nadu. The details of the population distribution of the state of Tamil Nadu are tabulated in table 1.1.

Table: 1.2

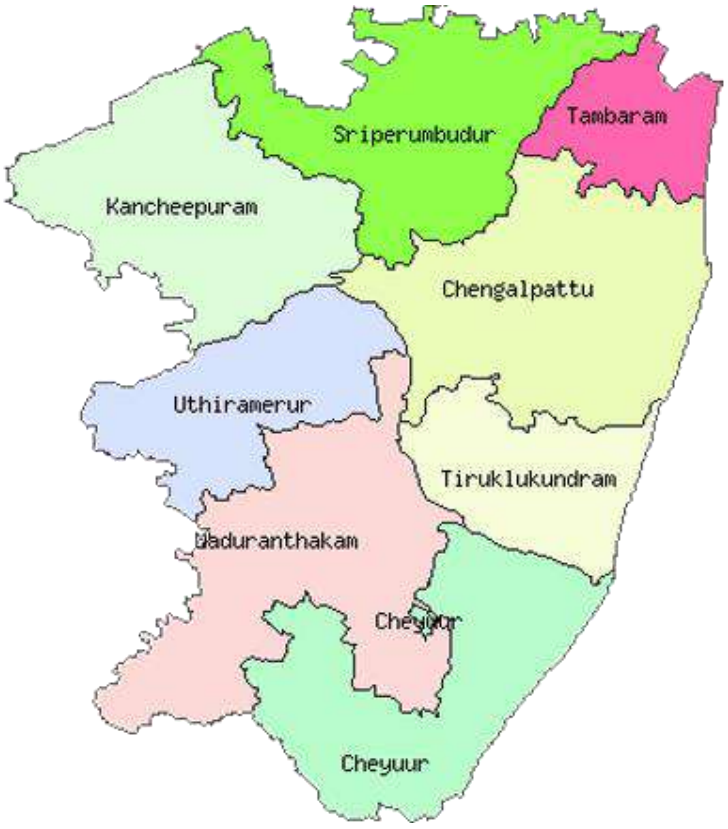
Rural Sub-Districts of Kancheepuram District

S.No.	Rural Sub-Districts	Number of villages		No. of households	Population		
		Inhabited	Uninhabited		Persons	Males	Females
1	Sriperumbudur	132	13	53,243	2,20,796	1,12,103	1,08,693
2	Tambaram	7	0	6,866	27,396	13,762	13,634
3	Sholinganallur	6	0	16,480	70,441	35,719	34,722
4	Chengalpattu	146	27	65,025	2,64,378	1,33,414	1,30,964
5	Kancheepuram	157	9	55,563	2,22,626	1,11,553	1,11,073
6	Uthiramerur	114	2	30,878	1,22,939	61,635	61,304
7	Tirukalukundram	95	6	33,136	1,31,183	66,179	65,004
8	Maduranthakam	188	0	56,433	2,22,310	1,11,401	1,10,909
9	Cheyyur	117	0	43,741	1,77,847	89,213	88,634
Total		962	57	3,61,365	14,59,916	7,34,979	7,24,937

Source: Census of India, 2011

Figure: 1.1

Eight Taluks of Kancheepuram District



Source: Districts of India, Kancheepuram

1.9. Sample Design

According to the Census of India, 2011, the total population of the Kancheepuram district is 39,90,897 having a share of 36.41% rural people constituting 14,53,072. The Kancheepuram district is divided into three revenue divisions comprising of 8 taluks, 13 blocks, 648 village panchayats and 1214 revenue villages. According to the Census of India, 2011, the rural population of the Kancheepuram district spread across 9 sub-districts such as Sriperumbudur (132), Tambaram (7), Sholinganallur (6), Chengalpattu (146), Kancheepuram (157), Uthiramerur (114), Tirukalukundram (95), Maduranthakam (188) and Cheyyur (117) with 962 inhabited villages comprise 14,59,916 people. The details of the rural sub-districts of the Kancheepuram district is presented in table 1.2. The researcher has randomly selected one village from each rural sub-district of the Kancheepuram district and collected data using the judgement sampling method. The interview of 108 ambulance drivers and medical attendants working in the selected rural sub-districts of the Kancheepuram district after getting due approval from the authorities concerned.

1.10. Tool used for Data Collection

The primary data collection for the study was procured with the help of a well-designed interview schedule distributed among the 370 rural respondents in the Kancheepuram district of Tamil Nadu. The interview schedule was constructed with objective type questions, dichotomous type questions (yes or no), closed-ended questions, open-ended questions and five-point Likert's scale questions [Scoring with Strongly Agree (5), Agree (4), Neither Agree nor Disagree (3), Disagree (3) and Strongly Disagree (1)]. The interview schedule was segregated into five parts which covers: Socio-Demographic Profile, Access to Basic Facilities, Status of Assets, Health Profile, Status of Vaccination, General Health Information, Daily Habits, General Medical Condition, Specific Medical Condition, Experience in Medical Emergency, Status of Usage of 108 Emergency Ambulance Services, Health Insurance, Preference and Frequency of Visits to Health Centres, Travel Distance to Health Centres, Challenges in Using 108 Emergency Ambulance Services, Needs of Rural People in 108 Emergency Ambulance Services and Suggestions. The outline of the interview schedule was prepared to procure data from 108 ambulance drivers and medical attendants including their basic profile and the challenges in providing emergency medical services in rural areas. The researcher ensured the consent of all the selected respondents before recording their responses for the interview schedule.

1.11. Pilot Study and Reliability Test

The researchers conducted a pilot study in the Chengalpattu rural sub-district of Kancheepuram district in the state of Tamil Nadu during September 2021 and October 2021 by collecting 40 samples. The data collected through the pilot study was loaded in the SPSS software to check the reliability. The researcher confirmed the reliability of the data with the Cronbach's alpha values for the Likert's five-point scale variables which were greater than 0.800 or 80% above the threshold value of 0.70 (Nunnally, 1994). Post-Pilot Study, the researcher reviewed the interview schedule and made minor changes in the options of the objective type questions and also rephrased the statements of the Likert's scale questions.

1.12. Main Study

The data collection of the study was done in the nine selected rural sub-districts of the Kancheepuram district in the state of Tamil Nadu for four months from October 2021 till January 2022. The researcher procured data from 370 respondents spread across nine villages of the 9 rural sub-districts of the Kancheepuram district namely Mannivakkam village (Chengalpattu sub-district), Perukkaranai village (Cheyyur sub-district), Purisai village (Kancheepuram sub-district), Mamandur village (Maduranthakam sub-district), Sittalapakkam village (Sholinganallur sub-district), Nandambakkam village (Sriperumbudur sub-district), Vengapakkam village (Tambaram sub-district), P.V.Kalathur village (Tirukalukundram sub-district) and Salavakkam village (Uthiramerur sub-district). The field investigator visited the selected villages and collected data from the rural respondents after ensuring their consent to participate in the data collection process and to respond to the interview schedule. The distribution of samples across the selected villages of the Kancheepuram district is presented in table 1.3.

Table: 1.3

Distribution of Samples across the Selected Villages of Kancheepuram District

S.No.	Rural Sub-District	Randomly Selected Village	No. of Households	Population	No. of Males	No. of Females	Sample Size
1	Chengalpattu	Mannivakkam	3,262	13,308	6,700	6,608	39
2	Cheyyur	Perukkaranai	586	2,366	1,172	1,194	38
3	Kancheepuram	Purisai	580	2,323	1,154	1,169	39
4	Maduranthakam	Mamandur	1,305	5,503	2,829	2,674	37
5	Sholinganallur	Sittalapakkam	3,461	13,542	6,857	6,685	37
6	Sriperumbudur	Nandambakkam	3,174	12,560	6,284	6,276	46
7	Tambaram	Vengapakkam	697	2,758	1,409	1,349	38
8	Tirukalukundram	P.V.Kalathur	1,174	4,720	2,343	2,377	47
9	Uthiramerur	Salavakkam	787	3,311	1,635	1,676	49
		TOTAL	15,026	60,391	30,383	30,008	370

Source: Primary Data

1.13. Statistical tools and techniques

The statistical package for social science research (SPSS) and analysis of moments structure (AMOS) are the two statistical tools used to analyse the collected data and the following statistical techniques were used for further interpretation.

1. Simple percentage analysis
2. Descriptive statistics
3. One Sample t-test
4. One-way analysis of variance (ANOVA)
5. Bi-variate Correlation
6. Multiple linear regression analysis
7. Structural Equation Modelling (SEM)

1.14. Limitations of the study

1. The sample of the study is limited to the rural sub-districts of Kancheepuram district of Tamil Nadu with a sample size of 370 units.
2. The usage of the judgment sampling technique for the data collection may limit the findings of the study.
3. The individual respondents may be biased, and their opinions may change over the course of time.

1.15. Organisation of the Study

The research report of the study was organised and presented in eight chapters along with the bibliography and its related annexures as follows:

i. Chapter I: Introduction
ii. Chapter II: Review of Literature
iii. Chapter III: Conceptual Framework and Model Development on Challenges in Effective Utilisation of 108 Emergency Ambulance Services
iv. Chapter IV: Overview of 108 Emergency Ambulance Services in Tamil Nadu
v. Chapter V: Challenges of 108 Emergency Ambulance Pilots and Emergency Medical Technicians
vi. Chapter VI: Brief Profile of the Villages Covered in the Study and their Perception on 108 Emergency Ambulance Services
vii. Chapter VII: Data Analysis and Interpretation
viii. Chapter VIII: Summary of Findings, Recommendations and Conclusion
ix. Bibliography
x. Annexures

CHAPTER - II

REVIEW OF LITERATURE

CHAPTER II
REVIEW OF LITERATURE

2.1 Introduction

Rural life may be deemed as scenic, serene and calm. However, in reality, there are several challenges and issues in its realm. One such issue is the accessibility to modern-day facilities and infrastructures which is generally underdeveloped in rural geographies compared to urban areas. Johansson et al (2017) argued that rural people have to cross distances far and wide to access specialist health care. Fleet et al (2020) conducted research on emergency health care services to rural people. The study revealed that the challenges of rural people in accessing emergency healthcare services include lack of infrastructure, limited access to specialists, lack of representation and poor efficiency. Mohan and Kumar (2019) stated that beyond considerable efforts taken by the Government of India to bridge the gap between the rural and urban, the rich and poor in India, the differences amongst these regions and statuses are still highly prevalent. Chanta et al (2014) documented the disparities between urban and rural health care services. The researcher proposed covering location models to provide better emergency health care services to the rural and semi-rural population.

Strasser (2003) discussed that the countries with major rural populations only provide utmost interest to urban healthcare services. He concluded that the global rural health problems can be addressed only with a joint collaborative effort between international and national bodies along with the health professionals and rural people. Weisgrau (1995) stated that the provision of adequate access to health care services in rural America continues to be a critical public policy concern. The research suggested that continued policy research and evaluation of rural healthcare needs are essential to plan for providing quality healthcare services at affordable cost.

In this study, the researchers look into the challenges faced by the rural citizens of Tamil Nadu in accessing the 108 Emergency Ambulance Services which is run on a public-private partnership and fully funded by the State Government of Tamil Nadu. The research work tries to understand the varied dimensions involved in the usage of these services by the rural population of Tamil Nadu. The researchers have acronymised the dimensions as AMBULANCE which includes **A**wareness, **M**edical Service, **B**ehaviour, **U**tility, **L**ocation, **A**ccess, **N**etwork, **C**onvenience and **E**mergency. Further, they propose a 5C model to address the issues faced by the rural topography in the consumption of the 108 Emergency Ambulance Services.

The literature review chapter discusses the varied scholarly discourses from international and domestic academic circumferences. The researchers have examined the literature pertaining to the overall condition of the Health Care System and Health Status of Tamil Nadu, the global perspectives and conditions of emergency ambulance services and finally, the research conducted on the 108 Emergency Ambulance services. These reviews provide a context and understanding to the readers on the subject of the current research discussion. Finally, the chapter clearly underlines the research gap which is the focus and remedy of the challenges faced by the rural population in the effective utilisation of the 108 Emergency Ambulance Services in Tamil Nadu.

2.2 The Healthcare System in Tamil Nadu

The healthcare system in Tamil Nadu is one of the most renowned in India. The quality and affordability of health care are prominent, and many from other states travel to Tamil Nadu for their medical needs. The public health system of Tamil Nadu is the most efficient in comparison to the other regions in the nation. Ramani et al (2019) claim that the drugs provided at the public health facilities of Tamil Nadu are of higher quality and the health care in Tamil Nadu is value efficient and cost-effective. Within India, Tamil Nadu is the only state which manages an individual department for providing public health at a primary care level. For every 5000 of the population of the state, there is a health sub-centre with an auxiliary nurse-midwife. There is a public health centre headed by at least 2 doctors for 30,000 people in Tamil Nadu and finally, there is a community health centre for the level of 1 lakh people of the state. The state imposes a public health training program for doctors to work in the health department, which is not compulsory in the other states of India. (Gaitonde et al, 2019)

2.2.1 The Healthcare Reforms in Tamil Nadu for Rural Topography – An Overview:

Tamil Nadu has been a pioneer in enacting the Public Health Act in 1939 over eight decades ago and initiated the provision of health care at a district level. Further, from the 1980s the Government of Tamil Nadu has made a series of development in rural healthcare infrastructures with the employment of rural health workers. The political commitment and leadership of Tamil Nadu despite any party being elected is the reason for the tremendous development witnessed in its public health care (Parthasarathy and Sinha, 2016). In 1985, the Rockefeller Foundation from the USA established a research project “Good health at low cost” to analyse how certain regions are able to provide low-cost health care services to their users. From the research conducted from 2009-2011, it was identified that Tamil Nadu is one of the regions in the globe which provides health care services at a lower cost to its citizens in comparison to its neighbours. The research observed that Tamil Nadu only spends about 1%

of its GDP on the health sector, however, it was able to achieve substantial improvement in the health of its people. (Balabanova et al, 2013)

In 2005, the government of Tamil Nadu established the Tamil Nadu Health Systems Project (TNHSP) to focus on the development of the lower-income groups within Tamil Nadu. This project aimed at policymaking for the improvement of health care for the poor in the urban and rural settings of Tamil Nadu. The project was approved by the World Bank, and it continues to function efficiently (Parthasarathy and Sinha, 2016). The Tamil Nadu government implemented the National Rural Health Mission (NHRM) in the year 2005 to improve the health facilities in rural areas. This was part of the state government's effort in accomplishing in Millennium Development Goals (MDGs) by the year 2015. With the aid of this program, Tamil Nadu has been able to reduce its maternal and infant mortality rate to its expected target. The state of Tamil Nadu has stood out as an example by providing quality services, innovative and new health programs and roundabout clock health care services to the people of Tamil Nadu and other Indian citizens (Kumutha et al, 2014).

2.2.2 The Challenges in the Public Healthcare System in Tamil Nadu:

Even though the public healthcare system ranks one of the topmost in India, there is a threat of the state losing this status. Kanmoy (2017) highlights that many specialists medical posts in community health centres are vacant in Tamil Nadu. Several primary health centres in Tamil Nadu function without a female doctor. The state also has witnessed a shortfall in the male and female health workers in primary and community health centres. Hence, the author argues that even though the facilities are there, the lack of management forces people to choose private medical care in lieu of public health care.

Parthasarathy and Sinha (2016) argue that although the healthcare system in Tamil Nadu has proven its efficiency in many ways, the deficiencies within the system has aided the movement of people into the realm of privatised health care facilities. The alarming development of the private sector in health care has led to the widening of the health status gap between the poor and rich and the urban and rural. Bajpai et al (2008) found that Tamil Nadu is better than the northern states of India in comparison to supply of electricity and water, number of medical infrastructures and medical professionals in healthcare facilities. However, they observed a shortage of the doctors, medical specialists and nursing professionals. Hence, the appointment of professionals in the vacancies and improving the quality of services provided is pertinent according to the authors.

Ramani et al (2019) argue that even though the medicines provided by the public health department in Tamil Nadu are of higher quality, only 10% of the services provided rural public

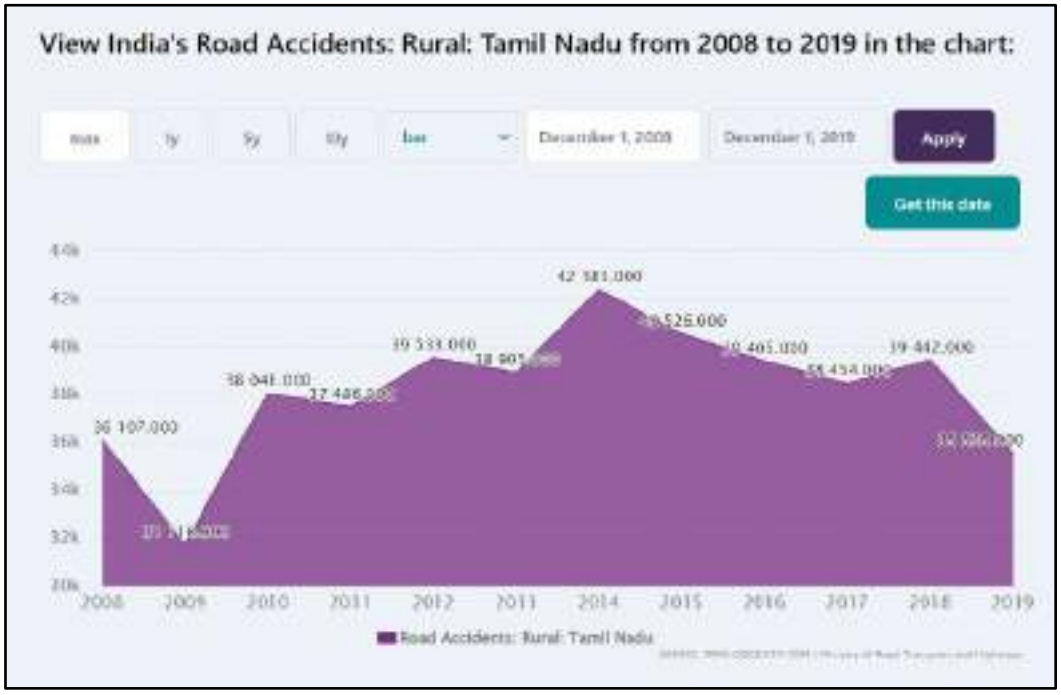
health sector is being consumed. The chapter will next discuss the issues which commonly affect people from rural areas and the medical emergencies which cause a necessity for an ambulance to be transported to medical facilities. Road accidents, snake bites, dog bites and COVID-19 emergencies are some of the major medical issues that affect people from rural areas in Tamil Nadu. However, the medical emergencies of rural people are not restricted to the following.

2.2.3 Road-Related Medical emergencies in Rural Tamil Nadu:

Road safety is an important aspect of life and road accidents are such a serious health issue. The reason for this is because it is an issue that cannot be tackled only by the health sector and needs other government sectors and public awareness to prevent and reduce accidents on the road. The riders of scooters, bikes, cycles and walkers are prone to more danger on the road. They are considered vulnerable road users as they are easily exposed to road accidents which could be fatal. Consumption of alcohol is one of the main reasons for the occurrences of road accidents in Tamil Nadu (Radjou and Kumar, 2018).

Figure: 2.1

Road Accidents in Rural Tamil Nadu from 2008 to 2019



Source: www.ceicdata.com

The study by Joseph et al (2018) shows that two-wheeler accidents are the highest amongst Tamil Nadu. The male gender is prone to higher risk than females in this aspect. The men dying in road accidents in high numbers poses a great socio-economic threat to the families in Tamil Nadu (Akkayasamy and Paneer, 2020). Hence, the authors (Joseph et al) suggest the

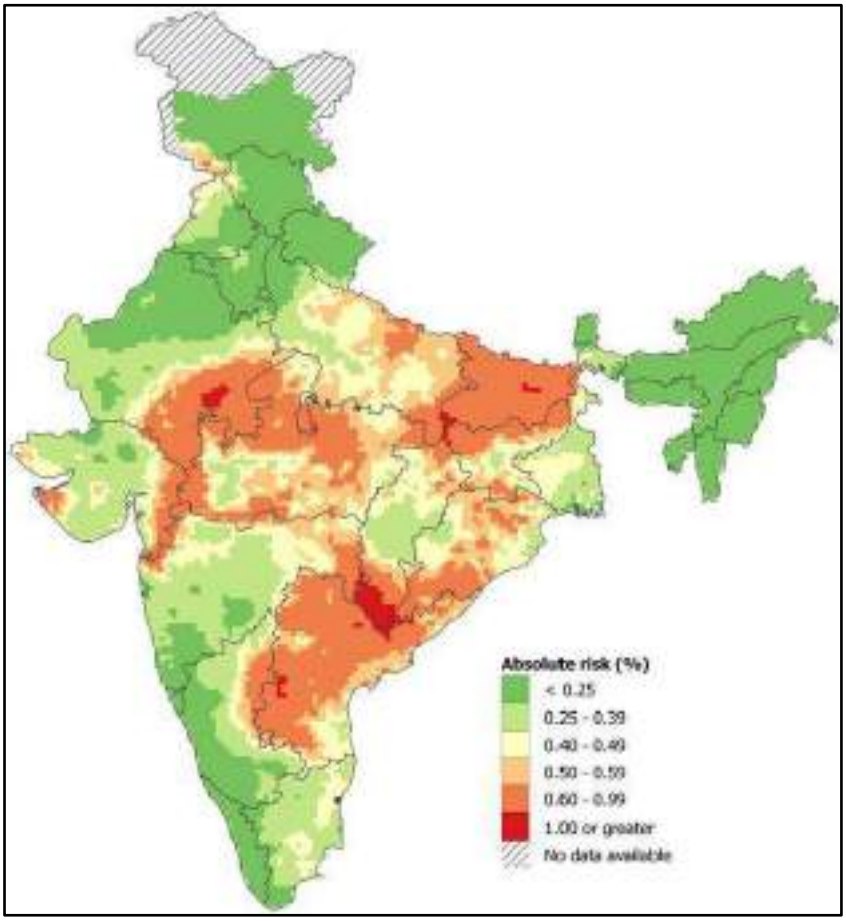
government strategize awareness through education, development through engineering, laws and policies to create enforcement and better health facilities for emergency care to reduce road accidents. Road safety is also an important concern of emergency ambulance services, as it poses a threat to the service also. Appropriate road etiquettes leads to reduced road-related emergencies and the safe transport of patients in ambulances during medical emergencies.

2.2.4 Snakebites in Rural Tamil Nadu

Like road accidents, snakebites is also a grave issue in Tamil Nadu and India, as they are life-threatening in several cases. And this phenomenon affects the rural population as they live in closer proximity to natural habitats and work in plantation fields. It is observed that the popular snake bites in Tamil Nadu are by vipers, cobras and krait genera and bites by sea snakes are seldom. The issues faced by the government in regard was overcome through the policies and programs by the Tamil Nadu Health Systems Project. This included training of health workers, timely medical attention-seeking compartment and betterment of medical facilities etc. (Chinnasamy et al, 2015)

Figure: 2.2

Spatial Distribution of Snakebite Mortality Risk in India for 2004-13



Source: Suraweera et al (2020)

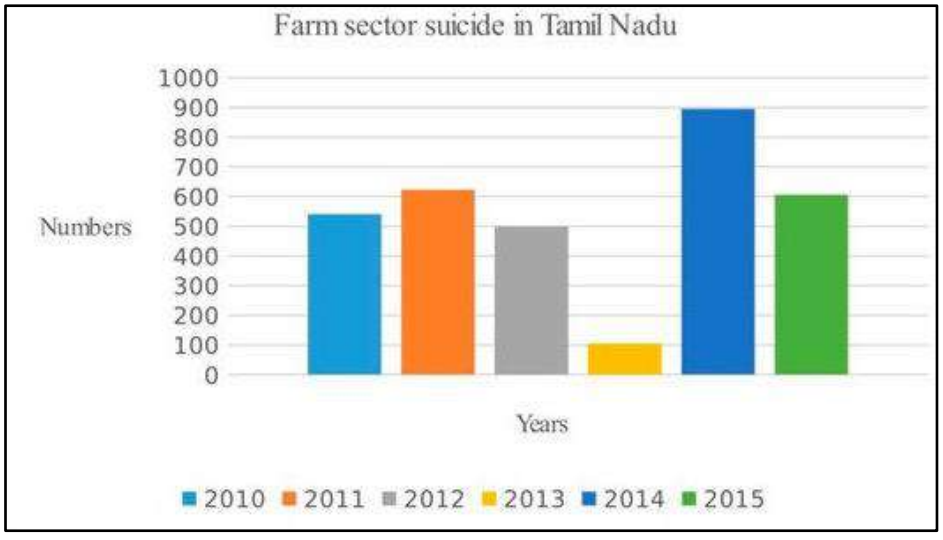
Samuel et al (2020) consider Snakebite Envenomation (SBE) to be one of the most overlooked diseases which affects poor people living in rural settings. The authors argue that Tamil Nadu is one of the states in India which is seriously affected by the SBE disease because of the sprawling rural landscape and the majority of its inhabitants participating in agriculture and farming based occupations. Vaiyapuri et al (2013) reiterate that the medical facilities specific to snake bites are lesser in Tamil Nadu, and if victims who are mainly the rural poor get treated at private facilities, the socio-economic impact is grave. The authors urge the government to better their facilities in this regard, to help snakebite victims.

2.2.5 Farmers Suicide in Rural Tamil Nadu

Das and Pradip (2021) emphasise the difficulty in the agriculture and farming business. The challenges faced in the occupation makes suicides of farmers rampant. The psychological stress caused for farmers due to debts, failure of crops, weather changes like lack of rain or flooding etc force farmers into depression which leads to suicide in Tamil Nadu (Murugan and Sivagnanam, 2020). Santos et al (2021) observe the harsh realities faced by the farming community, they consider poverty, lack and inaccessibility to education, exploitation of the community, violence within rural life and other fears and insecurities that lead farmers from rural areas into mental health problems. The authors reveal that pesticide poisoning is the common method used by farmers in the attempt of suicide. This poses a severe medical emergency situation within the farming communities. Mariappan and Zhou (2019) reconfirm that farmers use pesticides to commit suicide. The authors reiterate that Tamil Nadu has the highest number of farmers' suicides in Southern India.

Figure: 2.3

Farm Sector Suicide in Tamil Nadu



Source: Mariappan and Zhou (2019): Accidental Deaths & Suicides in India reports 2015

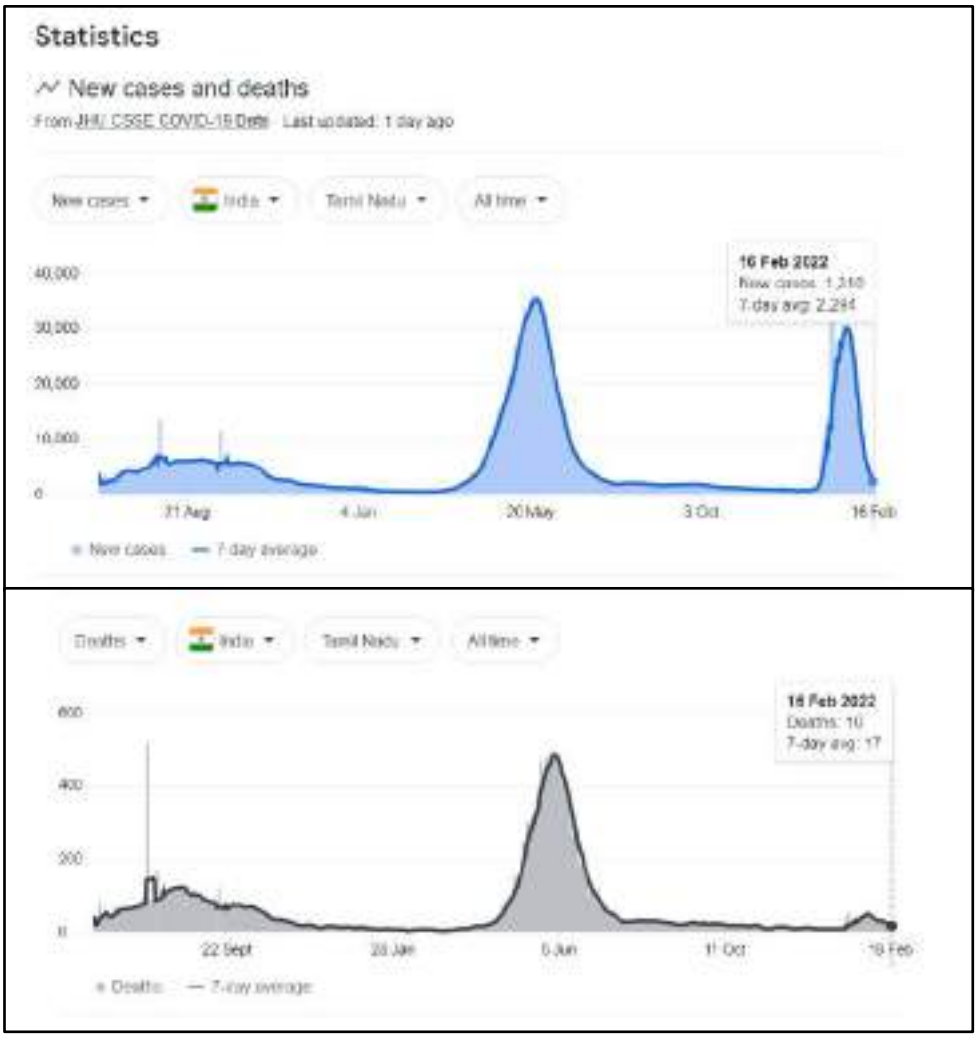
2.2.6 Rabies Control in Rural Tamil Nadu:

Rabies is a disease that is viral and fatal. Dog bites cause severe medical emergencies and require medical attention quickly. Globally it is observed that 50% of the deaths due to rabies are in India. However, from India, Tamil Nadu is the only state which has established a multisectoral rabies control program at a state-wide level. The policy is possible through health surveillance, control of the street dog population through sterilisation and vaccinations. Awareness programs to people also positively impacts rabies control in the state. The state spends extensively on this mission. (Abbas et al 2014, Abbas et al, 2011)

2.2.7 COVID-19 in Rural Tamil Nadu:

Figure: 2.4

Statistics of New Cases and Deaths of COVID-19 in Tamil Nadu From 21st August 2021 to 16th February 2022



Source: JHU CSSE COVID-19 Data and Our World in Data

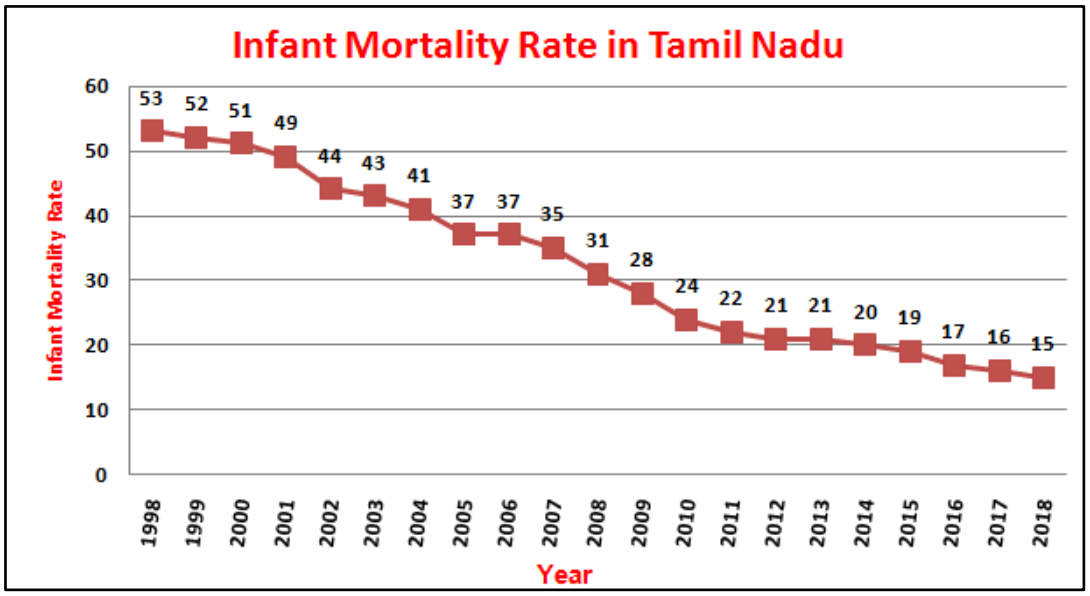
Corona Virus (COVID-19) has become a factor that has shaken the world in all aspects. Isaac et al (2021) have studied the effects of COVID-19 on the rural inhabitants of Tamil Nadu. The authors of the study provided statistical inferences based on the data collected from Vellore in Tamil Nadu. The study has observed that people from rural backgrounds and lower-income groups are severely affected by the virus. Hence, the main aim of this study is to make sure that proper medical help and inclusion of the rural population during the vaccine rollouts is made possible. COVID-19 was responsible for the exposure of the lack of enough medical facilities, ambulances, hospitals etc., all over the world. Even though Tamil Nadu has handled the situation quite well, the coping tactic was an extreme challenge for the public health department.

2.2.8 Pregnancy in Rural Tamil Nadu

Veena and Aravindhar (2021) highlight the survey of the World Health Organization (WHO) which describes the state of global pregnant women. The survey reports that many pregnant women die at every stage of pregnancy due to several reasons such as miscarriages, prenatal and postnatal complications. Globally, this is prevalent in rural communities.

Figure: 2.5

Infant Mortality Rate in Tamil Nadu



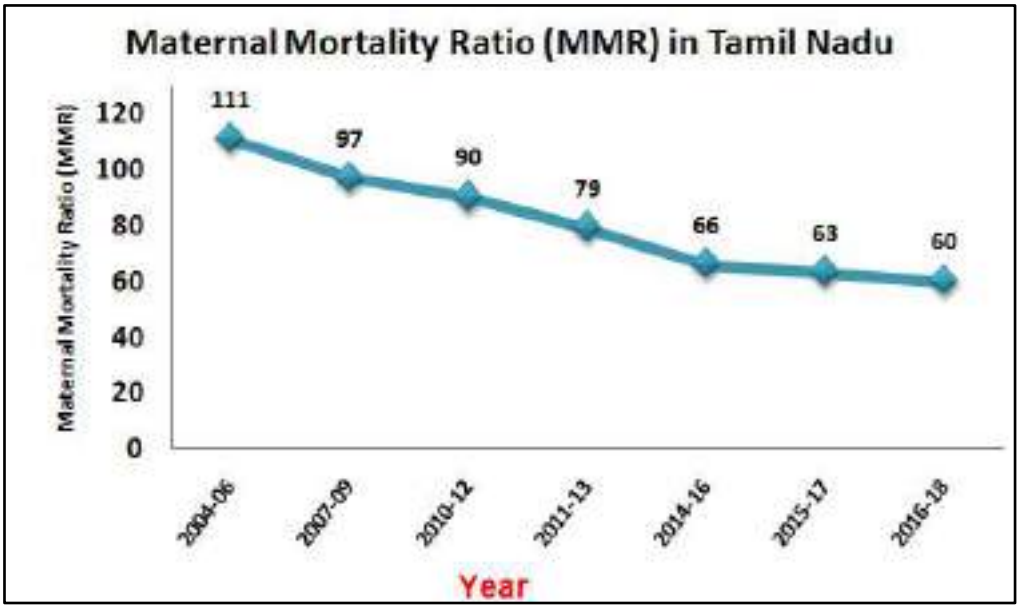
Source: Ministry of Health and Family Welfare

Gopalakrishnan et al (2019) discuss the health-seeking behaviour of women from rural areas in Tamil Nadu. The study was conducted in the Kancheepuram district in Tamil Nadu. The author highlights that if proper care and planning is not in place, it could be hazardous to both the health of mother and child. The author identified that the maternal literacy amongst the mothers-to-be was quite poor. This situation poses a threat to the life and health of the

pregnant mother and her child. Hence, it is important that government takes initiative in providing education to rural women. However, it is important to note that the birth mortality and morbidity rates are in steady decline in Tamil Nadu. Srivastava and Joseph (2019) underline that Tamil Nadu along with state Kerala have achieved 99.8 percentage of births in medical institutions such as hospitals, clinics, health centres etc from 2010 to 2013. Accessing medical facilities for birth reduces the infant and maternal mortality rate drastically.

Figure: 2.6

Maternal Mortality Ration (MMR) in Tamil Nadu



Source: Ministry of Health and Family Welfare

2.2.9 Domestic Accidents in Rural Tamil Nadu

Kumarasamy and Prabhakar (2016) have analysed the domestic accidents which occur in rural areas of Tamil Nadu. The authors observe that the handling of sharp objects causes domestic accidents. Most accidents were not minor or mild. The data was collected from 200 households distributed in 10 villages of Tamil Nadu. The authors claimed that even though these injuries were mild, the medical treatment cost much for the village dwellers. Stalin et al (2013) also emphasis that domestic injuries cause a financial burden for households. Joseph and Bagavandas (2019) highlight that domestic injuries are more prevalent amongst the elderly in Tamil Nadu. It was noticed that fall and fractures was quite common amongst older people. The authors also found that injuries in domestic circumstances are caused by alcoholism, burns while cooking or handling fire, lack of proper lighting etc. Further, their study reported that the accidents were more amongst the poor and downtrodden section of the population.

2.2.10 Oral Health in Tamil Nadu

Finally, the researchers discuss oral health in Tamil Nadu, as it becomes a neglected area in health care. Veerasamy et al (2018) have identified that there is a lack of academic contribution in oral health and hygiene amongst students from private and government-run schools in Tamil Nadu. Oral health gets neglected as there is only means to concentrate on academics or major health issues. Hence, the authors recommend policymakers and advocates to bring change concerning oral health education. In the next section, the researcher discuss the situation of gender and health in Tamil Nadu to provide clarity in health status of Tamil Nadu.

2.3 Gender and Health in Tamil Nadu

Gender plays an important role in health status. In general, women are affected by discrimination, abuse, harassment, inaccessibility etc. which affects their health status. Even though modernity in thoughts is popular in Tamil Nadu, it is still steeped in casteist and patriarchal mindset which affects the lives of women in different factors. And the gender-based discriminations within rural communities are even more strife. Hence, it is important to consider the discriminative health and medical issues faced by women and transgenders in Tamil Nadu.

2.3.1 Wife Abuse in Tamil Nadu:

Chokkanathan (2012) identifies the reason why women in Tamil Nadu face abuse and harassment. Alcoholic indulgence by their spouses, violent behaviour by parents, emotional blackmailing and lack of discouragement of abuse against women are the primary reasons for the gender-based violence against women. The abuse of women was found to be at 25% through the study conducted by the author and it is the same percentage in both urban and rural areas. Hence, it is the responsibility of the government to wade this from society through the health and education system. Ram et al (2019) reiterate that women are abused for the reasons of dowry, honour killings for choosing their own partners, physical violence within families etc in Tamil Nadu.

2.3.2 Female Infanticide in Tamil Nadu:

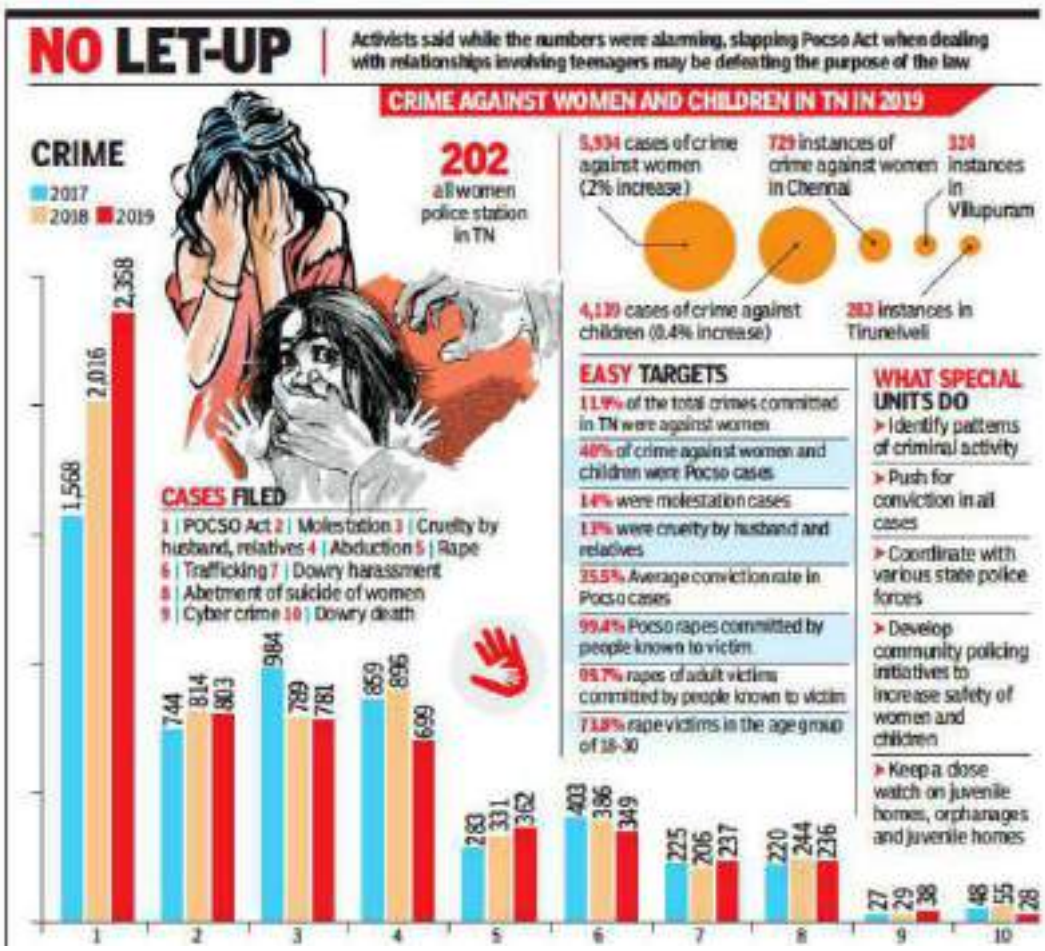
Patriarchal casteism which has crept within Tamil society has made the lives of several women miserable. The practice of the dowry system has made it difficult for families to get their daughters married and as families save for dowry. As families economise on saving for dowry and marriage expenses, the education of women is diminished which crushes their development, career prospects and empowerment. Diamond-Smith et al (2008) have observed that there is a preference to have sons in Tamil Nadu than daughters. The economic burden

imposed on families creates this behaviour of daughter aversion. Thus, the practice of female infanticide still prevails in Tamil Nadu, especially in certain rural parts.

Srinivasan and Bedi (2008) have identified that there is a disparity in the sex ratio with lesser females in more than half of the districts of Tamil Nadu, a large proportion of the elimination happens before birth and the aversion of having daughters are found within all socio-economic groups of the state.

Figure 2.7

Crime Against Women and Children in Tamil Nadu in 2019



Source: Times of India

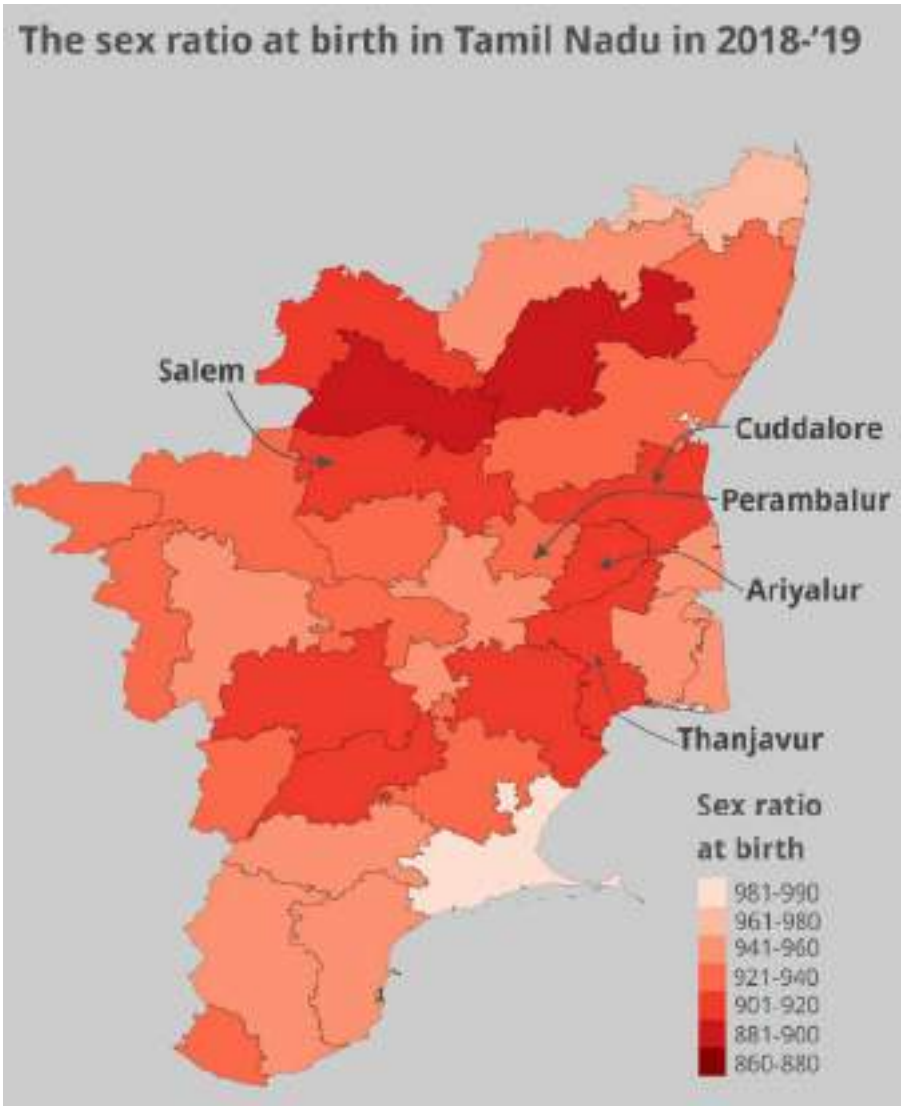
2.3.3 Transgenders and Health in Tamil Nadu:

The inequalities and injustices faced by the transgender community are unimaginable. Similarly, the Transgender community face inequality in health also. They face continual problems from their childhood until their death. Tamil society rejects members of this community and does not recognise them as part of the society. Hence, it becomes difficult for them to access the health care system much like education, housing etc (Ashokan and Velusamy, 2017). Chandran and Kuttappan (2019) describe that the health care system is not

provided appropriately to the transgender community. They are a community that go through a lot of pain and agony; hence it is important to provide them with physical and mental health support. The authors urge governments to bring better policies and programmes for the Transgender community living in Tamil Nadu.

Figure 2.8

The Sex Ratio at Birth in Tamil Nadu in 2018-2019



Source: Ministry of Health and Family Welfare

2.4 Emergency Ambulance Services: Importance, Requirements and Functions:

The emergency ambulance services have a significant purpose in saving people's lives. There are certain requirements and functions that they have to cover in order to fulfil the purpose. The literature around those elements has been highlighted below for better understanding of the research work.

2.4.1 Prehospital Care:

Golling et al (2022) express the importance of prehospital care by the medical attenders in the ambulances before reaching the patients safely to the hospital or medical facility. The quality of the communicated information and interprofessional relationship amongst medical coordinators was used as a key measure to conduct the research. This study was conducted in the German University hospital. Jafari et al (2019) evaluate the prehospital care provided in the ambulance during transportation of patients in Tehran. The study underscores the prominence of providing prehospital care in the ambulance by paramedics, especially when there are delays due to distance and heavy traffic.

2.4.2 Driving Skill

Becker and Hugelius (2021) characterise the importance of driving in an emergency ambulance service. The research proves there is a significant relationship between driving pattern, speed taken, navigation and communication of the driver with the comfort, safety, reducing the time taken to reach medical facility etc. Hence, it is important that the driver is skilful and has competence in attending to the medical needs of patients and managing their own stress.

2.4.3 Mediating Role

Ratiu et al (2021) emphasise the mediating role of emergency service medical professionals and the cruciality of not hiding knowledge or information about the patient. As they are the first contact of a person with the patient, they will have to provide all necessary information for saving the life of the patient or treating them appropriately. The mediating role can be well worked only if the emergency medical service providers are trained in health care, communication and ethics.

2.4.4 Response Time

Arcolezi et al (2021) perceive the response time of an ambulance to be one of its vital functions in providing services for patients during medical emergencies. The study conducted in France explored technologically advanced solutions driven by machine learning to calculate ambulance response time. Majlesinasab et al (2022) observe the response time as an essential factor in emergencies. There are two components within the time factor of an emergency ambulance service: a) Activation time: the time taken to answer calls from patients and choosing the ideal medical support to be provided is called the activation time and b) Travel time: the duration is taken for the ambulance to reach the patient and transport them to the medical facility.

2.4.5 Modern Facilities

The world is moving with time and technology has taken over every aspect of human life. Hence it would be appropriate to include the benefits of technology in emergency ambulances also to improve the efficiency and effectiveness of their services. Sumia and Ranga (2018) emphasise the importance of an intelligent traffic management system in ambulances to avoid wastage of time and save lives. This system helps to simulate the best route for the ambulance to reach the medical destination. Vijaykumar et al (2017) suggest that ambulances need to have efficient communication systems. Even mobile phones can be used as good communication devices and they will provide a cost-effective solution to pass information from the patient to the hospital by the EMS professionals. Dumka and Sah (2019) opine that the introduction of technology in ambulances are critical in the current scenario. Remote healthcare, cloud computing, smart ambulances etc. will be highly useful in providing better services to people during medical emergencies.

2.4.6 Telemedical Consultation via Video Conferencing

Johansson et al (2017) discourse the usefulness of video conferencing for health care and telemedical consultation for rural inhabitants as they live far from access of suitable medical infrastructures. Melby et al (2014) suggest the usage of video conferencing by medical attendants to receive information from doctors to perform emergency medical procedures for patients. The authors research the use of mobile phones in these situations, as there might be a quality difference and how they can be optimally used for video conferencing during emergency situations. Vicente et al (2020) emphasise that video support can enhance the assessment and diagnosis of patients by paramedics to doctors. This provides a positive impact on the health conditions of patients.

2.5 Emergency Ambulance Services and Rural Areas:

The research work about Emergency Ambulance services in rural areas are dearth globally. The key points noted from the study are discussed below to provide more insight and throw light on the research gap even more. The efficiency of ambulance services functioning in rural areas can be well understood and improved with the below-mentioned options and alternatives prescribed by scholars.

2.5.1 Transport Alternatives

Distance and time become the major threat when it comes to medical emergencies in rural areas. If there is no medical facility nearby, it will take a longer time for the patient to be reached by ambulance and transported to the medical facility. Hofman et al (2008) have explored the use of motorcycles in Malawi as an alternate to car/van ambulances in rural areas

to overcome delays during pregnancy emergencies. They placed three motorcycle ambulances in three rural centres and observed the results from the action. The overall study showed that time delays were reduced by 2-4.5 hours per trip, the cost of purchasing and running a motorcycle ambulance was 19 times and 24 times cheaper than a regular ambulance. Hence, the authors suggest that countries with poorer resources and financial conditions can use this method to save time and cost in rural medical emergencies. Bhopal et al (2013) consider the effectiveness of motorbikes to be used as ambulances in rural areas as they can be easily manoeuvred if the paths and roads are poorly constructed or damaged.

Tarek et al (2016) have identified the use of rickshaws as a key transportation vehicle in Bangladesh. However, when the electric version was introduced, the government had to ban them as they were overconsuming power. Hence, the introduction of solar vehicles to be used as ambulances, provide a solution for saving power and also transporting rural inhabitants to hospitals in time. Sasada (1994) has shared comparative notes on using land and helicopter ambulances for rural medical emergencies. Land ambulances are perfect from a cost perspective; however, helicopters can save an exorbitant amount of time. Hence, helicopters can be kept in stand by and used for extremely critical cases based on distance, time and necessity. Bledsoe et al (2006) conducted their study in the USA and suggested the control of utilisation of helicopters for non-life-threatening medical emergencies. In the west, helicopters are used even for normal cases, so it is only fair if in developing countries in India, they are used for severe and critical cases.

2.5.2 Hospital Choices

Gleeson and Duckett (2005) have identified that the emergency ambulances pass several small hospitals in the rural areas of Australia. These hospitals suffer from financial adequacy as they do not receive many patients. Hence, if the emergency ambulance services are diverted to these hospitals, it will be mutually beneficial for both the patient and the hospital. As it will be a solution for both time and money. Hence, it can be understood that paramedics need to have a knowledge of hospitals in rural areas and not just rely on the popular hospitals in the region. This will considerably help patients reach a medical facility quicker.

2.6 The 108 Emergency Ambulance Services:

Ambulance services are a crucial dimension within the health sector. They are responsible for the timely transportation of people with health issues and medical emergencies to hospitals, clinics and other medical facilities. In India, 108 ambulances are considered the most significant and popular ambulance service amongst the citizens of the nation (Vasudevan et al, 2016). The following literature discusses the varied aspects of the 108 ambulances,

however, most of the researchers conducted restrict themselves to the Northern States of India. The research studies conducted exploring the services of 108 ambulances in Tamil Nadu are dearth. Further, the studies do not extend to compare the services in rural areas with the urban scenario. The current research pertains to exploring the challenges faced by the rural citizens of Tamil Nadu ineffectively using the services of the 108 Emergency Ambulance Services.

2.6.1 The 108 Emergency Ambulance Services in India:

The scholarly articles about the 108 Emergency Ambulance Services in the Northern states of India are discussed in this section. The only states included from the South of India in these reviews are Andhra Pradesh and Telangana. Kamireddy et al (2016) report the ineffective routing algorithm of the 108 Ambulances in reaching patients. The authors have conducted the study in the state of Rajasthan, and they provide recommendations through clustering techniques for the optimal utilisation of the existing resources. They propose 5 approaches in placing the ambulances in clusters which will aid them to reach patients in a reduced time. K-mean Algorithm, Weighted K-mean, Density-Based Cluster Algorithm, Directly Reachable Clustering, Modified Weighted Men were the different approaches used in the optimal positioning of the ambulances to avoid wastage of time in reaching patients. The real-time testing of these approaches has proved in gaining time of Ambulances in reaching both patients and hospitals.

Singh et al (2016) focus on the role played by 108 Ambulances during pregnancies. Pregnancy and childbirth need to be dealt with appropriate medical support as it is a high-risk period of time. The authors have collected the data from the states of Andhra Pradesh, Assam, Chhattisgarh, Himachal Pradesh, Gujarat and Telangana. They emphasise that maternal deaths can be avoided with medical services provided by skilled professionals at the right time. The study concludes that only a small fraction of pregnant women from these states effectively used the 108 Emergency Ambulance services and they recommend further studies to augment the awareness on the usage of the services. Singh et al (2018) also compare the usage of 108 Emergency Ambulance Services by pregnant women in Andhra Pradesh and Himachal Pradesh. The study accounts for the number of pregnant women who used, did not use after assigning of the 108 Emergency Ambulances and the number of cases in which ambulances were not assigned. The authors strongly recommend upgrading the services to reduce the non-use of emergency ambulances. And they opine it is crucial that services reach cases with life-threatening conditions.

Rao et al (2019) highlight the effectiveness of the 108 Ambulance service in Shimla, the capital city of Himachal Pradesh. In contrast to the previous studies, the authors have

positively accounted for the effectiveness of the service. The study has recorded the demographics of the patients who have used the services within the study period. The people of the state have defined the services of 108 Ambulance as reliable, efficient, timely and caring. Gnanasekar and Raj (2018) descriptively analyse the technological advancements and the operating model incorporated in the 108 Emergency Ambulance service. The authors theoretically explain global models of "the golden hour and the platinum ten minutes" which is crucial for emergency services. They also suggest the inclusion of audio-video conferencing to help rural patients. They further underline that even though the emergency services in India are technologically advanced, however, there is still room for improvement when compared to their western counterparts.

Rajasulochana and Maurya (2018) have revealed that non-adherence to stipulated response time in delivery of the service, poor condition of vehicles, frequent unrest among contracted employees and insufficient supervision are the major problems of 108 Emergency Ambulance Services in India. Janumpally et al (2019) discuss the training of medical attendants to carry out the intravenous procedures for cardiovascular patients in the 108 ambulances. This is to provide pre-hospital care for patients during emergency situations. The data for the study was collected from the states of Assam, Gujarat, Himachal Pradesh, Karnataka, Meghalaya and Telangana. The study showed that one in four patients were cannulated during their transportation to a medical facility.

Modi et al (2018) observe the levels of awareness and assess the opinions of the people of Maharashtra on the 108 ambulance services through the aid of questionnaires. 76.2% of the sample population were aware of the services, hence the authors urge the institutions involved to take measures to increase the levels of awareness amongst the people. Pandey and Rajan (2009) account for the responsiveness of the 108 ambulances in the state of Gujarat. The study decisively analyses the non-transportation of patients due to issues of specificity of critical and non-critical cases. However, it can be perceived that the services may have bettered as the study was conducted a decade ago.

Tiwari et al (2020) emphasise the importance of reaching medical facilities on time during health crises and medical emergencies. Further, the significance of medical attention during transportation in an ambulance. Inadequacies in these facilities, infrastructures, knowledge and awareness amongst the public, health workers are common issues in developing countries. The authors throw light on the Indian Government's policies and programs such as the Reproductive and Child Health Program, National Rural Health Mission, Janani Suraksha Yojana. 150 State Run Ambulances including 108 ambulances were studied for a period of 1

month in Rajasthan. The quality of patient care in ambulances and services provided by emergency medical technicians were assessed. It was found that the majority of the ambulances and service providers met the expected standards.

2.6.2 108 Emergency Ambulance Services in Tamil Nadu:

The research conducted in Tamil Nadu on the 108 Emergency Ambulance is limited. And it is specific to dental traumas and traffic safety issues. The review of the literature demonstrates the lacuna for the current study. Chrishantha et al (2019) detail their study to the level of knowledge and awareness of the service providers of the 108 Ambulance Emergency Service pertaining to dental trauma cases. The study was carried out in the Kancheepuram district of Tamil Nadu; however, it did not specifically cover the rural areas nor did the study dive into the broad categories considered for this current study. They found that the service providers had limited knowledge when it came to dental medical emergencies. Hence, the study recommends awareness programs and training on dental problems and traumatic issues.

Vasudevan et al (2016) have identified that there is no central ambulance system that prevails in India. Yet, they have observed that the 108 ambulance which runs on a public-private partnership is a popular service in the country. The study investigates the relationship between 108 ambulances and traffic safety prospects. The study observed that the awareness of the services by 108 ambulances was lower amongst the public and the majority of the traffic accident medical emergencies were transported using private vehicles. The authors suggest that the services provide awareness through road safety programs for the public which will reduce accidents, road-related medical emergencies and the delay of ambulances due to traffic.

2.7 Research Gap:

The geographical outlook and the variables considered in the reviews provide clarity on the research gap. The current study critically analyses the effective utilisation of the 108 Emergency Ambulance Services on varied parameters. The parameters include awareness of the service, medical services provided, the behaviour of drivers, paramedics and telephone operators, the utility value of the service, location gap between residence and medical care facilities (hospitals, clinics or health centres), accessibility, networking between 108 Ambulance services and health care infrastructures, the convenience of usage and finally, the emergency situation of the person. Based on the data collected with the above variables, the study aims at providing a comprehensive approach in addressing the issues faced by the rural population of Tamil Nadu in using the 108 Emergency Ambulance Services.

In the next chapter, the researchers will discuss the varied concepts and theories used in the study. The conceptual framework chapter functions as a map for the readers of the research study to navigate through the diverse ideas of the research work.

CHAPTER - III

CONCEPTUAL FRAMEWORK AND MODEL DEVELOPMENT ON CHALLENGES IN EFFECTIVE UTILISATION OF 108 EMERGENCY AMBULANCE SERVICES

CHAPTER III
CONCEPTUAL FRAMEWORK AND MODEL DEVELOPMENT ON 108 EMERGENCY AMBULANCE SERVICES

The conceptual framework chapter acts as a mapwork in aiding the readers to steer through the different concepts, theories and ideas present in a research study. The researchers have meticulously crafted this chapter to provide the readers with an overview of the health care system in India, the status of rural health care in India, the health care system in Tamil Nadu, the status of rural health care in Tamil Nadu, the policies and programmes to promote health care in India and Tamil Nadu, the definitions and meanings of emergency health care, emergency medical services in India and Tamil Nadu, 108 emergency ambulance services, 108 emergency ambulance services in Tamil Nadu, challenges in availing 108 emergency ambulance services and finally the explanation of the models developed by the researchers on 108 emergency ambulance services.

3.1 Heath care System in India – An Overview

Indian nationals can avail both outpatient and inpatient care for free at medical facilities established by the government. The health care delivery in India is decentralised and the responsibility of providing health care services to the people are delegated to the states. Due to the shortage of health workers and medical suppliers at government hospitals, several patients go to private health care facilities for their health needs, and it costs them quite a lot. However, the people from lower-income strata are able to access secondary and tertiary health care for free from private health care centres and hospitals through the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (The National Health Protection Scheme).

The Indian constitution urges the government to provide healthcare to all the citizens of the nation. Hence, every state in India is obliged to give universal access for all to the health care services at free of cost. However, in reality, the problem is that the public health care system is not funded enough to provide services to all. The government has taken initiative to provide health insurance for certain groups of the population such as factory workers and government employees. There is several private insurances companies provided health insurance plans, but the subscriptions to them are dearth. The government of India introduced the Rashtriya Swasthya Bima Yojana (National Health Insurance Program) in 2008, and within 8 years, the scheme reached 4.1 crore families in India. Similarly, this program is also underfunded.

Alternate and traditional medicines such as Ayurveda, Homeopathy, Naturopathy, Siddha, Unani and Yoga are promoted by the Central Government of India. In 2017-2018, it

was reported that only 37% of the country's population were covered by health insurance as the government insurance schemes have been futile and the private insurances are expensive and undersubscribed. Then, the blockades in India's public health care such as lengthy waiting duration at medical facilities, the perception that health care services are lower in quality at public health services and the shortage of medical staff pose as a threat to its development.

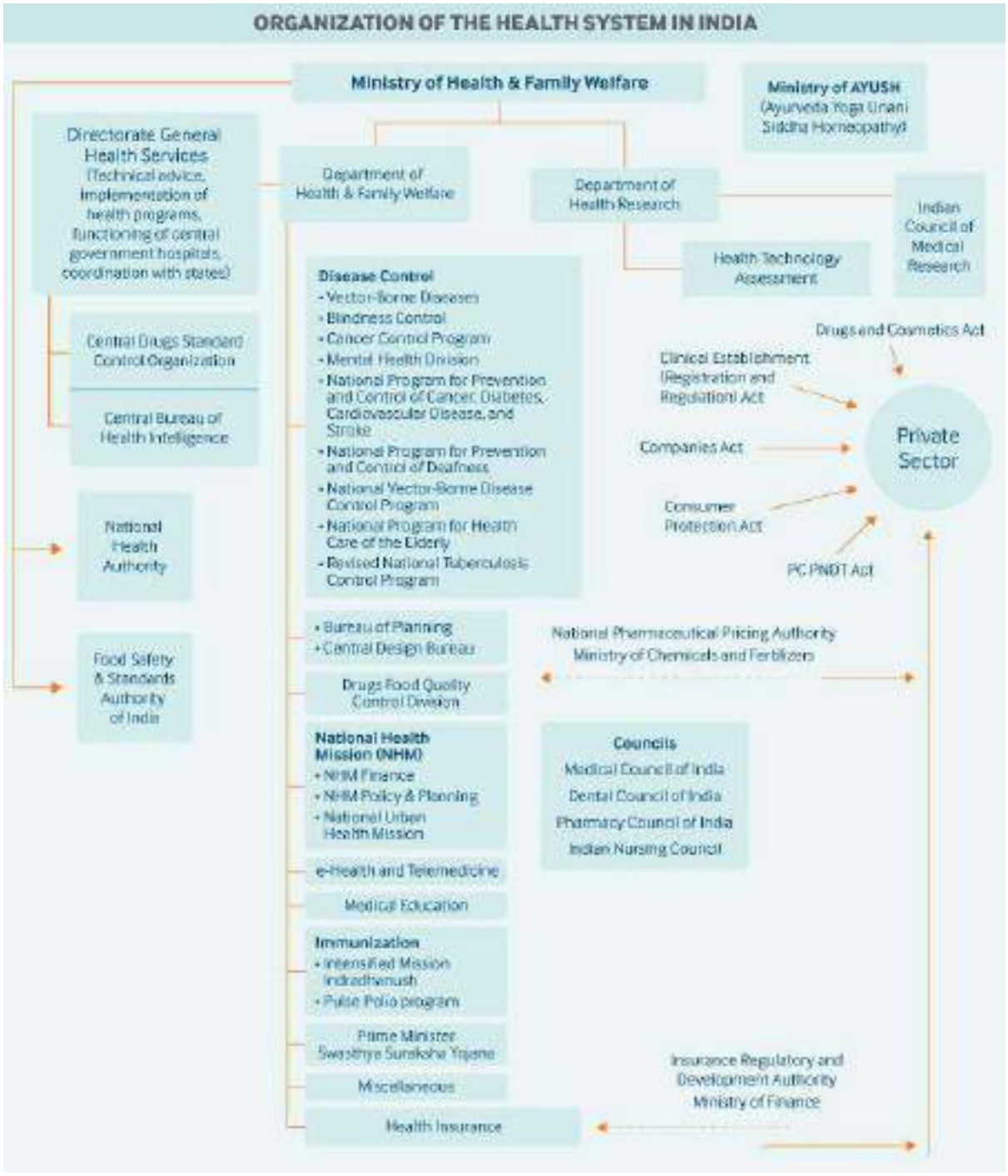
The role of government in administration, funding and function is bifurcated into central and state level. The Federal government has established the Ministry of Health and Family Welfare to regulate the decisions of health policies and programmes in India. To carry out these responsibilities, the ministry has formed two departments: (i) The Department of Health and Family Welfare and (ii) The Department of Health Research. As the name serves, the first department is responsible in operating and supervising the national level health programmes. And the other department promotes medical research in the nation.

The state governments have two administrations to take care of the public health care services: (i) Departments of Health and Family Welfare and (ii) Directorate of Health Services. These two administrative powers are responsible in promoting and provides health care services to the people of the country living/visiting the states. They are trifurcated into 3 care functions: primary, secondary and tertiary care providing health and medical, medicines and pharmacy and hospital care services respectively.

The state government's health departments are responsible for the functioning of the health care workers, operate the health programs funded by the Central Government, Gathering of information and statistics on the health status of the state, Monitor food and medicine quality etc. The state has autonomy in the provision of health care to its people, therefore there is a differentiation in the way health care services are delivered throughout the nation. Varied aspects such as insurance, accessibility, availability of health care services are also dependent on the states' functions and policies. This is the primary reason why the health care services is different from state to state. Even though, the Government of India has taken utmost steps to provide health care services for its citizens for free, it still has not reach everyone. Further, in a global context, the development which India needs to incorporate in its healthcare system is abundant. In the next section the researchers explain the status of health care in rural India. (Gupta and Patel, 2020)

Figure: 3.1

The Organization of the Health Care System in India



Source: Gupta and Patel, 2020

3.2 Status of Rural Health Care in India

In 2005, the National Rural Health Mission (NRHM) was established by Dr Manmohan Singh, the former Prime Minister of India. The goal of the mission is to aid people living in rural communities, to access affordable and good quality health care services. Under this mission, the healthcare services and delivery system is decentralised, and the local community

is involved in providing the services. The primary target of the mission is to provide equal opportunities for the rural population to receive health care services at an affordable cost. The mission also tries to bring social change in bettering determinants of good health such as increasing accessibility of rural communities to clean water, better sanitation, quality education, nutritious food, good environment and gender equality etc. This scheme concentrates on the North-eastern Regional states, Himachal Pradesh and Jammu Kashmir. Further, the scheme focuses on the Empower Action Group (EAG) states such as Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttaranchal and Uttar Pradesh.

The prominent characteristic of the mission is to provide a fully functional health care system that will have rural health development as its core focus. The mission is driven by accountability, community engagement, decentralisation of power, constant monitoring and examination of quality and human resource management. (Ministry of Health & Family Welfare-Government of India, 2022)

3.3 Health care System in Tamil Nadu – An Overview

In 1956, the National Family Welfare Programme was launched as a volunteer state initiative by the Government of Tamil Nadu to provide better health care services to its people. The programme was developed to increase the standard of living of the people, control population growth and augment maternal and child health in the state. In Tamil Nadu, there is a "Community Needs Assessment Approach" which provides better health care for new mothers, newborn babies and the adolescent population.

The objective of the Family Welfare Programme is to develop healthy mothers and children, which prevents families to choose to have two or lesser children. This brings down the birth rate in the state. Further, the programme takes utmost effort in the prevention of female infanticide and foeticide. The programme is funded by the Government of India, and it is implemented throughout India. Tamil Nadu has always taken health seriously and in the next section, the researchers discuss the efforts of Tamil Nadu in implementing the Sustainable Development Goals stipulated by the UN. (TN Health, 2018)

3.3.1 The Efforts of Tamil Nadu in achieving the Sustainable Development Goals

The United National Development Programme has set 17 goals for the betterment of the Globe. These goals are called the "Sustainable Development Goals". The program was formerly called "Transforming our World: the 2030 Agenda for Sustainable Development". Now it is popularly known as the 2030 Agenda. Tamil Nadu government has devised many policies and programmes to achieve these goals.

The goals under this program aim at creating global level social and economic programming by targeting challenges such as eradicating poverty, zero hunger, good health and well-being, quality education to all, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation & infrastructure, reduced inequality, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace and justice strong institutions and partnerships to achieve the goal.

Figure: 3.2

The Global Sustainable Development Goals

Source: GAVI.ORG

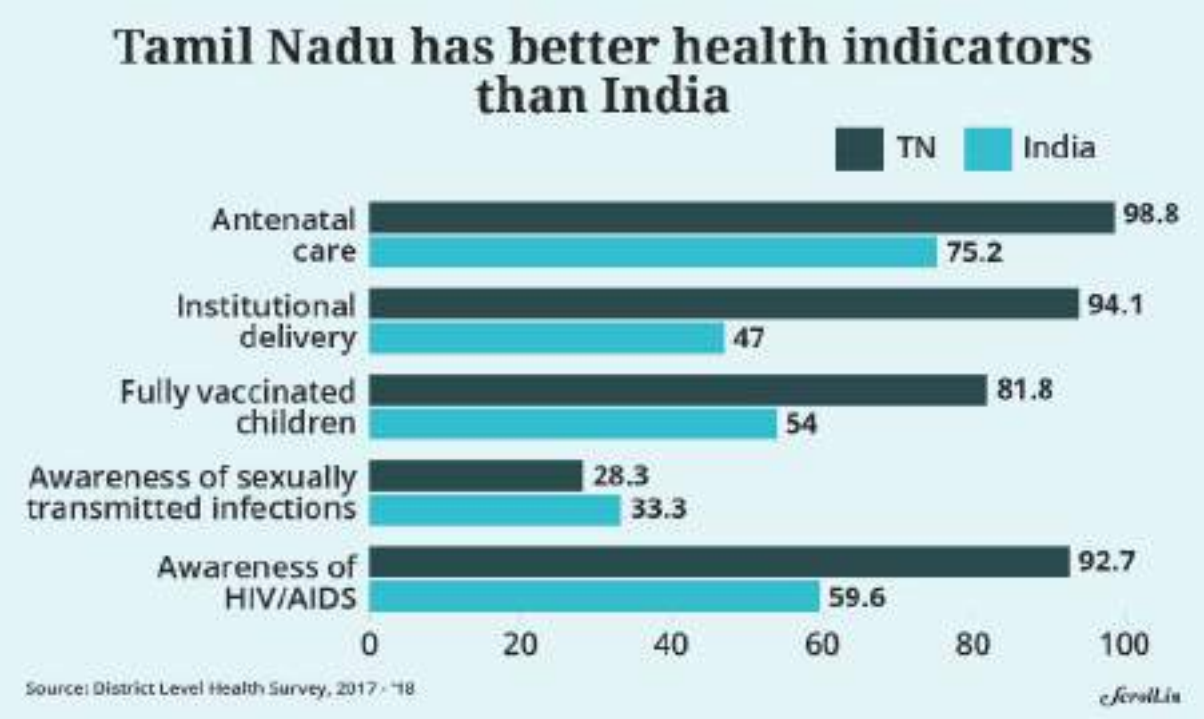
The above-mentioned goals were constructed on the Millennium Development Goals, by introducing newer areas such as action against climate change, reducing economic inequality, promoting innovation, creating sustainability in consumption and fostering peace and justice etc. The objectives of the programme are intertwined, and the goals are common. Hence, by addressing one challenge, it has a butterfly effect on the others. Under the Family Welfare programme in the scheme, the improvement of sexual and reproductive health and promoting reproductive rights are amongst priorities. The researchers explain goal number 3 in the next section as it has major relevance to the current study.

3.3.2 Good Health and Well-Being

The efforts taken by the Tamil Nadu government has ensured the wellbeing and healthy lives of its people. The infant mortality rate and the maternal mortality rate has declined. The state's tactful management of health by concentrating on the provision of essential health services, medicines for the rural, poor and vulnerable groups is commendable. In 2017, the national health policy focused on the universalisation of health in the country. This furthermore emphasises the steps taken by the state in the promotion of health. (TN Health, 2018)

Figure: 3.3

Health Status of Tamil Nadu



Source: SCROLL.IN

3.4 Status of Rural Health Care in Tamil Nadu

In 2005, the Tamil Nadu Government launched the State Rural Health Mission in order to construct a better health system in the state. The objectives of the mission under the guidelines of the National Rural Health Mission of India was to efficiently manage the increased health demands and steer policies and programmes to fortify the public health care system.

3.4.1. The Objectives of the State Rural Health Mission

The mission was developed to improve the delivery of healthcare services to rural people. The following are the objectives of the mission:

- Decreasing the Maternal and Infant Mortality Rates in the State.

- Increasing Accessibility of Rural Communities in Public Health Care System of Tamil Nadu.
- Bettering Civic Needs: Clean Drinking Water, Hygienic Sanitation, Universal Immunisation and Improving Nutrition.
- Improving Rural Women's Health Status.
- Controlling the Spread of Communicable and Non-Communicable Diseases
- Stabilising the Gender Ratio
- Integrating Health Care Systems and making them accessible to the rural people
- Promoting Healthy Lifestyles in Rural Areas
- Rejuvenating Traditional and Alternative Medicine

The vision of the State Rural Health mission is to create a reliable and quality health care system that will reach everyone equally and affordably by keeping the needs of the common people in account. (National Health Mission Tamil Nadu, 2022)

3.5 Policies and Programmes to Promote Health Care Service in India

The Ministry of Health and Family Welfare develops policies, programmes and initiatives to develop the public healthcare industry in India. Healthcare in a nation is one of the most crucial sectors in terms of providing employment, creating revenue and finally creating healthy citizens in the country. The principal plans devised by the Government of India concerning the health sector define the future of the country.

3.5.1 Medical Emergency Response Service and Health Care Systems Preparedness Package:

The COVID-19 situation shook the entire world's health care systems. Even western countries with advanced medical technology were not able to cope with the number of cases due to the COVID-19. It made the world realise the importance of medical emergency response services and the health care systems preparedness packages. The government hospitals and the public health care centres are the primary health providing foundation in any country. In a large country like India, COVID-19 posed an even more severe threat. Hence, it has made India also realise the importance of medical preparedness.

The National Health Mission (NHM) in India provides the technical support and funding to all the States and Union Territories of the nation to develop their health care systems and infrastructures. NHM devised the guidelines to cope with COVID-19 in India.

3.5.2 Ayushman Bharat Pradhan Mantri Jan Arogya Yojana

Ayushman Bharat Pradhan Mantri Jan Arogya Yojana was introduced by the Government of India in 2018. It is the world's largest state-financed insurance scheme. The scheme is entirely funded by the federal government of India. The primary objective of the scheme is to provide insurance coverage to the economically disadvantaged weaker sections of the population, especially from rural communities. The vulnerable section of the people are deprived of the health care services which is accessible by the able and rich. Hence, the government of India has introduced this scheme to bridge the gap between the poor, rich, urban, rural etc. More than 10 crore people from vulnerable communities have been identified and made part of this scheme.

3.5.3 Pradhan Mantri Swasthya Suraksha Yojana

Pradhan Mantri Swasthya Suraksha Yojana was launched in 2006 to remedy the imbalances in providing tertiary level health care services in different regions in India. The scheme also promotes infrastructure to provide good quality education in medicine. The scheme comprises of two elements: the first one is to establish new All India Institute of Medical Sciences (AIIMS) in different parts of India and secondly the development of already existing Government Medical Colleges (GMCs). PMSSY has been responsible for the development of several medical education institutions in India.

3.5.4 Ministry of AYUSH

The Ministry of AYUSH is responsible for the use of scientific methods in the cultivation of medicinal plants and expanding the AYUSH infrastructures for Health and Education. Development of Skills, global propagation of Ayurveda (Indian Traditional Medicine) and Yoga to increase employment opportunities and revenue for the nation. The Ayurvedic market is expected to grow exponentially. A Central Government funded National AYUSH scheme is to provide education, health care services throughout the nation. Digitisation of ancient scripts and texts providing medical knowledge is also included in this scheme. (Press Information Bureau, 2021)

3.6 Policies and Programmes to Promote Health Care Service in Tamil Nadu

The Tamil Nadu government takes immense efforts in building the health care system in the state and delivering medical services to its people. The state has the vision to move its ranking to number one in the nation in health care services by the year 2023.

3.6.1 The Objectives of the Policies and Programmes to Promote Health Care Services in Tamil Nadu are as follow:

- Manage and control communicable diseases amongst the people
- Provision of quality health care services to the citizens of the state
- Remedying the equality and equity related issues amongst the people of Tamil Nadu
- Creating an effective and reliable financial system for funding the health care services in the state
- Increasing the accessibility to health care amongst the poor people, rural communities and other vulnerable sectors
- Improving policies to handle prominent health challenges and problems faced by the people.
- Developing the public health care system's quality and services by introducing the non-government sector into its realm
- Aiming at progress in the health sector at district and sub-district levels in the state of Tamil Nadu
- Improving the health status of mothers, children, indigenous communities, rural and remote areas inhabitants. (Tamil Nadu Health Systems Project, 2015)

The Government of Tamil Nadu has always been a pioneer in promoting the health of the people. They have committed and engaged themselves in bettering the health status of the people and developing the health infrastructures in Tamil Nadu. The pre-independence "Public Health Act" in the state of Madras shows the amount of commitment and spearheading the state has always displayed.

3.7 Emergency Health Care – Definitions and Meanings

Emergency Health Care is the core topic of this research work. The substantial definitions and explanations of the concept from global organisations have been displayed below.

3.7.1 Definitions:

"All around the world, acutely ill and injured people seek care every day. Frontline providers manage children and adults with medical, surgical and obstetric emergencies, including injuries and infections, heart attacks and strokes, asthma and acute complications of pregnancy. Prioritising an integrated approach to early recognition and resuscitation reduces the impact of all of these conditions."

“WHO's Emergency, Trauma and Acute Care programme is dedicated to strengthening the emergency care systems that serve as the first point of contact with the health system for so much of the world, and to supporting the development of quality, timely emergency care accessible to all.” (World Health Organisation, 2019)

“Emergency Care means management for an illness or injury which results in symptoms which occur suddenly and unexpectedly, and requires immediate care by a medical practitioner to prevent death or serious long-term impairment of the insured person’s health.” (Law Insider, 2022)

“An emergency service is any health care service provided to evaluate and/or treat any medical condition such that a prudent layperson possessing an average knowledge of medicine and health, believes that immediate unscheduled medical care is required.” (American College of Emergency Physicians, 2015)

According to the National Highway Traffic Safety Administration, USA (2022), Emergency Medical Services which is initialised as EMS is the system which delivers medical care in emergency situations. EMS is delivered during a serious illness or injury caused by an incident or accident. Hence, when we observe emergency ambulances rushing to a particular location, it can be understood that they are responding to emergency incidents. However, EMS is not just transportation of patients to hospitals from the location of the incident, it is a multidimensional service coordinated with a multi-layer coordinated communication system as it involves multiple people and agencies in its realm. A comprehensive EMS system is always on the go, and ready to attend to emergency incidents.

3.8 Emergency Medical Services in Tamil Nadu

The Department of Health and Family Welfare under the Government of Tamil Nadu provides five types of emergency medical services to the people of Tamil Nadu.

- 104 Health Helpline: Information, Advice, Complaints
- 102 JSSK: Drop Back Service: Mother and Child
- 155377: Free Hearse Service
- Tamil Nadu Accident and Emergency Care Initiative (TAEI)
- 108 Emergency: Medical, Police, Fire

104 Health Helpline is a centralised information centre that provides information on health-related matters. It is a telecommunication system launched by the Tamil Nadu Government in 2013 to provide information on Tele-medical Advice and Suggestions, Tele-

counselling for psychological issues, Blood and Organ Donation, Suicide Prevention, NEET based information and Counselling etc.

102 Janani Sishu Suraksha Kariyakaram (JSSK) was launched as a pilot project in 2013 by the Tamil Nadu Government with the toll-free number 102. It provides ambulance services for pick and drop of maternal cases, mentally ill patients, dialysis patients, COVID-19 patients etc.

155377 is a free public hearse service launched by the Tamil Nadu government on a public-private partnership in 2011. It provides mortuary vans for people who have died in government hospitals, cancer institute etc. (Tamil Nadu Health System Reform Program, 2022)

Tamil Nadu Accident and Emergency Care Initiative (TAEI) is a mobile application launched in 2018 by the Tamil Nadu Government under the state health department to reduce deaths caused by road accidents. (Thomas, 2018)

3.8.1 108 Emergency Ambulance Services – An Overview

Millions of people die every day due to medical emergencies and the unavailability of ambulance services. To overcome this issue the 108 Emergency Ambulance Services was first launched in Andhra Pradesh as a privately funded project by Mr Satyam Ramalingaraju and his family in 2005 for the welfare of the people. Later they signed memorandums of associations with many state governments and implemented it as a public-private partnership program.

108 Emergency Ambulance is a 24x7 free public service to handle emergency medical emergencies which successfully runs in Tamil Nadu. The emergency service is also functional in other southern states such as Andhra Pradesh, Karnataka, Kerala and Telangana, northern states such as Chhattisgarh, Goa, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Uttarakhand and Uttar Pradesh, north-eastern states such as Assam and Meghalaya and union territories Dadra & Nagar Haveli, Daman & Diu and Puducherry. It runs on a public-private partnership with a single toll-free number: 108.

There is no prefix or suffix to the toll-free number 108. When the caller calls the number, it goes to an Emergency Response Centre (ERC) and the call is attended by a 108 trained attender, the person notes down the nature of the emergency and immediately dispatches a fire engine, emergency ambulance or police assistance based on the call. The number 108 has a sense of spiritual connection to the people and calling the number provides a spiritual consolation to the people.

Approximately help reaches in 20 minutes to the caller. The Emergency Response Centre also further coordinates with a despatch officer, an emergency response centre physician

and an emergency medical technician on the transit of the patient to the medical facilities providing them support and guidelines. (Tamil Nadu Health System Reform Program, 2010)

3.8.2 Challenges of 108 Emergency Ambulance Services

108 Emergency Ambulance Services is the most popular medical emergency service in Tamil Nadu and India. However, they are affected by certain challenges and issues, which is discussed by the researchers in this section.

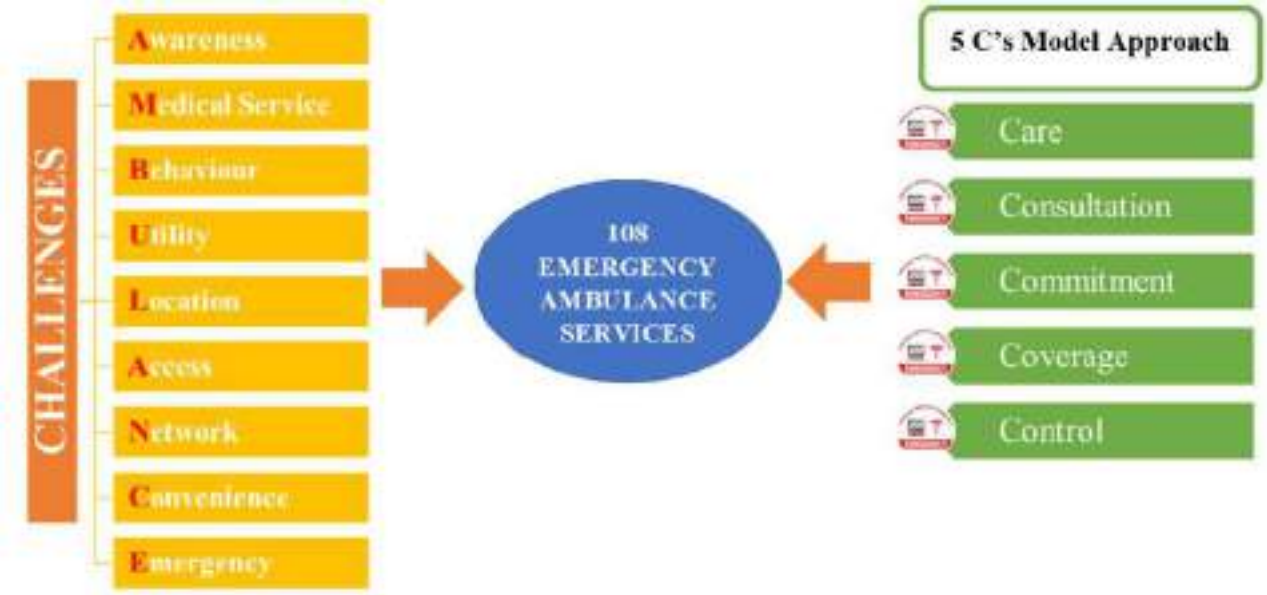
- A revamp of the ambulances has become the need of the hour, the ambulances were purchased over a decade ago, hence they need to be changed to suit the current needs of the people.
- There are certain mechanical problems faced by the current ambulances, which needs to be fixed.
- The facilities in the ambulance such as digital BP monitors, collapsible patient stretchers need to be renewed.
- Medical equipment in the ambulance needs to be checked and if they are conditions are poor, they need to be replaced.
- Medical technology has advanced, smart ambulances have become the trend in the west. This needs to be implemented in India also.
- Additional personnel have to be appointed
- Retraining of old personnel is required to better their skills.
- The 108 ambulances are constrained in sourcing their funding and resources. (Rao, 2017, Gopal, 2015).

3.9 Model Development on 108 Emergency Ambulance Services

The model of the proposed study includes the concepts of emergency healthcare services. Further, the research work intends to study the challenges of rural people in using the 108 Emergency Ambulance Services with selective factors namely Awareness, Medical Service, Behaviour, Utility, Location, Access, Network, Convenience and Emergency. The researcher has framed a proposed research model for rural people with the 5 C’s (Care, Consultation, Commitment, Coverage and Control) model approach. The proposed model of the research work portraying the challenges of rural people in using 108 Emergency Ambulance Services are constructed and presented in a diagrammatic representation as follows:

Figure: 3.4

Proposed Model on Effective Utilisation of 108 Emergency Ambulance Services by Rural People in the State of Tamil Nadu



Source: Proposed Model of the Study

3.9.1 Challenges of Rural People in Using 108 Emergency Ambulance Services

The research work deals with the challenges of rural people in Tamil Nadu in using the 108 Emergency Ambulance Services. There are varied reasons for the challenges faced by the rural population. The researchers hypothesised the following reasons and have tested them in the study to create the research model. The following are the brief explanation of the reasons considered by the researchers in the study.

3.9.1.1 Awareness

Sacheti (2019) opines that majority of rural population in India lack awareness on the usage of the services provided by the 108 Emergency Ambulance Services. They lack the know how to approach or call for the services of the 108 ambulances during a medical emergency. Further, they lack knowledge about the different types of medical services provided by the 108 ambulances.

3.9.1.2 Medical Service

Rajasulochana and Maurya (2018) say that medical services provided by the 108 emergency ambulances are limited. Medical services rendered by the attendants of the 108 ambulances are not equivalent to the services of a doctor. Further, the 108 emergency ambulances do not provide services for non-emergency medical conditions.

3.9.1.3 Behaviour

In general, rural people are not used to tedious rules and regulations. They live simpler lives compared to urban dwellers. Hence, they may find the usage of the 108 ambulances difficult if the medical attendants at 108 ambulances are not caring, supportive and helpful. If the 108 ambulance drivers or the call centres are not amicable with patients or their attenders, it will demotivate the people from rural areas from using the services of the 108 ambulances. Gopal (2015) states that the health care workers of 108 ambulances need special training for exhibiting behavioural changes.

3.9.1.4 Utility

Times of India (2019) has highlighted that rural people due to their lack of knowledge or prejudices may consider that 108 ambulances may not be useful and helpful during a medical emergency. Rural people do not prioritise to use the 108 emergency ambulance services during a medical emergency. They tend to believe that 108 ambulances may not be suitable for all medical emergencies. The article added that people tend to believe that 108 ambulances are restricted only to accidents.

3.9.1.5 Location

Rural areas are under-developed compared to urban areas, hence the roads in most rural areas are poorly constructed or are in bad conditions. Agarwal (2018) reports that 1/3rd of the rural population in the world do not have paved roads in their areas. Rajasulochana and Maurya (2018) say that the deployment of ambulances in urban areas are more than rural areas. The 108 ambulances in rural areas are limited in numbers. Hence the time taken for a 108 ambulance will be time consuming to reach rural locations. This will prevent rural users from choosing the services of the 108 ambulances.

3.9.1.6 Access

The demand for free service of the 108 ambulances make them scarce. Hence during medical emergencies, they may not be accessible to the rural population. This phenomenon makes people choose private ambulances which is easier to access during medical emergencies than 108 ambulances. Private providers work for profit; hence they will be more in number than the 108 ambulances. Therefore, access to a private ambulance is normally easier than the 108 ambulances.

3.9.1.7 Network

Nowak (2021) highlight that the poor network connectivity in rural areas pose as a major limitation in contacting emergency medical services. Similarly, in Tamil Nadu, the scattered network ranges in villages make it difficult for rural inhabitants to connect to 108 call

centres during a medical emergency. Further, 108 ambulances find it difficult to connect to patient calls due to poor mobile signals. The lack of networking between hospitals and 108 ambulances make it challenging to patients to decide on hospital admissions and also delays the admission process.

3.9.1.8 Convenience

Rural communities may not find 108 ambulances as convenient to use during a medical emergency. Nowak (2021) underlines that patient from rural areas need more help than urban topographies. The difficulty to use 108 call centres during a medical emergency and the lack of equipment for all types of emergencies may prevent the rural people from using the 108 ambulances. He says that as the distance is far, the medical attention needs to be more in the ambulance to better treat patients and save their lives before reaching a hospital facility.

3.9.1.9 Emergency

Nowak (2021) emphasises that it is important to reduce the time taken to medically attend patients from rural areas as the distances to a medical facility may be far. During medical emergencies 108 ambulances take long time to attend the patients in rural areas. So, rural people may opt for local/indigenous methods of treatment during medical emergencies without reaching to108 ambulance services. Further, the lack of knowledge to differentiate between emergency and non-emergency medical condition may also prevent them from approaching the 108 ambulance services.

The researchers have devised a 5 C's Model Approach with Care, Consultation, Commitment, Coverage, Control as the elements of the model to overcome the above-mentioned challenges which prevent the rural people from using the 108 Emergency Ambulance Services.

3.9.2 5 C's Model Approach - Needs of Rural People in 108 Emergency Ambulance Services

The 5 C's Model Approach comprehensively addresses the needs of the rural people in Tamil Nadu for better accessing and utilising the services provided by the 108 Emergency Ambulance Services.

3.9.2.1 Care

The 108 ambulances must be equipped to handle all types of medical emergencies. The medical attendants should provide better care for the patients on par with the doctors. The medical attendant and the driver should be supportive to the patient and their attenders to better handle a medical emergency situation. Nowak (2021) argues that health care service providers need to be more friendly with the patients, they must build a rapport with the patient to earn

their trust as the patients may be scared. It is the duty of the medical attendants to calm the patients and treat them with care before their arrival at the hospital.

3.9.2.2 Consultation

Pedrotti et al (2021) suggests that tele-medical consultation should be provided for the patient during their transport to the hospital in the ambulance. This would remedy not having a physician on board and a medical attender can provide medical support to the patient until reaching the hospital. Further, the researchers suggest that tele-medical consultation can be directly provided to the patients and their attenders during their wait for the 108 ambulances. After the pick-up, a live video consultation can be given by the doctors to the medical attenders in the 108 ambulances. Similarly, counselling services can be extended to the patients and their attenders in the 108 ambulances to manage their trauma due to the medical emergencies.

3.9.2.3 Commitment

Nowak (2021) reiterates that the medical attends should expand their resources and have knowledge about the hospitals in the surroundings. The medical attendant and the driver should support the patient until admission during a medical emergency. The 108 ambulance services should assist the patient for further transportation to other hospitals if there is a lack of appropriate medical facilities to handle a medical emergency at the currently admitted hospital The 108 ambulance call centres should follow up on the status of the patient's health condition after admission at a hospital.

3.9.2.4 Coverage

Berg et al (2019) discusses the optimisation of the placement of the ambulances to increase the coverages in both urban and rural areas. The optimal distribution can cover both high demand urban areas and low demand rural areas. The researchers recommend that the 108 emergency ambulance services should be extended to all the rural areas. The network connectivity should be made better in rural areas to access the 108 ambulance services during a medical emergency. Necessary medical equipment should be included in the 108 ambulances to serve rural people better.

3.9.2.5 Control

Control and accountability is important in the management and success of a public institution. The 108 ambulances should be ensured with better location tracking technology to serve rural people during a medical emergency. Periodical evaluation and maintenance check of 108 ambulances are required to ensure quality medical service. 108 ambulances should incorporate a feedback and grievance redressal system to provide better service during a

medical emergency. Gopal (2015) calls for the revamp, refurbishing and replacing of ambulances and its equipment for the development of the system.

The researchers have crafted the 5 C's model approach carefully for the benefit of the rural topography. If the model is implemented by policy makers, it will aid towards addressing the problems faced by the rural populations in accessing the 108 Emergency Ambulance Services during medical emergencies. The healthy population is a great asset to the nation, hence it would be commendable if more people from the state of Tamil Nadu especially the rural inhabitants are included in the realm of a healthy and safe life.

CHAPTER - IV

OVERVIEW OF 108 EMERGENCY AMBULANCE SERVICES IN TAMIL NADU

CHAPTER IV

OVERVIEW OF 108 EMERGENCY AMBULANCE SERVICES IN TAMIL NADU

The Health and Family Welfare Department of the Government of Tamil Nadu strenuously works with a total commitment to providing the best healthcare service and facilities for the healthy life and well-being of the people of Tamil Nadu. The Government of Tamil Nadu takes utmost efforts to serve the people with quality medicare facilities even at the doorstep, especially for the people residing in the remote and rural areas. The Emergency Ambulance Service (EAS) is one of the popular and effective healthcare services functioning under the Tamil Nadu Emergency Management Service (TNEMS), Tamil Nadu Health Systems Project (TNHSP) and Tamil Nadu Health System Reform Program (TNHSRP). The Emergency Medical Service (EMS) provided by the Government of Tamil Nadu includes 108 Emergency Ambulance Services (EAS), 104 Health Helpline Services, 102 Janani Sishu Suraksha Kariyakaram (JSSK) Drop Back Services, and 155377 Free Hearse Services. The overview of 108 Emergency Ambulance Services in Tamil Nadu is comprehensively discussed in this chapter.

4.1. 108 Emergency Ambulance Services

108 Emergency Ambulance Services is one of the significant health care services provided by the Government of Tamil Nadu via Public-Private Partnership (PPP) with GVK - Emergency Management and Research Institute (EMRI). "*Saving the Lives of People*" is the primary motto of the 108 Emergency Ambulance Service in Tamil Nadu. The 108 Emergency Ambulance Service can be availed by dialling an integrated toll-free number "108" (Medical-Police-Fire) which is a 24x7 free service for the people of Tami Nadu. During medical emergencies, people can call 108 and get connected to the call centre to avail 108 Emergency Ambulance Services with a trained Emergency Medical Technician (EMT) to provide pre-hospital care to the patient.

4.2. Tamil Nadu Health Systems Project (TNHSP)

The Tamil Nadu Health Systems Project (TNHSP) has proposed to launch ambulance services as a life-saving effort to enable the poorer people to access and avail the ambulance service during critical medical emergency. Earlier, the TNHSP initiated to provide ambulance services by partnering with selected Non-Government Organisations (NGOs) in 15 districts. Due to operational difficulties, the TNHSP signed a Memorandum of Understanding (MoU) with the Emergency Management and Research Institute (EMRI). The 108 Emergency Ambulance Services program was launched in Tamil Nadu on 15th September 2008 which is

completely funded by the Government of Tamil Nadu. The 108 is a 24x7 integrated service to help people during a medical emergency, fire emergency and also to avail help from police.

4.3. GVK - Emergency Management and Research Institute (EMRI)

The GVK - Emergency Management and Research Institute (EMRI) is a non-profit organisation. It is a pioneer in providing professional emergency management services and started its operation in a Public-Private Partnership (PPP) mode in April 2005 across India. At present, GVK EMRI is functions effectively and provides an integrated emergency service through 108 Emergency Response Ambulances (EAS) across India with 14,177 ambulances by covering 26,942 Emergency cases per day. Currently, EMRI has its operations in 17 States and 3 Union Territories viz. Andhra Pradesh, Telangana, Gujarat, Goa, Tamil Nadu, Karnataka, Assam, Meghalaya, West Bengal, Himachal Pradesh, Chhattisgarh, Uttar Pradesh, Rajasthan, Kerala, Delhi and Union Territories Dadra & Nagar Haveli, Daman & Diu and Puducherry. The ideology of EMRI is to save lives in emergencies through a four-pronged approach: SENSE – REACH – CARE – FOLLOW- UP. EMRI believes in their teamwork of dedicated and effectively trained professionals to provide high-quality emergency management services to people.

Figure: 4.1

Ideology and A Four-Pronged Approach of 108 Emergency Management Services

Source: GVK-ERMI (http://www.emri.in/ideology/)

Figure: 4.2

Operations of GVK-EMRI's 108 Emergency Management Services in India

Source: GVK-ERMI (http://www.emri.in/our-presence/)

4.4. 108 Ambulance Fleet Strength in Tamil Nadu

In Tamil Nadu, the 108 Emergency Ambulance Service extends its operation with a fleet strength of 1,237 spread across the districts. Table 6.1 exhibits that 1,044 Basic Life Support (BLS) ambulance covers 84.40% of the total fleet strength, followed by 124 Advance Life Support (ALS) ambulance that contributes to 10.02% and Neonatal Life Support (NLS) ambulance counts to 65 with a representation of 5.25% of the fleet strength whereas VVIP Convoy ambulance is minimal in number constituting 0.32% of the total fleet strength. In addition, Tamil Nadu Emergency Management Service is included with 41 First Responder Bikes (FRB) to help people during emergencies. Figure 6.2 explains the trend of increase

ambulance count in Tamil Nadu from March 2009 till September 2021 to provide emergency management services to people.

Table: 4.1

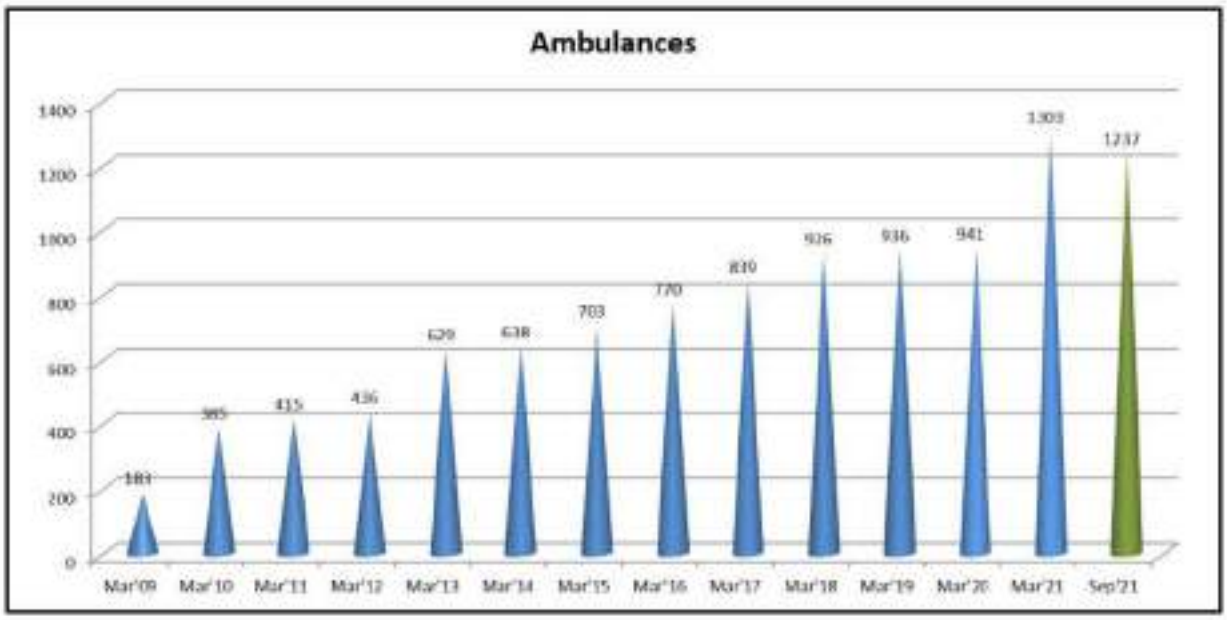
Ambulance Fleet Strength in Tamil Nadu

Ambulance Type	Count	Percent
Basic Life Support (BLS)	1044	84.40%
Advance Life Support (ALS)	124	10.02%
Neonatal Life Support (NLS)	65	5.25%
VVIP Convoy	4	0.32%
Total	**1237**	**100.00%**
First Responder Bike	41	-

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.3

Trend in Ambulance Count in Tamil Nadu from March 2009 till September 2021



Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

4.5. District wise 108 Ambulance Fleet Strength in Tamil Nadu

The distribution of 108 ambulances across the districts of Tamil Nadu is presented in Table 6.2. It is inferred that districts viz. Chennai, Chengalpattu, Thiruvallur and Coimbatore are listed in the top by covering 5% to 8% of the total ambulance fleet strength in Tamil Nadu. Subsequently, Nagapattinam, Ranipet, Karur, Tenkasi, Kanyakumari, Perambalur and Mayiladuthurai are the districts that are underserved with 1% of the total ambulance fleet strength in Tamil Nadu. Table 6.2 presents the District wise 108 Ambulance Fleet Strength in Tamil Nadu as of November 2021.

Table: 4.2

District Wise 108 Ambulance Fleet Strength in Tamil Nadu - As of November 2021

Districts	BLS	ALS	NLS	VVIP	Total	FRB
Ariyalur	15	3	1		19	
Chengalpattu	57	6	2	1	66	2
Chennai	83	10	4	1	98	13
Coimbatore	52	5	2		59	4
Cuddalore	46	4	2		52	1
Dharmapuri	22	2	3		27	
Dindigul	29	2	2		33	1
Erode	38	2	2		42	1
Kallakurichi	21	3	2		26	
Kancheepuram	27	4	1		32	
Kanyakumari	12	2	1		15	
Karur	12	4	1		17	
Krishnagiri	26	3	2		31	1
Madurai	32	5	2	1	40	2
Mayiladuthurai	10	2	1		13	
Nagapattinam	15	2	1		18	
Namakkal	23	3	2		28	
Nilgiris	33	4	2		39	
Perambalur	13	1	1		15	
Pudukottai	28	5	2		35	1
Ramanathapuram	21	3	2		26	
Ranipet	15	2	1		18	
Salem	45	4	2	1	52	2
Sivaganga	19	4	2		25	1
Tenkasi	15	1	1		17	
Thanjavur	24	3	2		29	2
Theni	22	2	2		26	1
Thiruvallur	58	4	2		64	2
Thiruvannamalai	39	3	2		44	1
Thiruvarur	17	1	1		19	
Thoothukudi	18	3	2		23	
Tiruchirappalli	34	6	2		42	1
Tirunelveli	15	3	1		19	1
Tirupattur	17	3	1		21	
Tirupur	23	3	2		28	1
Vellore	19	2	1		22	1
Villupuram	31	2	1		34	2
Virudhunagar	18	3	2		23	
Total	**1044**	**124**	**65**	**4**	**1237**	**41**

Source: TNEMS-TNHSP

Figure: 4.4

Basic Life Support (BLS) Ambulance

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.5

Advance Life Support (ALS) Ambulance

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.6

Neonatal Life Support (NLS) Ambulance

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.7

First Responder Bike (FRB)

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

4.6. Type of Emergency Cases Attended by 108 Ambulances

The 108 Emergency Ambulance Service is effectively extended across 38 districts of Tamil Nadu to provide emergency healthcare to people. Table 6.3 presents the type of emergency cases attended by 108 ambulances from its inception till October 2021. The data vividly explains that people chiefly avail the services of 108 ambulances during pregnancy-related emergencies followed by Vehicular Trauma and Acute Abdomen which constitutes 50.80% of the total emergency cases attended by 108 ambulances.

Table: 4.3

Type of Emergency Cases Attended by 108 Ambulances Since Inception till October 2021

Emergency Type	Since inception till Oct'21	Percent
Pregnancy Related	29,85,631	24.71%
Trauma (Vehicular)	22,63,380	18.73%
Acute Abdomen	8,89,443	7.36%
Cardiac/Cardio Vascular	6,81,591	5.64%
Trauma (Non Vehicular)	5,65,458	4.68%
COVID-19	5,52,737	4.57%
Fevers / Infections	5,16,402	4.27%
Accidental Poisoning	5,11,027	4.23%
Respiratory	4,89,881	4.05%
Assault	4,24,519	3.51%
Others	22,04,058	18.24%
Total	**1,20,84,127**	**100%**

Source: TNEMS-TNHSP

4.7. Performance of 108 Emergency Ambulance Services in Tamil Nadu

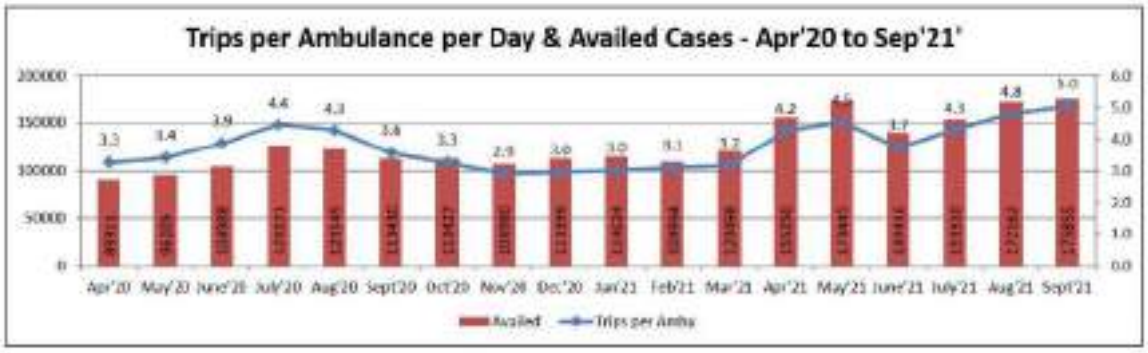
The performance of 108 Emergency Ambulance Services in Tamil Nadu is quite significant and its operations are highly applaudable. The reports of TNHSP evidences the continuous improvement in providing professional emergency services to the people of Tamil Nadu. Currently, 108 ambulances attend 5 cases per day on an average in Tamil Nadu, in which Thiruvarur (5.8 cases), Thanjavur (5.7 cases) and Kanyakumari (5.5 cases) districts avail 108 ambulances with maximum cases per day on an average in comparison to other districts. During the COVID-19 pandemic, the TNEMS deployed separate ambulances dedicated for COVID operations and dynamically increased the ambulance fleet strength for highly COVID affected regions.

Figures 6.8, 6.9, 6.10, 6.11 and 6.12 vividly presents the performance of 108 Emergency Ambulance Services in Tamil Nadu. The details on the Trips per ambulance per day & availed cases from April 2020 till September 2021, District-wise trips per ambulance per day as on September 2021, Cases availed 108 emergency ambulance services during the

Financial Year 2008 -2021, Life saved at 108 ambulances during the Financial year 2008-2021 and cases availed 108 ambulances during COVID from March 2020 till September 2021 are presented as follows:

Figure: 4.8

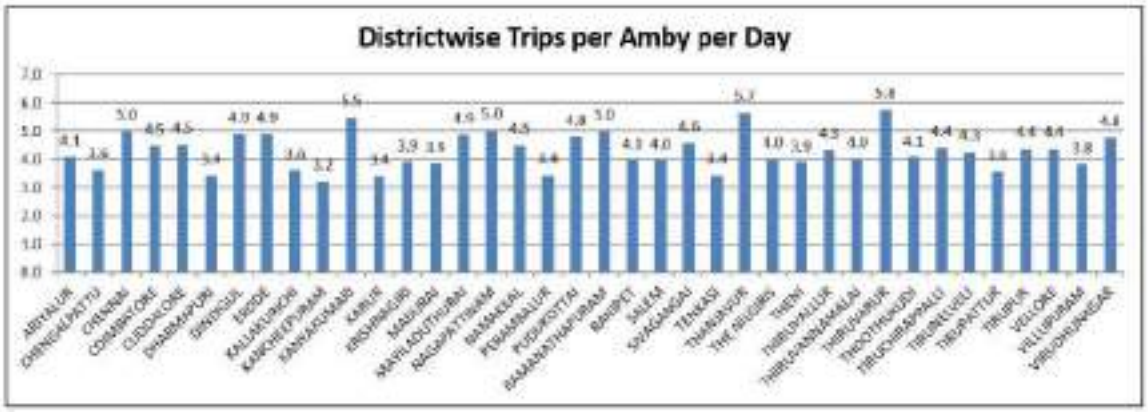
Trips Per Ambulance Per Day & Availed Cases from April 2020 till September 2021



Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.9

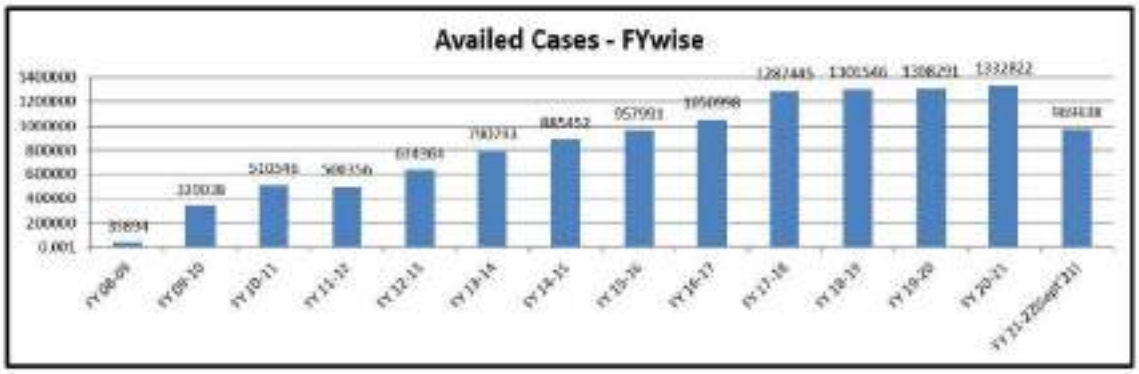
District-Wise Trips Per Ambulance Per Day as on September 2021



Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.10

Cases Availed 108 Emergency Ambulance Services (Financial Year 2008-2021)



Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

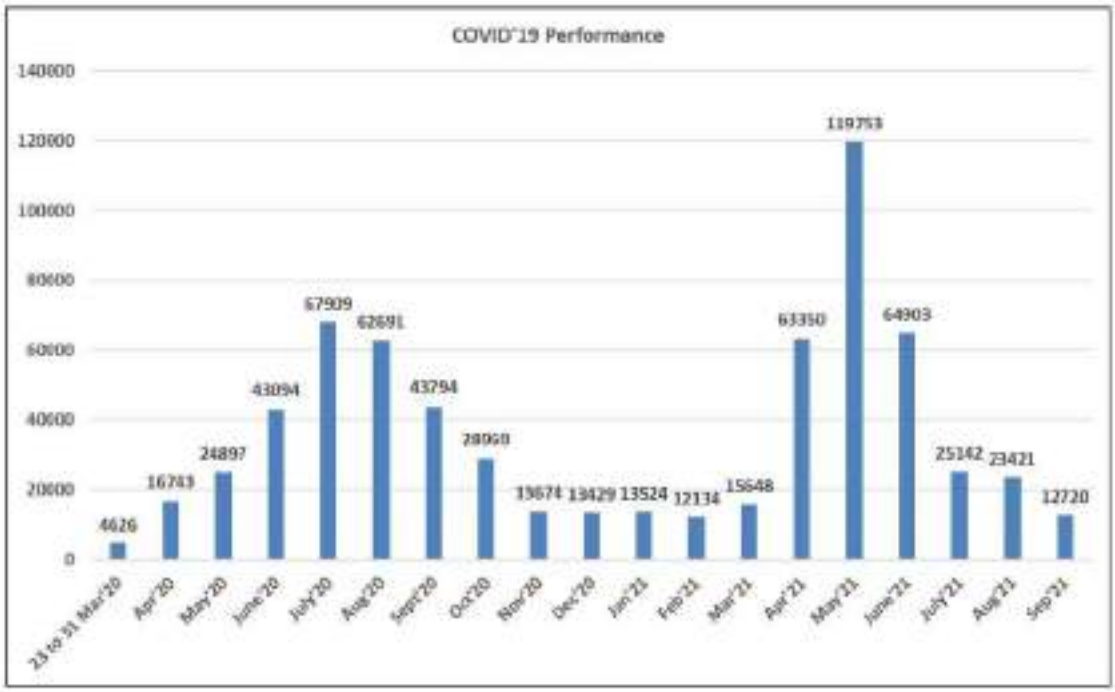
Figure: 4.11

Life Saved at 108 Ambulances (Financial Year 2008-2021)

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.12

Cases Availed 108 Ambulances During COVID (March 2020 – September 2021)



Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

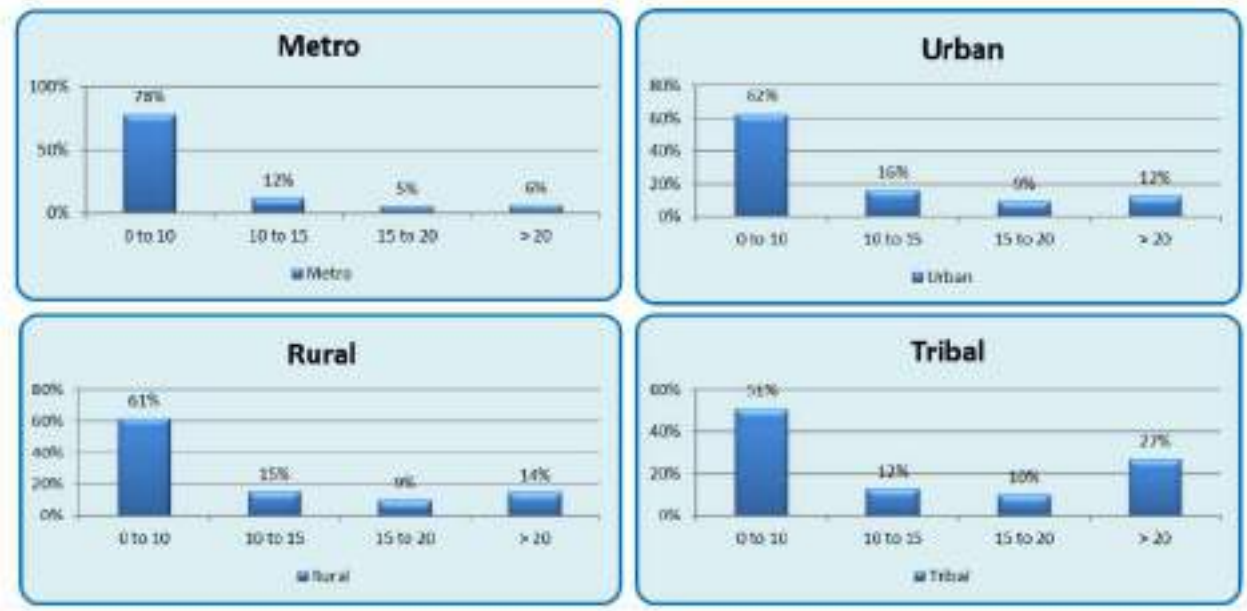
4.8. Response Time of 108 Emergency Ambulance Services in Tamil Nadu

The response time of 108 Emergency Ambulance Services in Tamil Nadu is considerably increasing over the period since its inception. The response time has been reduced from 0:18:09 during the financial year 2017-2018 to 0:14:24 during the financial year 2020-2021. The response time distribution of 108 ambulances across the metro, urban, rural and tribal areas are presented in the consolidated figure 6.13. The figure exhibits that 78% of metro area cases, 62% of urban area cases, 61% of rural area cases and 51% of tribal area cases

experience a response time of less than 10 minutes during medical emergencies in the state of Tamil Nadu. According to TNEMS, the average response time of 108 Emergency Ambulances in urban areas and rural areas in Tamil Nadu is 0:12:51 and 0:15:19 which evidences a significant difference between the urban and rural areas concerning the average response time in attending the emergency cases. Therefore, TNEMS has deployed four wheel drive (4WD) ambulances to reduce the average response time in rural areas, especially in tribal & hilly places of Tamil Nadu.

Figure: 4.13

108 Ambulance Response Time in Metro, Urban, Rural and Tribal Areas



Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

4.9. Emergency Care Centre (ECC) of 108 Emergency Ambulance Services

The Emergency Care Centre (ECC) of 108 Emergency Ambulance Services helps in stabilising the critical cases during long-distance transport. ECC assists in providing medical intervention within the "Golden Hour" (*Period in which the Prompt Medical Treatment will Prevent Death during Trauma or Emergency*). This reduces the mortality rate significantly. ECC is a three bedded centre equipped with doctors and advanced paramedics available 24x7 and provided with emergency drugs and advanced life-saving equipment like ventilator, defibrillator with multi para monitor, etc. At present, the Government of India has installed 12 Emergency Care Centres across varied districts. Since the inception of EEC in Tamil Nadu, 93.07% of 78,127 cases' lives are saved.

Table: 4.4

Cases Attended at Emergency Care Centres Since Inception till September 2021

ECC	Total Number of cases	Medical cases	Trauma cases	Environmental cases	Critical cases	Live Saved Percentage
Tambaram (05 Aug'13 till Sept'21)	28049	15184	9760	2973	23627	92.0%
Padiyanallur (25 June'14 till Sept'21)	18872	8119	9216	1619	7313	88.9%
Injambakkam (03 Nov'17 till Sept'21)	9340	3148	5430	762	4008	94.2%
Mahabalipuram (28 Sept'18 till Sept'21)	8034	1852	4457	1725	2349	97.1%
Veppur (17 Nov'19 till Sept'21)	5049	676	3617	756	1887	97.5%
Sriperumbudur(20 Nov'19 till Sept'21)	3554	698	2545	310	1106	87.7%
Kodumbalur(03 Oct'20 till Sept'21)	1448	354	953	141	152	94.9%
Madhanur(13 Feb'21 till Sept'21)	1223	242	552	429	171	93.6%
Madurai(13 Feb'21 till Sept'21)	717	199	448	70	235	98.5%
Magudanchavadi(13 Feb'21 till Sept'21)	793	251	385	157	176	94.6%
Sholagiri(13 Feb'21 till Sept'21)	471	68	371	30	138	88.6%
Gummidipoondi(13 Feb'21 till Sept'21)	477	245	210	22	129	96.9%
Total	78127	31036	37944	8994	41301	93.7%

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.14

Emergency Care Centre (ECC) - 1

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

Figure: 4.15

Emergency Care Centre (ECC) - 2

Source: TNEMS-TNHSP (http://tnhsp.org/tnems/)

4.10. Operations of 108 Emergency Ambulance Services and its Call Centres

The 108 Emergency Ambulance Service intends to follow the protocols of Sense – Reach – Care – 48 Hours follow up to provide emergency medical care to the people in Tamil Nadu. Once after receiving emergency calls from the people, the call centre personnel (Emergency Response Officers) will collect the address, location information and emergency details from the caller and assign the nearest ambulance using Global Positioning Service (GPS) guidance. The Tech Mahindra is the technology partner of EMRI and it facilitates the effective network and systems to the ensured and efficient delivery of emergency medical care. Once the call centre assigns the ambulance, the nearest ambulances will go and pick up the victim and the Emergency Medical Technician (EMT) will give first-aid while transiting the victims to the nearest hospital with the required facilities and admit the victim safely. While transit, if the case is critical, the EMT takes Doctor Advice who is available in the Emergency Response Center and also will give a Pre-Arrival Intimation (PAI) to the respective hospital where the case is going to be get admitted.

Generally, 33% of cases are referred from Primary Healthcare Centres to appropriate district government hospitals or tertiary care hospitals based on the level of emergency medical care required for the case. 108 emergency ambulances are assigned with approximately 280 Government Hospitals (GH) which is dynamic and keeps on changing depending upon the

emergency crises that arises thereon. The admission of emergency cases is done only in nearby Government Hospitals. However, based on the requests and willingness of the patients or attenders admissions will be done in the requested private hospital. If any cases are reported seeking for police help or Fire Help, the call centre will give information to the nearest Police Stations or Fire Stations for support or rescue.

4.11. 108 Ambulance Drivers (Pilots)

The official title or designation of the 108 ambulance driver is "Pilot". The minimum educational qualification to become a 108 pilot is Higher Secondary School Leaving Level (12^{th} Standard) education with a physical requirement of height 162.5 centimetres and appropriate driving skills. The applicant is expected to hold a valid driving license with at least two years batch and experience of five years. Once the 108 ambulance pilot is selected, he or she must undergo 10 days training with 7 days of institutional training, 3 days of ambulance phase training specialising in BLS, rescue management, victim-safe lifting and moving techniques, vehicle and fuel management. The performance of the pilot is measured through the pilot scorecard. The scoring for the pilot is done based on the components viz. (1) Availed, (2) Unavailed, (3) Attendance, (4) Kilometre Per Litre (KMPL), and (5) Accident (Negative Score). The pilot of 108 ambulances should work on a shift basis of 12 hours per shift which includes breaks and rest time.

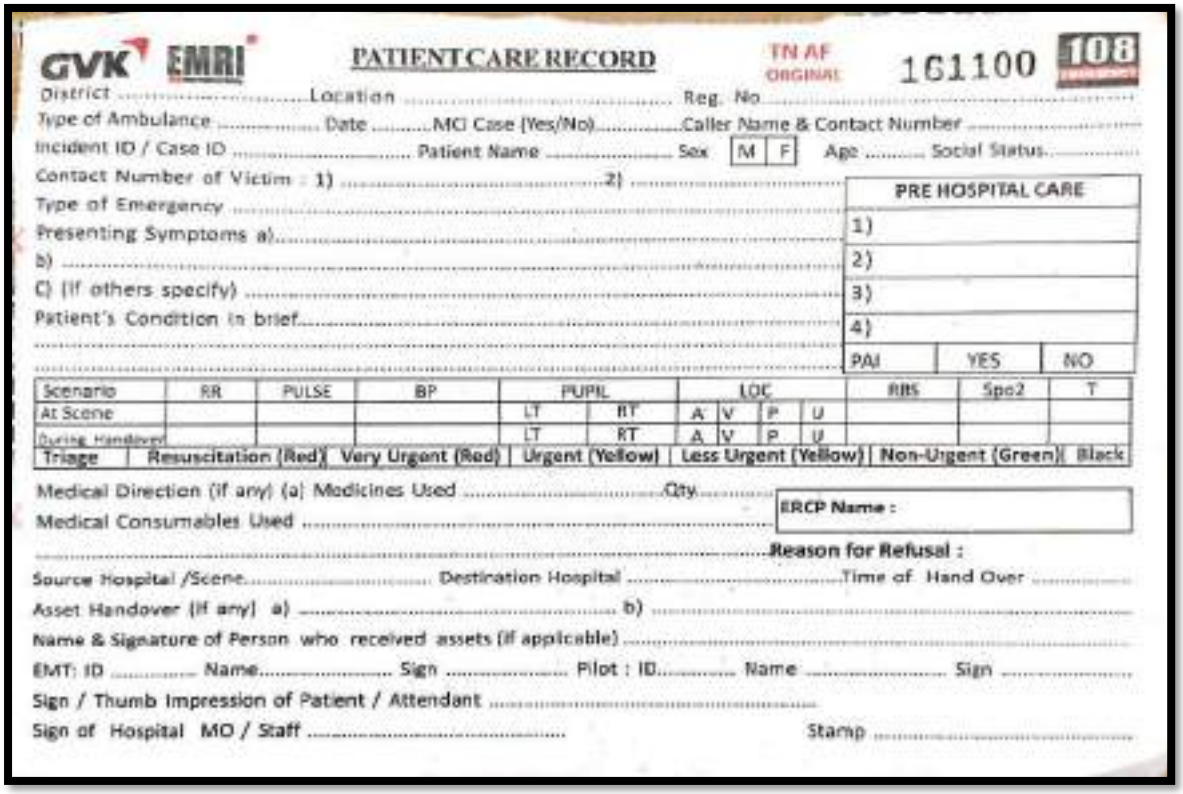
4.12. 108 Ambulance Medical Attendants (Emergency Medical Technicians - EMTs)

The official title or designation of the 108 ambulance medical attendant is "Emergency Medical Technicians (EMTs)". The required educational qualification of the 108 ambulance EMTs includes Graduation in Life science or 2 years Diploma in Medical Laboratory Technician or Diploma in Nursing assistant. The applicants who possess an educational qualification of B.Sc Nursing, Diploma in General Nursing & Midwifery (DGNM) and Female Nursing Assistant (FNA), Male Nursing Assistant (MNA), Emergency Medical Technician (EMT), Diploma in Pharm (D. Pharm) and Advance Emergency Care Technician (AECT) are eligible to become 108 Ambulance EMT. The 108 ambulance Emergency Medical Technicians should undergo 45 days of training which includes 25 days of Institutional training covering theory and skills, 10 days of hospital training with hands on practice and 10 days of 108 ambulance phase training specialising in providing emergency medical care. The performance of the EMT is measured through the EMT scorecard. The scoring for the EMT is done based on the components viz. (1) Availed, (2) Unavailed, (3) Attendance and (4) Case Closing. The EMTs should record the data related to the patient care provided at 108 ambulance

in the prescribed form as mentioned in figure 6.16. The EMTs of 108 ambulances should work on a shift basis of 12 hours per shift which includes breaks and rest time.

Figure: 4.16

Proforma of Patient Care Record



GVK EMRI

PATIENT CARE RECORD

TN AF ORIGINAL 161100 108

District ..... Location ..... Reg. No .....

Type of Ambulance ..... Date ..... MCI Case (Yes/No) ..... Caller Name & Contact Number .....

Incident ID / Case ID ..... Patient Name ..... Sex M F Age ..... Social Status .....

Contact Number of Victim : 1) ..... 2) .....

Type of Emergency .....

Presenting Symptoms a) .....

b) .....

C) (If others specify) .....

Patient's Condition in brief .....

PRE HOSPITAL CARE

1)

2)

3)

4)

PAI YES NO

Scenario	RR	PULSE	BP	PUPIL		LOC				RBS	SpO2	T
At Scene				LT	RT	A	V	P	U			
During Handover				LT	RT	A	V	P	U			

Triage	Resuscitation (Red)	Very Urgent (Red)	Urgent (Yellow)	Less Urgent (Yellow)	Non-Urgent (Green)	Black

Medical Direction (if any) (a) Medicines Used ..... Qty .....

Medical Consumables Used .....

ERCP Name :

Reason for Refusal :

Source Hospital /Scene ..... Destination Hospital ..... Time of Hand Over .....

Asset Handover (if any) a) ..... b) .....

Name & Signature of Person who received assets (if applicable) .....

EMT: ID ..... Name ..... Sign ..... Pilot : ID ..... Name ..... Sign .....

Sign / Thumb Impression of Patient / Attendant .....

Sign of Hospital MO / Staff ..... Stamp .....

Source: TNEMS-TNHSP

4.13. Attrition of Pilot and Emergency Medical Technician

Table: 4.5

Attrition of Pilot and Emergency Medical Technician

108 - Ambulance services – Attrition of Pilot and Emergency Medical Technician										
MONTH (Period 2021)	Jan-2021	Feb-2021	Mar-2021	Apr-2021	May-2021	Jun-2021	Jul-2021	Aug-2021	Sep-2021	Average
Total Separations	39	193	89	29	50	54	23	38	23	59.77
EMT Left	23	49	43	18	26	26	15	21	17	26.44
PILOT Left	16	144	46	11	24	28	8	17	6	33.33
EMT Head Count	2724	2811	2821	2885	2897	2873	2858	2838	2823	2836.67
Pilot Head Count	2942	2797	2778	2837	2827	2798	2790	2773	2767	2812.11
EMT Attrition %	0.84	1.74	1.52	0.62	0.9	0.9	0.52	0.74	0.6	0.93
Pilot Attrition %	0.54	5.15	1.66	0.39	0.85	1	0.29	0.61	0.22	1.19

Source: TNEMS-TNHSP

Table 6.5 presents the attrition rate of 108 ambulance pilots and emergency medical technicians from January 2021 till September 2021. It is inferred that the 108 emergency ambulance services have a minimal attrition rate of 1.19% for pilots and 0.93% for emergency medical technicians.

CHAPTER - V

CHALLENGES OF 108 EMERGENCY AMBULANCE PILOTS AND EMERGENCY MEDICAL TECHNICIANS

CHAPTER V

CHALLENGES OF 108 EMERGENCY AMBULANCE PILOTS AND EMERGENCY MEDICAL TECHNICIANS

The challenges of 108 Emergency Ambulance drivers (pilots) and medical attendants (Emergency Medical Technicians - EMTs) are discussed through interviews conducted among 10 selected pilots and EMTs serving in the rural scenario after getting due permission from the Tamil Nadu Emergency Management Service and Tamil Nadu Health System Project (TNHSP). This chapter provides an overall picture of the various challenges experienced by the 108 ambulance pilots and EMTs in rendering emergency medical care services to rural people.

5.1. Profile of the 108 Emergency Ambulance Pilots

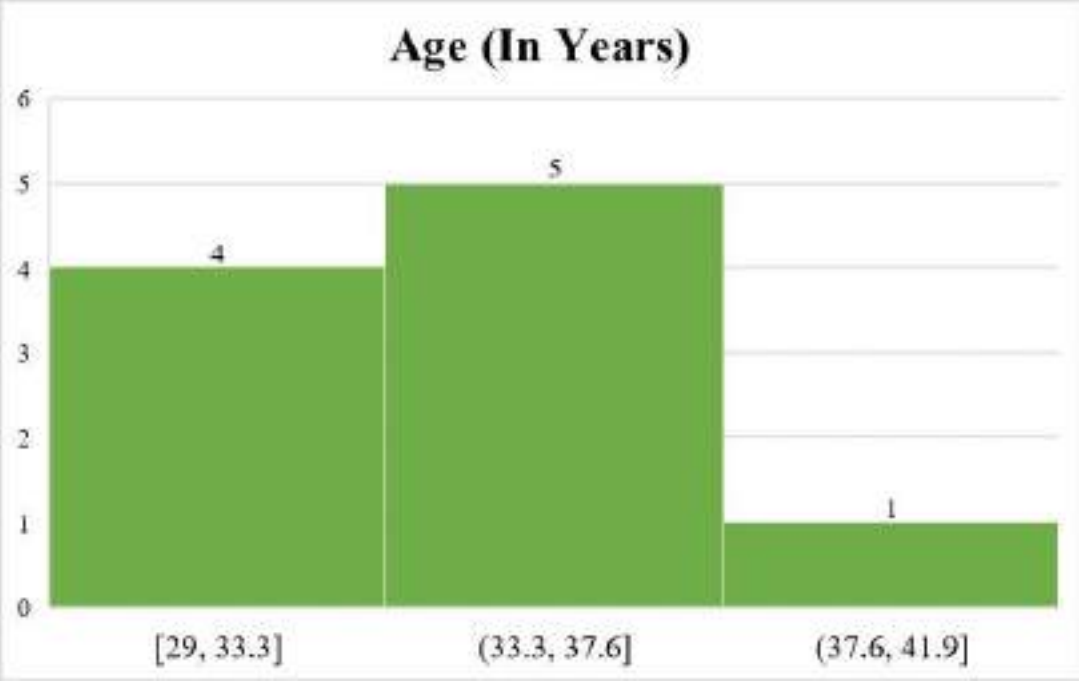
The profile of 108 ambulance pilots includes age, education, work experience, workplace coverage, type of ambulance, average cases per month and day, average response time, success rate, regular medical emergency cases, average distance covered per day, ratings to the condition of the ambulance, age of the ambulance and fuel consumption of the ambulance.

From the data collected, it was found that the average age of the 108 ambulance pilots is from 29 to 37 years with an educational qualification of SSLC or HSE. The working experience of the pilots range from 1.5 to 9 years, and they currently work in the rural areas of the Kancheepuram District in the state of Tamil Nadu. The majority of the pilots drive BLS type ambulances followed by ALS type ambulances. The pilots majorly attend around 119 to 198 cases per month and 3 to 5 cases per day. Most of the pilots serving in the rural area experience an average response time of 3 to 5 minutes to provide emergency medical care to the victim. The majority of the 108 ambulance pilots maintain a success rate of 86% to 100% in providing emergency medical services to rural people.

Road Traffic Accidents (RTA), Labour related emergencies, Poisoning, Snake Bites, Abdominal Pain and Chest Pain are considered to be the regular medical emergencies experienced in rural areas. The average distance covered by most of the pilots in rural areas is from 150 kms to 200 kms. In regard to the conditions of the 108 ambulances, most of the pilots have provided higher ratings from 4 to 5 points. The age of the ambulances driven by the pilots ranges from 1 year to 5.5 years. The majority of the ambulances consume 1 litre of fuel to travel from 11 kms to 12 kms. The following figures and tables that provide a clear insight into the profile of 108 ambulance pilots.

Figure: 5.1

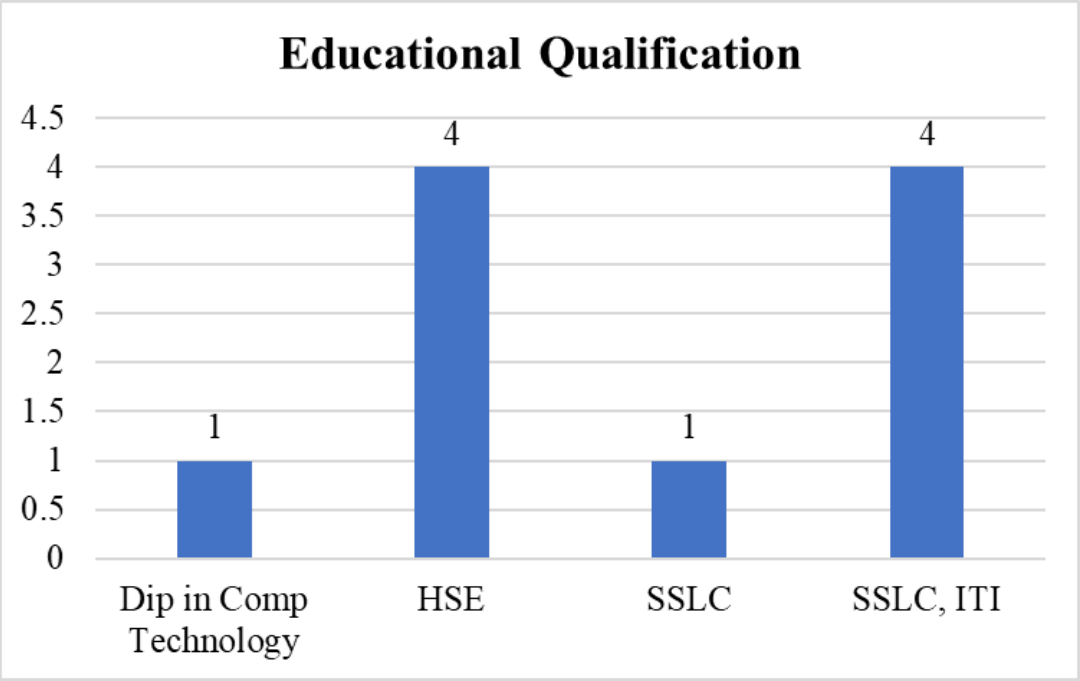
Age of the Pilots



Source: Primary Data

Figure: 5.2

Educational Qualification of the Pilots



Source: Primary Data

Figure: 5.3

Work Experience (In Years) of the Pilots

Source: Primary Data

Table: 5.1

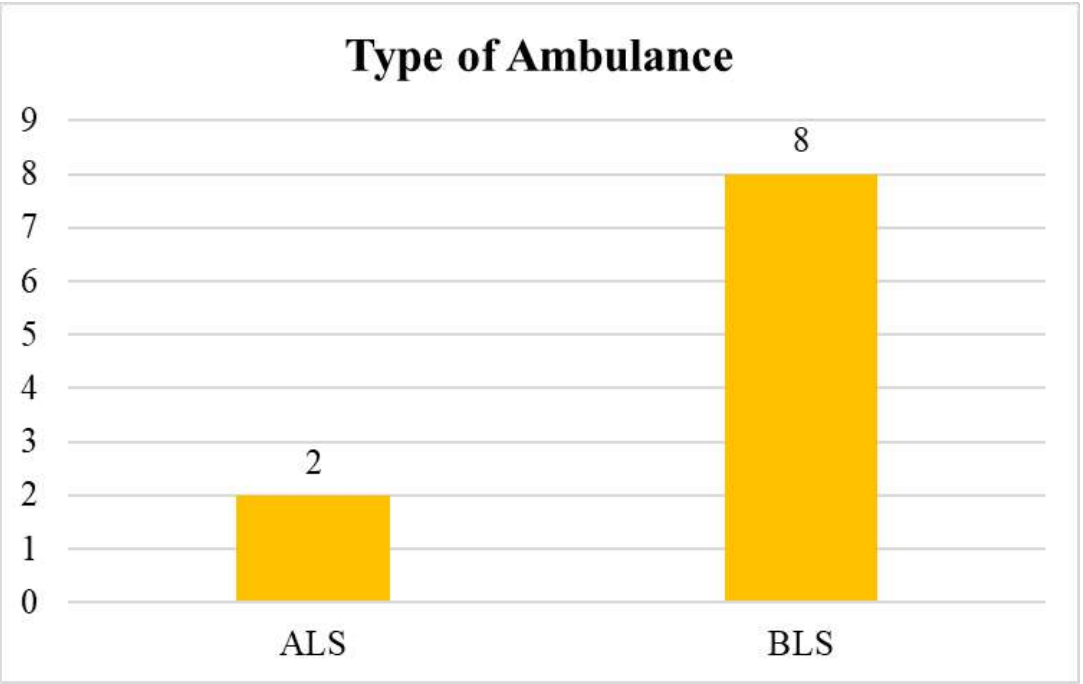
Workplace of the Pilots

Sample No.	Workplace
1	Oragadam
2	Acharapakkam
3	Thirumalpur, Agaram
4	Chengalpet
5	Sholinganallur - ECR
6	Kundrathur
7	Vandalur
8	Thirukazhukundram
9	Salavakkam
10	Kelambakkam

Source: Primary Data

Figure: 5.4

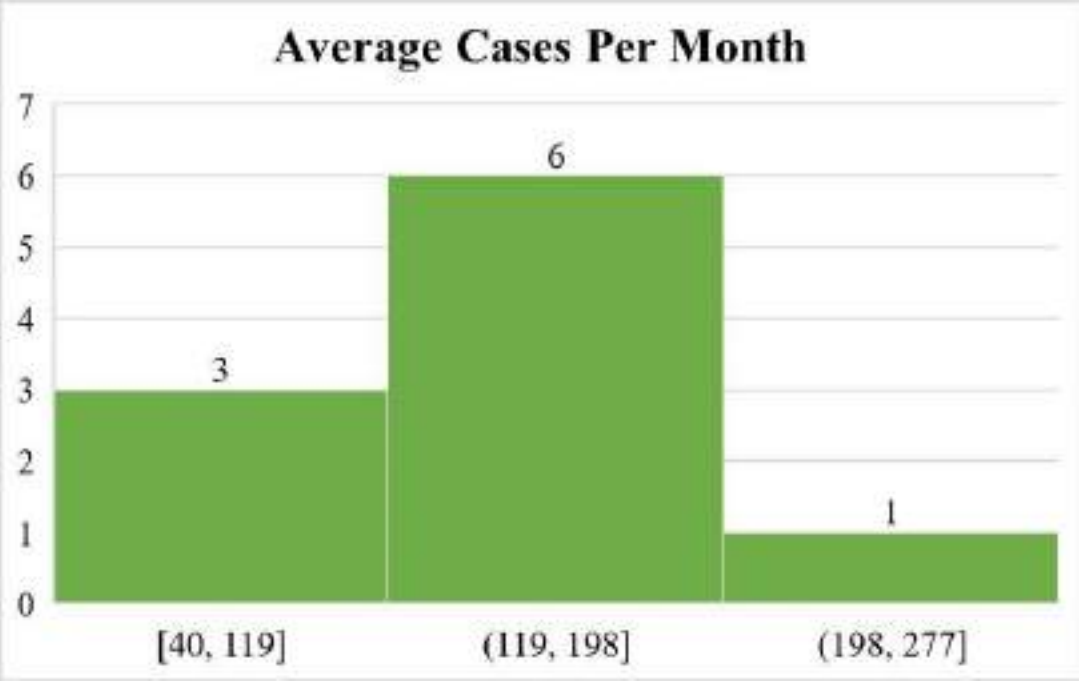
Type of Ambulance of the Pilots



Source: Primary Data

Figure: 5.5

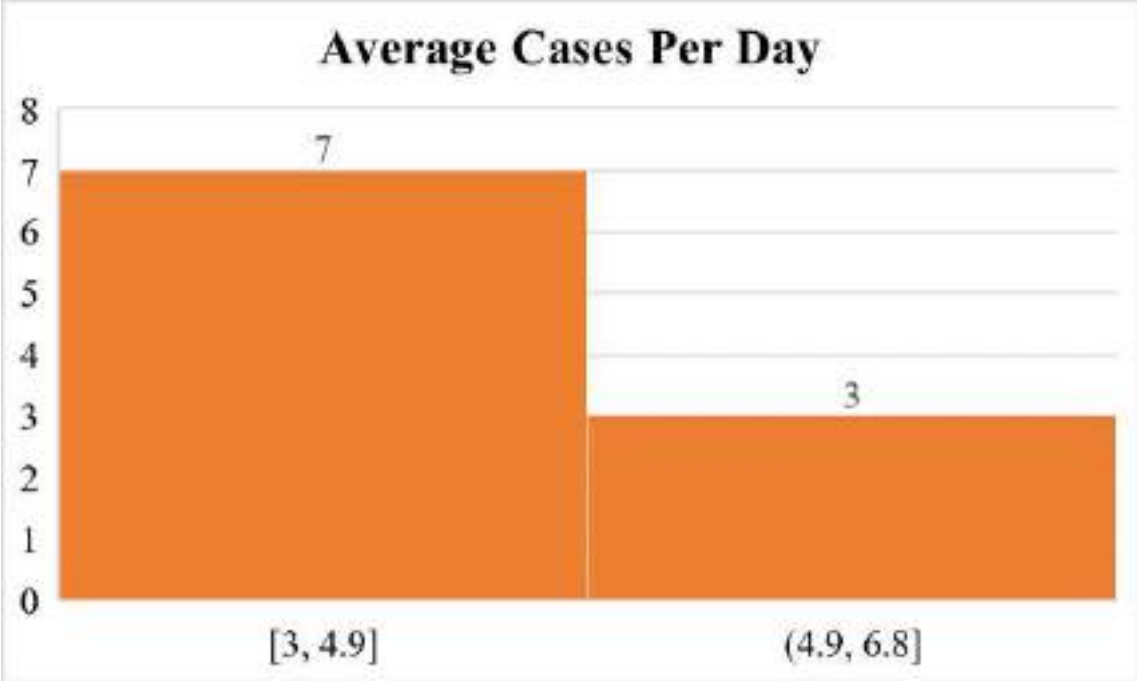
Average Cases Per Month of the Pilots



Source: Primary Data

Figure: 5.6

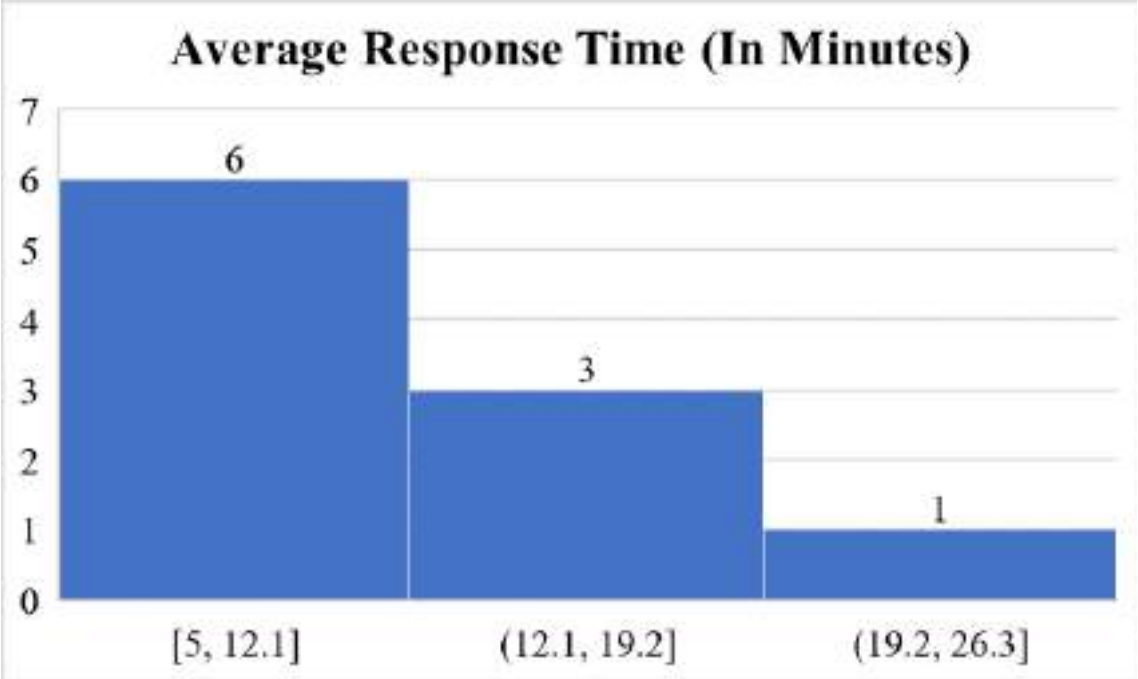
Average Cases Per Day of the Pilots



Source: Primary Data

Figure: 5.7

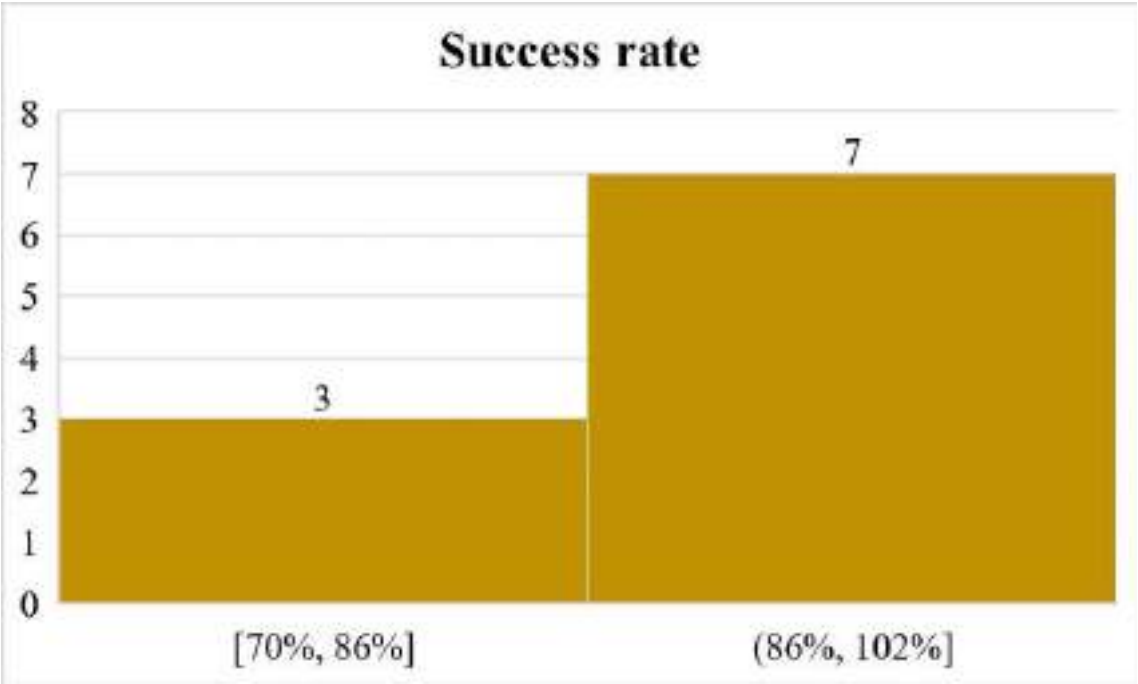
Average Response Time (In Minutes) of the Pilots



Source: Primary Data

Figure: 5.8

Success Rate of the Pilots



Source: Primary Data

Table: 5.2

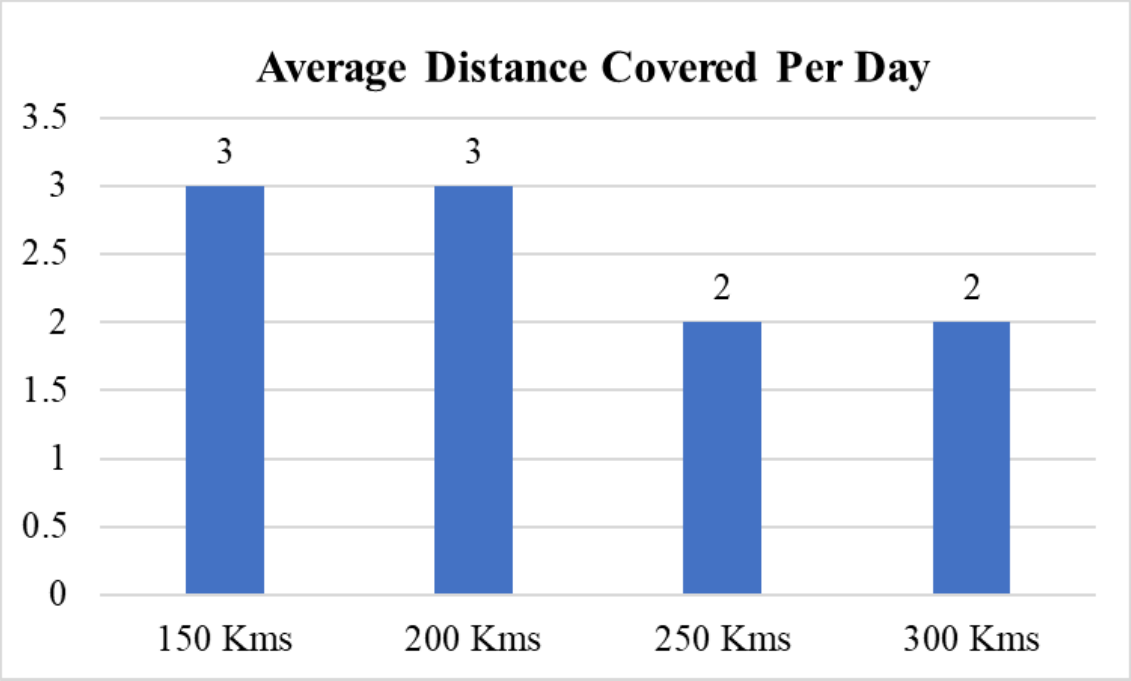
Regular Medical Emergency Cases of the Pilots

Sample No.	Regular Medical Emergency Cases:
1	Road Traffic Accident (RTA), Pregnancy
2	Road Traffic Accident, Pregnancy
3	Poison, RTA, Abdominal Pain (Due to Alcohol)
4	RTA, Pregnancy
5	RTA, Seizure (Due to Alcohol), Abdominal Pain (Due to Alcohol)
6	RTA, Assault, Hanging, Poisoning
7	RTA, Pregnancy, Chest Pain
8	RTA, Pregnancy, Poisoning
9	Pregnancy, Snake/Insect Bite
10	RTA, Pregnancy, Seizure, Snake bites

Source: Primary Data

Figure: 5.9

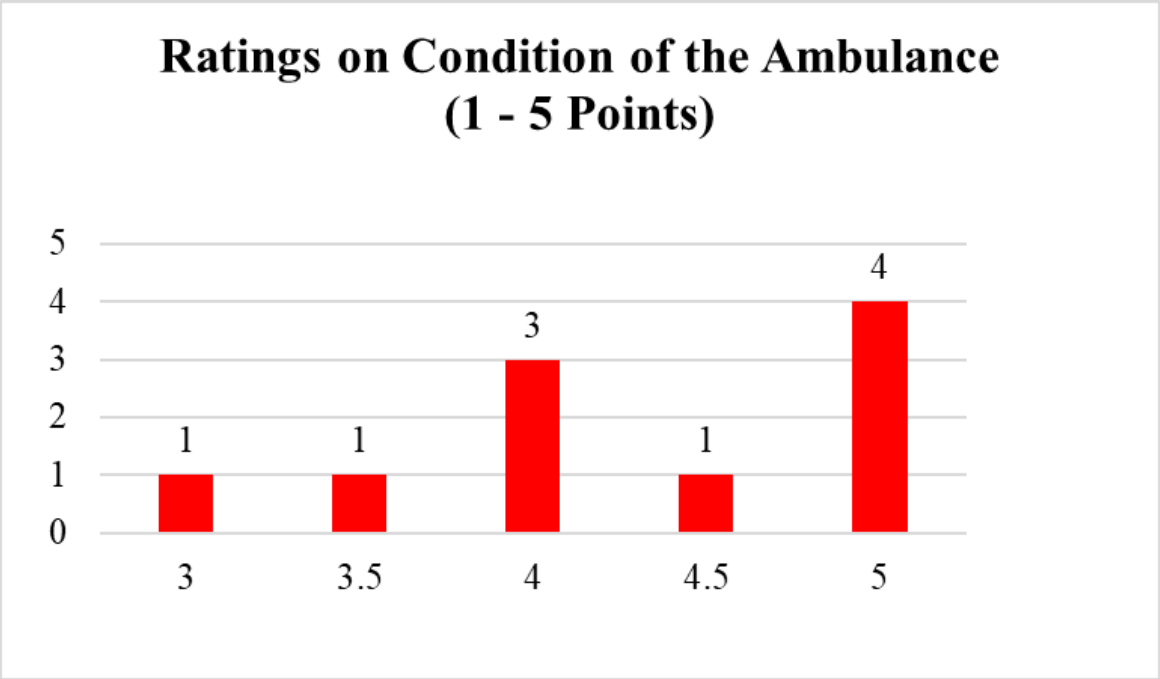
Average Distance Covered Per Day (In Kms) by the Pilots



Source: Primary Data

Figure: 5.10

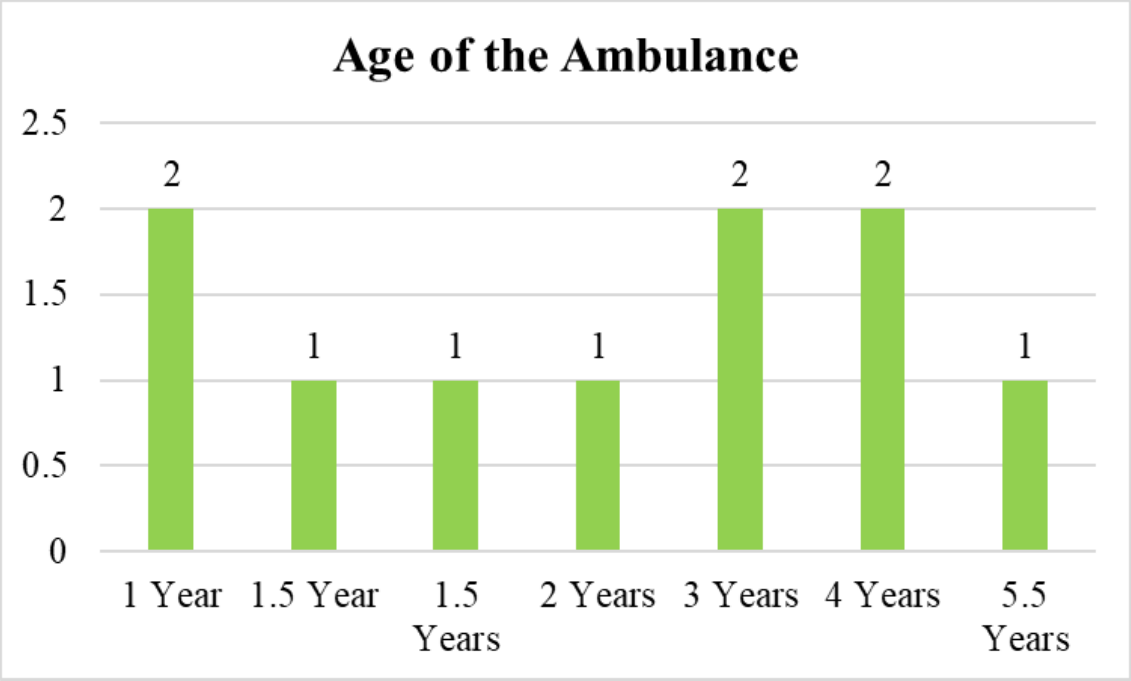
Rating on the Condition of the Ambulance by the Pilots



Source: Primary Data

Figure: 5.11

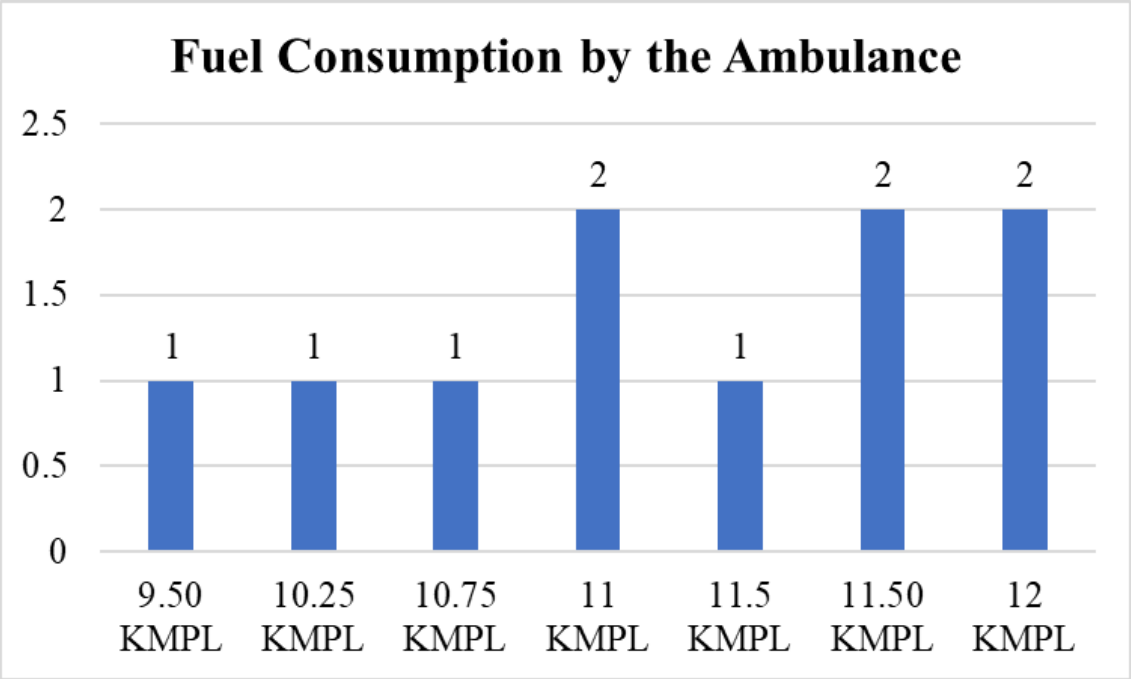
Age of the Ambulance



Source: Primary Data

Figure: 5.12

Fuel Consumption by the Ambulance



Source: Primary Data

5.2. Challenges of 108 Emergency Ambulance Pilots

The challenges experienced by the 108 emergency ambulance pilots while rendering emergency medical service in rural areas are presented in the following tables. The majority of the pilots are comfortable with the ambulance condition and its performance. However, few pilots felt that the ambulance should be replaced promptly once it has travelled the optimum distance. Also, one of the pilots reported that the usage of a stretcher for boarding patients and changing of tyres during punctures by a single person is difficult in the new model BS6 ambulance. No pilot has complaints on the Emergency Medical Technicians (EMTs). The pilots believe that the success of the 108 emergency ambulance services relies on the teamwork and cooperation of both the pilots and EMTs.

In rural areas, the people, attenders and patients do not seem to be co-operative enough while attending medical emergencies by the 108 ambulance pilots. Handling alcoholics at emergency scenes is quite challenging for the pilots. People involve in physical violence and verbal abuse in case of a delayed arrival of the ambulance to the emergency scene. Poor road conditions, lack of response from callers, poor address details and location information increases the response time to attend the emergency cases in rural areas. People's preference for selective hospitals and private hospitals becomes challenging for the drivers to work according to their protocol.

People at emergency scenes interrupt the EMTs first aid to the patient and pressure the pilots and EMTS to immediately transport the patients to the hospital. Fake calls, assault cases, pressure to increase speed while transporting are considered to be significant challenges experienced by the pilots in rural areas. Parking issues, traffic issues and delayed response at hospitals are the prominent challenges experienced at the hospitals while admitting the emergency cases at casualty. Poor road conditions, poor location information, assigning ambulances to a long-distance emergency scene, network connectivity problems and GPS issues are some of the notable problems experienced by the pilots oriented with the rural locations.

Table: 5.3

Challenges of Pilots Pertaining to Ambulance

Sample No.	Challenges - Ambulance
1	No
2	No
3	No
4	No

5	No
6	No
7	No
8	Ambulance condition can be improved - high distance travelled ambulance should be replaced with the new model vehicle
9	Stretcher issues, issues in change of stepney (BS6 model issues)
10	No

Source: Primary Data

Table: 5.4

Challenges of Pilots Pertaining to EMTs

Sample No.	Challenges - EMTs
1	No
2	No
3	No
4	No
5	No
6	No
7	No
8	No
9	No
10	No

Source: Primary Data

Table: 5.5

Challenges of Pilots Pertaining to Cases

Sample No.	Challenges - Cases
1	Cases don't co-operative while attending RTA
2	Co-operation issues, explanation of medical matters to illiterate people is tough, people have trust issues with GH and PHC, people who can afford prefer private hospitals, paranoid of getting affected by COVID-19 at GH, expecting more than a basic service in the Ambulance (BLS), patients' attenders argue with the pilots and pressure them to increase the speed of the vehicle while driving
3	Lack of knowledge to differentiate emergency and non-emergency cases, assaults on medical personnel and pilots, staging false emergencies to file an ordinary or fake case or complaint
4	Patients' attenders pressure for speed despite poor road conditions, poor communication in informing the correct location details or address to reach the scene, which increases the response time
5	People are not co-operative and problematic while providing first aid to the patient and pressure to transport immediately, issues by alcoholics: non-co-operation, verbal abuse – use of unparliamentary

	language etc., hospital preference issues, sentimental and emotive decision in selecting a hospital even during medical emergencies
6	Patients' attenders don't co-operate, pressure to transport the case before providing first aid
7	Lack of co-operation from cases, sometimes callers are not present in the scene, not providing proper address and route, fake calls (minimal), experience of getting insulted and embarrassed by alcoholics
8	Patients' attenders get angry in case of late arrival, people don't allow First aid and pressure for immediate transportation of case during RTA, patients' attenders shout at pilots to speed up the vehicle while transporting the case to health centres
9	RTA/Assault cases expect an immediate response despite poor road conditions and inaccurate location details, people use unparliamentary language and become violent and physically attack medical attendants in case of late arrival
10	Patients' attenders expect an immediate response of 108 ambulances, Rural/tribal people provide poor address details when approaching, pressure to admit in a private hospital, People physically attack and verbally abuse pilots and EMTs.

Source: Primary Data

Table: 5.6

Challenges of Pilots Pertaining to Hospitals

Sample No.	Challenges - Hospitals
1	Traffic issues, parking issues
2	A heavy flow of cases, traffic issues, requirement of medical emergency-based treatment, hospital delays to an extent of 10% while transporting the cases from the emergency scene
3	No
4	Delay in the admission process, parking issues at hospitals, obstructing the path for 108 Ambulances before casualty wards
5	Overflow of cases at hospitals, limited workers at hospital to handle scan/X-ray hence the additional responsibility falls on the Pilot & EMTs
6	No
7	No
8	Poor response at GH and questioning drivers why they did not visit the Medical College directly, menace of bikes parked before casualty
9	PHC or GH referral to Medical College is not acceptable for an invalid reason in a few cases
10	Delay in attending the cases at a hospital (Royapettah), Issues in admitting fire accident cases at GH or Medical College

Source: Primary Data

Table: 5.7

Challenges of Pilots Pertaining to Location

Sample No.	Challenges - Location
1	Identification of location & reaching the case is difficult in rural areas
2	No
3	Poor road conditions and single lane roads restricts speed while attending the emergency cases
4	Lack of knowledge on location, poor condition of roads, network connectivity issues that persist in rural areas delays reaching the scene on time
5	Traffic problem, multiple calls during an accident, callers not being present in the location to follow up further delays the attending of the case
6	No facilities in the parking place
7	No
8	Poor road conditions, parking issues
9	Poor road conditions, assigning ambulance to a long-distance emergency scene, GPS issues
10	Poor road facilities

Source: Primary Data

5.3. Expectations of 108 Emergency Ambulance Pilots

Installing the best GPS technology to track the callers' locations and assigning the cases to the nearby ambulance is the foremost expectation of the 108 ambulance pilots. Inbuilt location tracking with LCD device for a call with better network connectivity will facilitate quick reach to the emergency scene. Easy access to stepney at ambulance, introducing 108 airlifting for emergency transportation may help the cases to quickly reach a long-distance hospital. Adding more facilities to the existing 108 ambulances ensures effective services to the rural people during their medical emergencies. Therefore, it is very clear that the pilots are expecting and insisting on installing a best GPS technology, better network connectivity, improving caller's location tracking and additional facilities in the 108 ambulances to serve better in rural areas. Table 5.8 provides a vivid picture on the varied expectations of 108 emergency ambulance pilots to serve the people during medical emergencies.

Table: 5.8

Expectations of Pilots in 108 Emergency Ambulance Services

Sample No.	Expectations of 108 Ambulance Pilots
1	Inbuilt Location Tracking at Ambulance
2	Steps to be taken to reduce the call time, call centres should assign the ambulance by proper location tracking considering the railway gates,

	road condition, traffic conditions etc., installing LCD device for calls & location tracking will be useful
3	GPS can be improved to access the exact location details and also to assign the ambulance in the nearby distance, location tracking for an emergency scene can be added, network issues shall be reduced
4	Network connectivity can be fixed
5	GPS issues, problem in locating the case and place should be sorted
6	Change of ordinary steering to power steering in Ambulance
7	No
8	ECG facility at Ambulance can be added, GPS technology can be improved to facilitate quick reach to the location
9	Installing technology to track the 108 Callers' locations properly will be helpful to reach the scene on time, addressing GPS issues in assigning cases from different districts, similar village name issues should be eliminated, GPS should accurately provide location information and Providing Easy access to Stepney at Ambulance will be helpful
10	108 Airlifting can be introduced in Tamil Nadu to transport emergency cases to hospitals at a long distance, more facilities can be brought into 108, facilities can be provided for doing sutures in the ambulance itself, oxygen cylinder operation should be done while running, water facility at ambulance, GPS tracking of the caller will be helpful

Source: Primary Data

5.4. Profile of the Emergency 108 Ambulance Emergency Medical Technicians (EMTs)

The profile of 108 ambulance emergency medical attendants include age, education, work experience, workplace coverage, type of ambulance, average cases per month and day, average response time, success rate, regular medical emergency cases, medical services provided at ambulance, ratings on the quality of training provided to handle medical emergencies, level of confidence in handling emergencies, availability of medical drugs and other requirements at ambulance, availability of medical equipment, condition on the medical equipment and the details on the situation that requires doctor’s intervention. The following tables gives a clear picture of the profile of the 108 ambulance emergency medical technicians.

From the data collected, the researchers infer that the average age of EMTs who participated in the study range from 22 to 31 years. Most of them are science graduates and possess diplomas or degrees in nursing. The work experience of the EMTs ranges from 1 year to 13 years and serve in the rural areas of the Kancheepuram district. Most of the EMTs assist in the BLS type ambulances followed by ALS type ambulances. EMTs are handling 100 to 122 emergency cases per month and 4 to 7 cases per day. The average response time of the 108 ambulances to reach the emergency scene ranges from 5 to 12 minutes in most cases. The

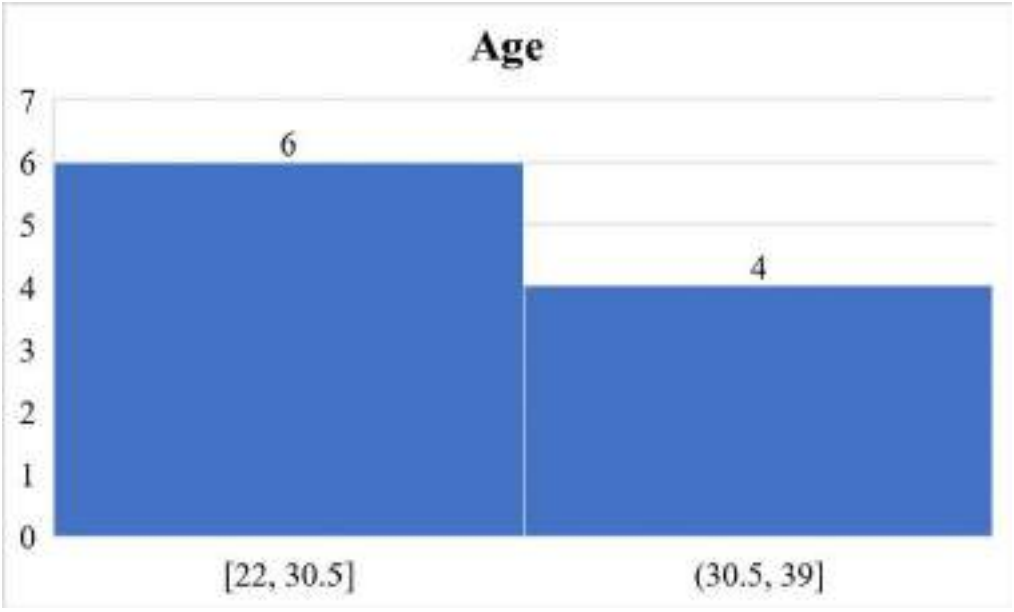
average success rate of the EMTs in delivering medical services during emergencies ranges from 90 to 100 percent.

The regular medical emergency cases handled by the 108 EMTs cover road traffic accidents (RTAs), pregnancy-related emergencies, seizure, hypoglycaemia, poisoning, chest and abdominal pain and also breathing difficulties. The medical services rendered at 108 ambulances include first aid, wound care and dressing, vitals monitoring, managing labour using pregnancy kit, management of O2 supply and breathing, management of bleeding and splint for fractures, managing IV fluids and related medications after consulting with the Emergency Care Centre (ECC) and Doctors.

The ratings provided by the EMTs for the quality of training in handling emergency cases, level of confidence in handling emergency cases, availability of medical drugs and other requirements at ambulance, availability of medical equipment and condition of the medical equipment range from 4 to 5 points. The ratings evidence the efficient function of 108 emergency ambulances in serving rural communities during medical emergencies. The EMTs feel that the intervention of doctors may help when they come across emergencies like mass accidents, handling covid-19 cases, RTA with amputation, critical head injury, cardiac arrest, unconscious cases, hypertension cum pregnancy, preterm labour, post cardiopulmonary resuscitation (CPR) for critical cases and during network problem while taking advice from doctors to provide critical care.

Figure: 5.13

Age of the EMTs



Source: Primary Data

Table: 5.9

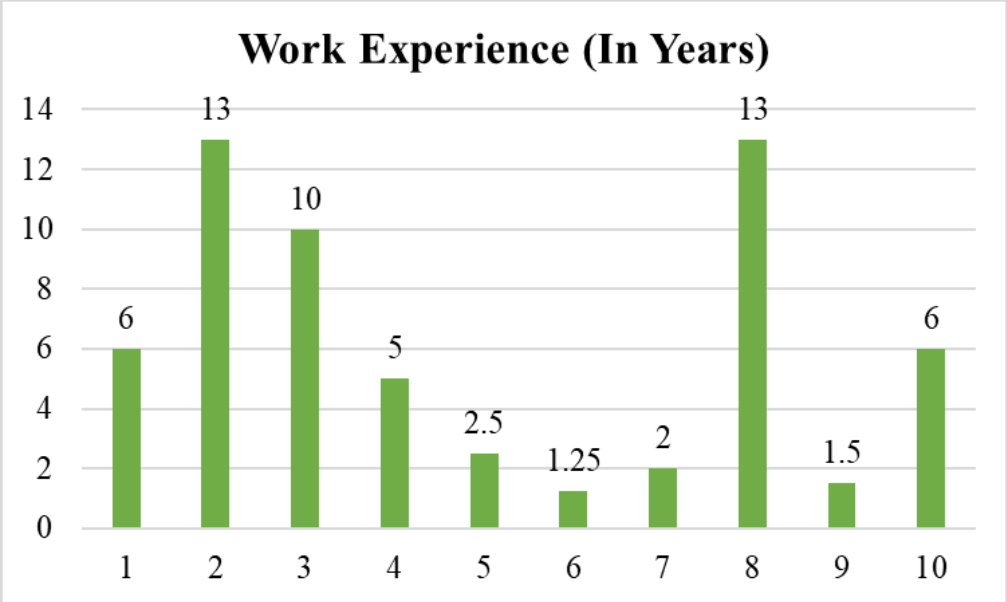
Educational Qualification of the EMTs

Sample No.	Educational Qualification
1	Anaesthesia Technician, BSc Zoology
2	HSE Pure Science, BSc Zoology, Ambulance Technician
3	Diploma in Practical Nursing
4	Male Nursing Assistant
5	BSc Chemistry
6	BSc Nursing
7	BA, MPHW, Health Inspector Course, Dip in Nursing Assistant
8	MSc Biochemistry
9	MSc Zoology B Ed
10	BA English, MNA

Source: Primary Data

Figure: 5.14

Work Experience (In Years) of the EMTs



Source: Primary Data

Table: 5.10

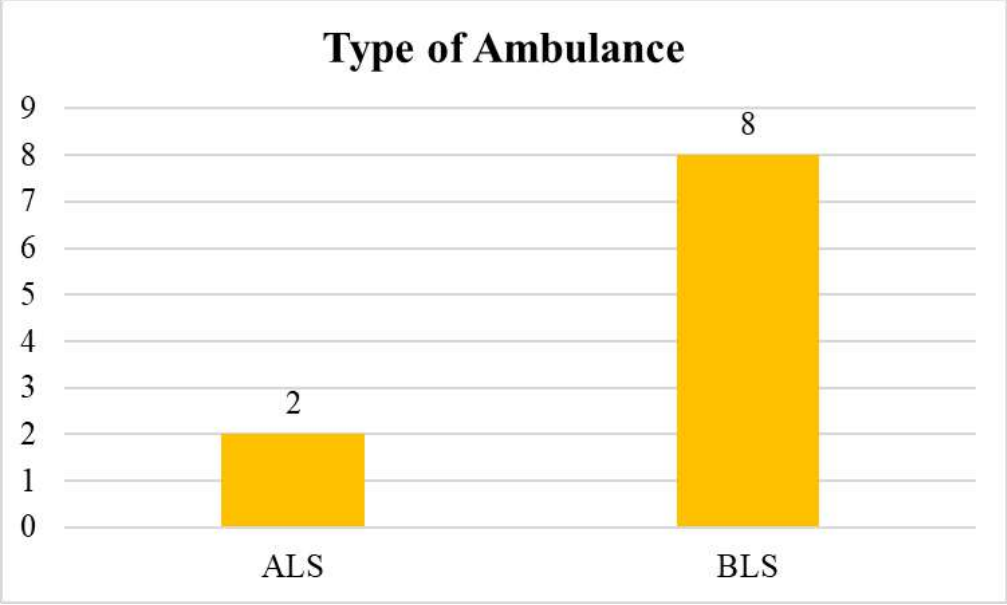
Workplace of the EMTs

Sample No.	Workplace
1	Oragadam
2	Acharapakkam
3	Tirumalpur - Agaram
4	Chengalpet
5	Sholinganallur
6	Sriperumbudur
7	Tambaram
8	Thirukazhukundram
9	Salavakkam
10	Kelambakkam

Source: Primary Data

Figure: 5.15

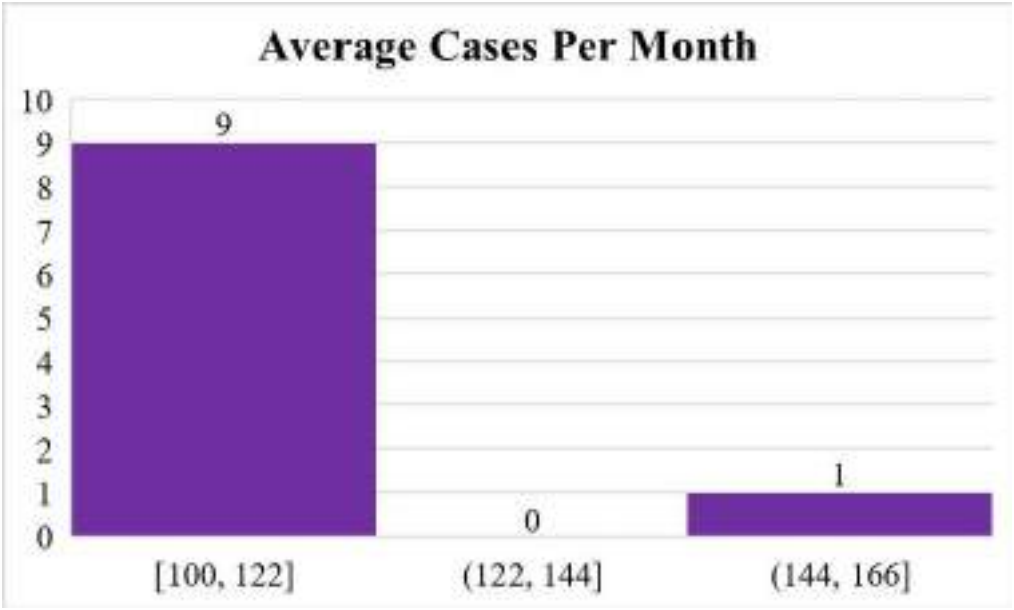
Type of Ambulance of the EMTs



Source: Primary Data

Figure: 5.16

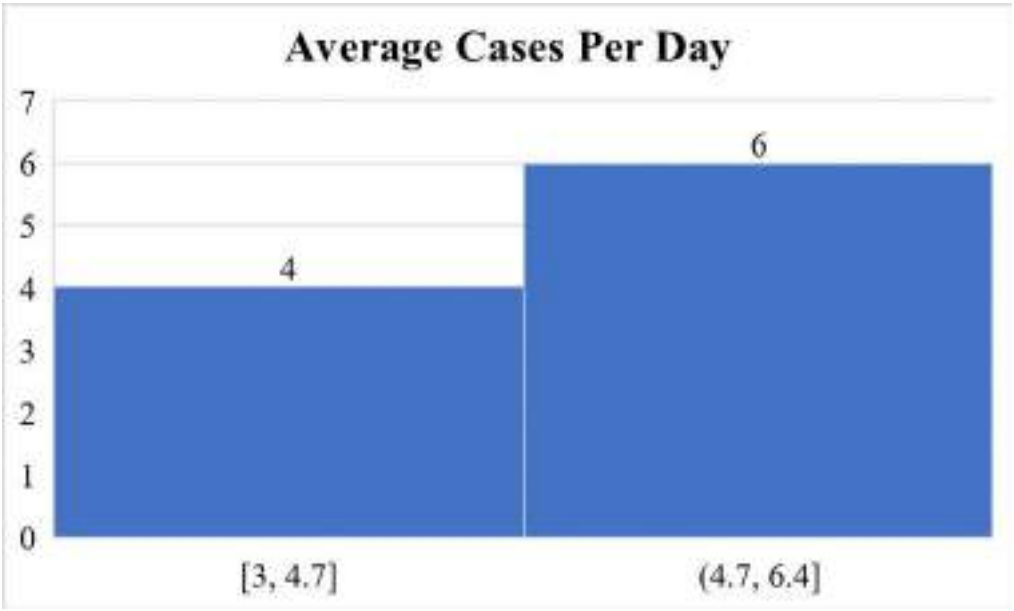
Average Cases Per Month of the EMTs



Source: Primary Data

Figure: 5.17

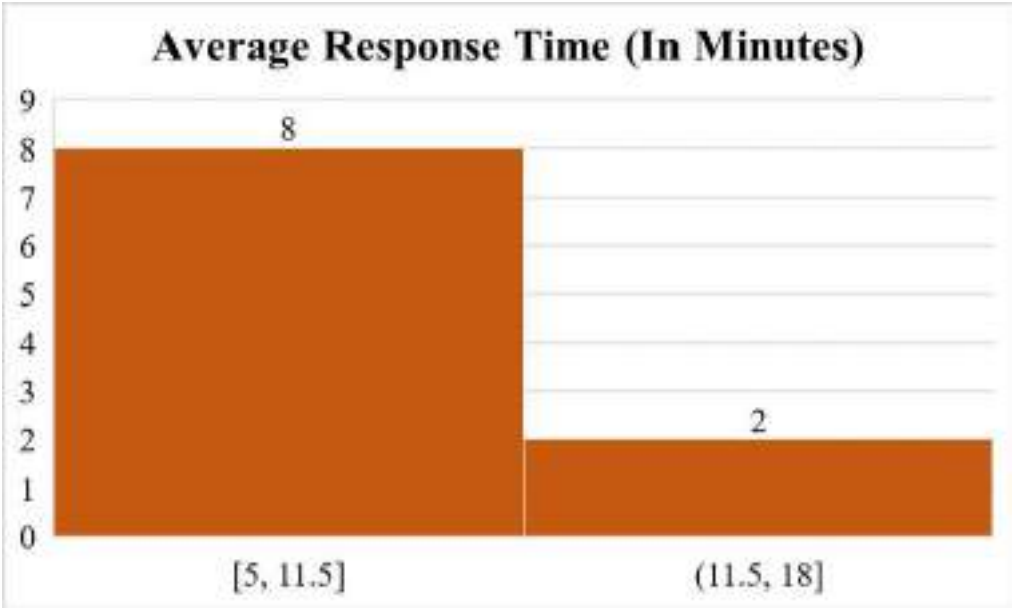
Average Cases Per Day of the EMTs



Source: Primary Data

Figure: 5.18

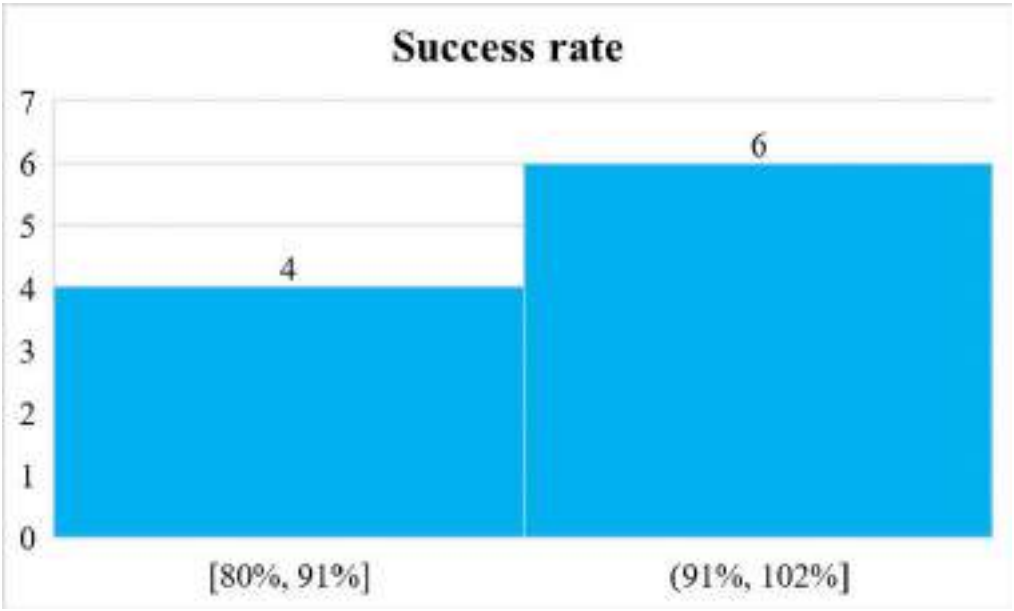
Average Response Time (In Minutes) of the EMTs



Source: Primary Data

Figure: 5.19

Success Rate of the EMTs



Source: Primary Data

Table: 5.11

Regular Medical Emergency Cases of the EMTs

Sample No.	Regular Medical Emergency Cases
1	RTA, Pregnancy, Breathing Issues,
2	RTA, Pregnancy
3	Abdominal Pain (Alcoholic), RTA, Poisoning (Rat Killer)
4	RTA, Breathing Difficulty, Hypoglycaemia (Diabetes),
5	RTA, Assault, Chest Pain, Seizure, Breathing Difficulty
6	RTA, Seizure with Fever, Pregnancy, Poisoning, Suicide,
7	RTA, Hypoglycaemia, Chest Pain, Breathing Difficulty
8	RTA, Poisoning, Pregnancy,
9	RTA, Chest Pain, Pregnancy, Abdominal Pain
10	RTA, Pregnancy, Seizure, Hypoglycaemic, Unknown cases

Source: Primary Data

Table: 5.12

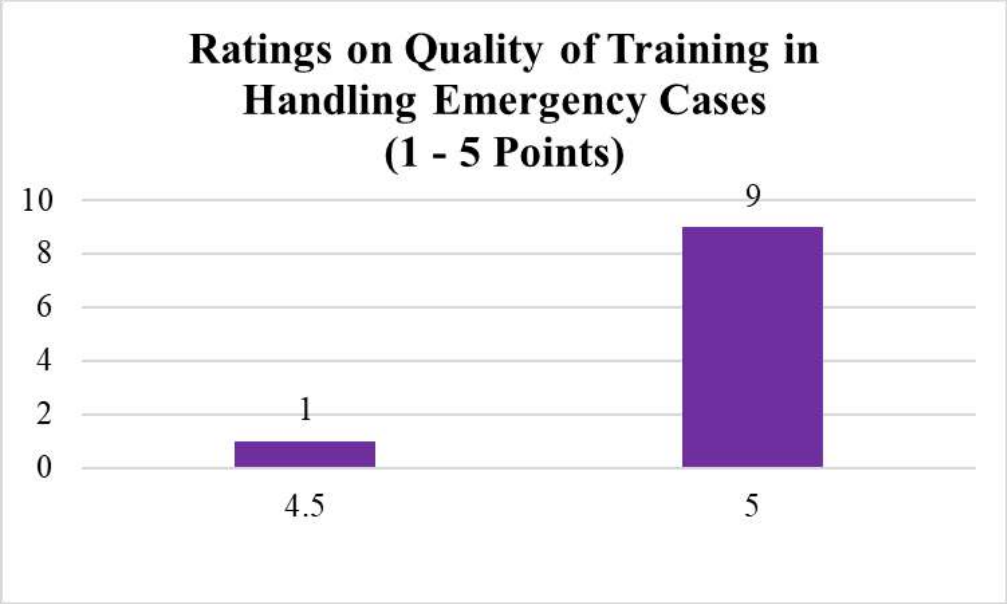
Medical Services Provided at Ambulance by the EMTs

Sample **No.**	**Medical Services Provided at Ambulance**
1	First Aid, O2 Management, Airway Support, Bleeding, Fracture, Delivery kit
2	First Aid, Blood Control, Splint for Fractures, Dressing, IV Fluid, O2 Support, Vitals Check and Monitoring
3	First Aid, BP, Pulse, Temp, CBG Sugar level, Medication, IV Fluids, Splint for Fracture
4	First aid, Breathing Control, Dressing, BP, IV line, Medications, Fracture cases, IV Fluids
5	First Aid, Medications, Splint for Fractures, Dressing, IV line, IV fluids, O2 Supply, Vitals Monitoring
6	First Aid, Splint for Fractures, Bleeding Arrest, Dressing, IV Fluid, Vitals Monitoring, IV Line, O2 Supply
7	First Aid, O2 Supply, Medications, Bleeding Control, IV Fluid, IV line, Airway Management, Vitals Monitoring, Splint for Fractures
8	First Aid, IV Fluid, Medications, Dressing, Splinting, O2 Supply
9	First Aid, O2 Supply, IV Line, IV Fluids, Splint for Fractures, Vitals Monitoring, Injections
10	First Aid, Wound Care, Dressing, Splint Fractures, IV Line, IV Fluids, Medications, Injections, Vitals Monitoring

Source: Primary Data

Figure: 5.20

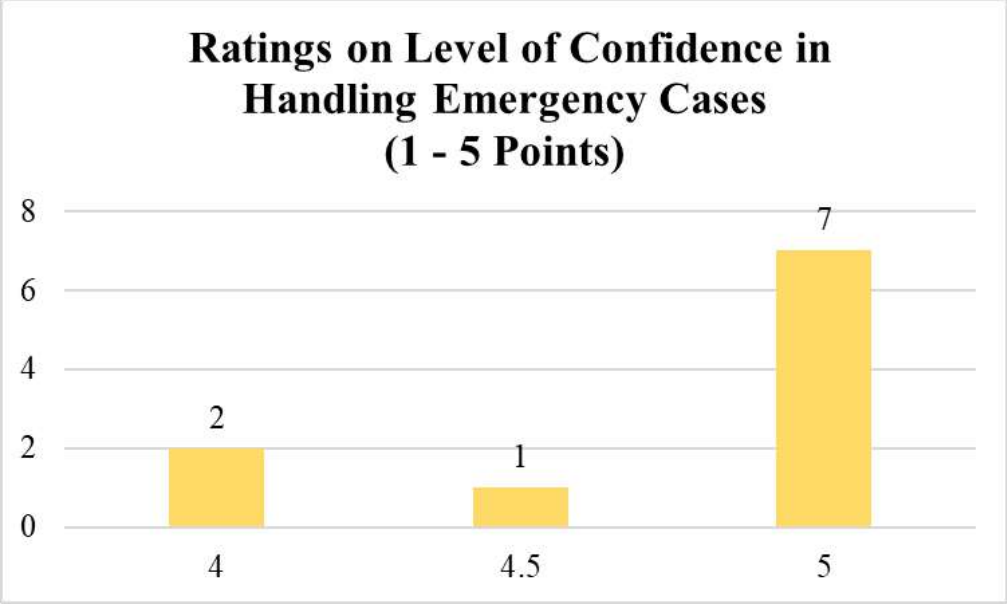
Ratings on Quality of Training in Handling Emergency Cases by the EMTs



Source: Primary Data

Figure: 5.21

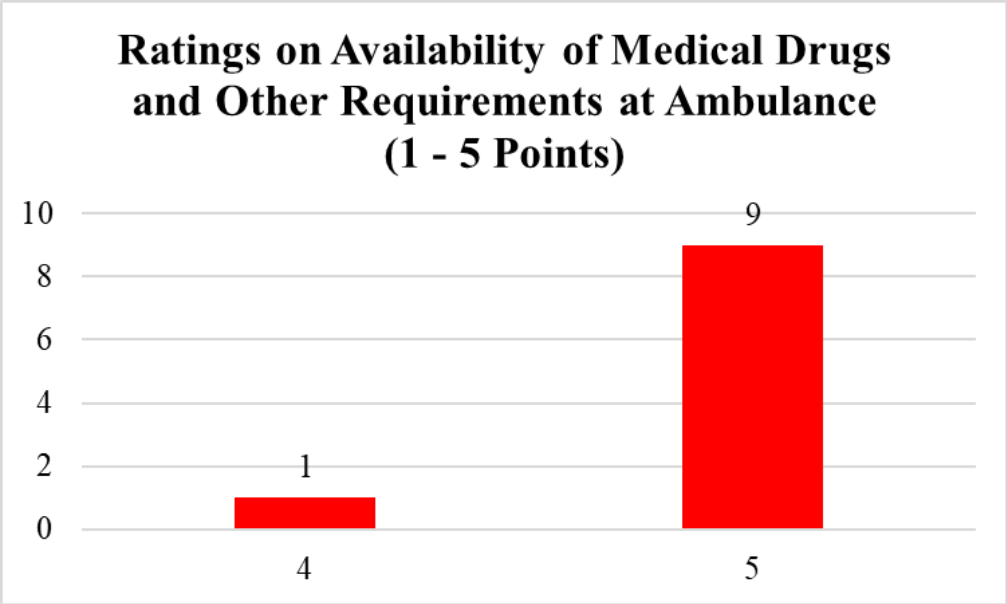
Ratings on Level of Confidence in Handling Emergency Cases by the EMTs



Source: Primary Data

Figure: 5.22

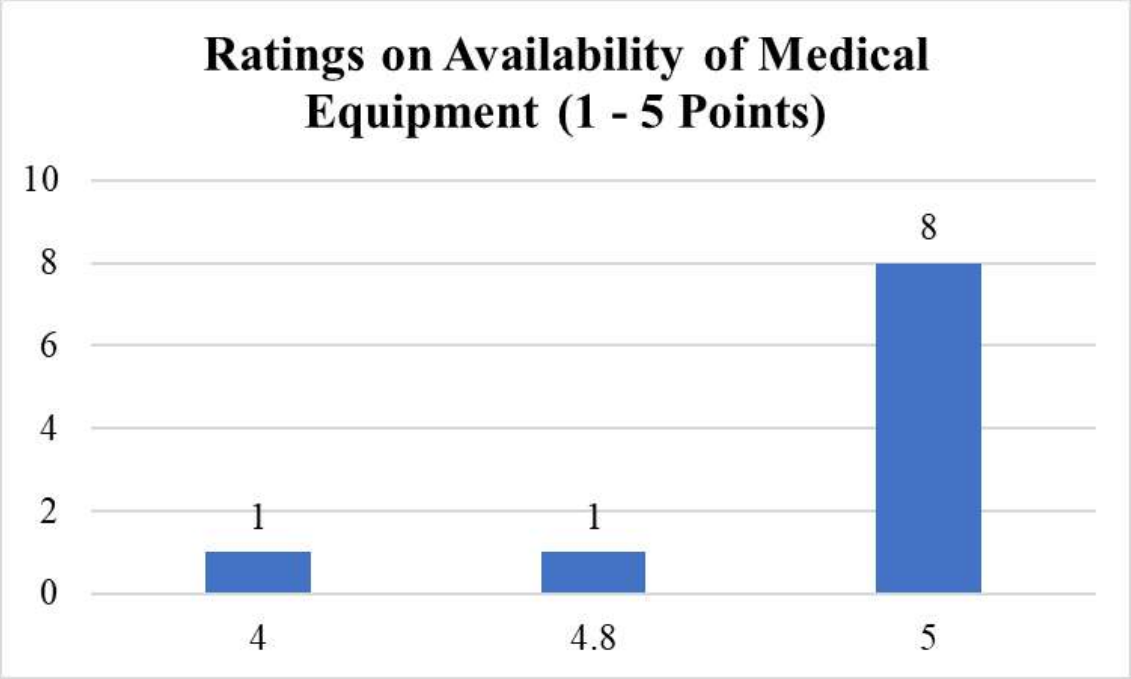
Ratings on Availability of Medical Drugs and Other Requirements at Ambulance by the EMTs



Source: Primary Data

Figure: 5.23

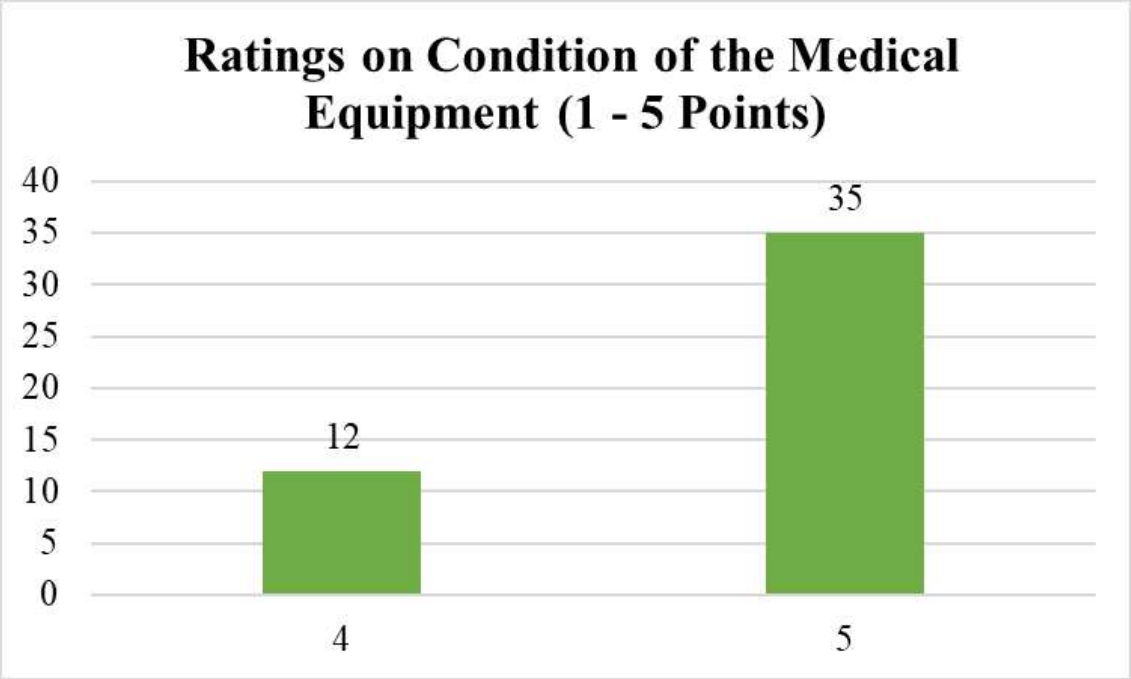
Ratings on Availability of Medical Equipment by the EMTs



Source: Primary Data

Figure: 5.24

Ratings on Condition of the Medical Equipment by the EMTs



Source: Primary Data

Table: 5.13

Situations Requiring a Doctor's Intervention

Sample No.	Situations Requiring a Doctor's Intervention
1	Mass Accidents
2	Handling COVID-19
3	RTA - Amputation & Cardiac Arrest
4	Unconscious Cases
5	Unconscious Cases
6	Hypertension Cum Pregnancy
7	Preterm Labour
8	RTA - Critical Head Injury
9	Post CPR for Critical Cases
10	Network Problem while taking advice from Doctors - Critical care

Source: Primary Data

5.5. Challenges of 108 Emergency Ambulance Emergency Medical Technicians

The challenges of Emergency Medical Technicians (EMTs) pertaining to the ambulance, pilots, cases, hospitals and locations are presented in the following tables. The majority of the EMTs don't have any complaints in the 108 ambulances. However, speed limit and inserting IV lines for the case in the 108 ambulances while running act as a hindrance to provide emergency medical care to the people. EMTs are comfortable with the 108 ambulance pilots and only in rare circumstances help from the pilots are limited, for instance, while attending cases during night shift due to lack of sleep. Handling the emergency cases in rural areas are quite challenging in varied ways. Lack of co-operation while performing first aid and expecting an immediate transportation of the case to hospitals is the primary problem faced by EMTs in rural scenarios.

Problems arising due to alcoholics is common in the rural scenario, especially managing alcoholics while administering medical care during an emergency is a tedious task. Fake calls, calls for a non-emergency medical condition, verbal abuse, harsh behaviour with the EMTs and wrong primary information to the call centres are the major issues caused by the alcoholics. Poor communication of rural people in providing address details and location information is a huge hindrance and leads to increased response time to reach the emergency scene in rural areas. Lack of awareness about the 108 emergency ambulance services and treating the medical emergencies with indigenous or traditional methods of medicine among the rural and tribal population is quite challenging. Preference of private hospitals or selective GHs or Medical Colleges is one of the problems caused by rural people.

Managing assault cases in rural scenario sometimes becomes a threat for the EMTs of 108 ambulances. Whenever two parties get into fights and it leads to physical assaults, immediately they call and approach 108 ambulances. However, administering medical care to these cases are challenging as the opposite party will prevent EMTs from treating the cases. In certain cases, the people pressure for admission at Medical Colleges for a basic assault case in order to strengthen the legal proceeding against the opposite parties. Concerning hospitals, the EMTs of 108 ambulances experience challenges like lack of response to the emergency cases at selective GHs, parking issues before the casualty building, waiting time at hospitals delay in receiving Inter Facility Transfer (IFT) cases and GHs transferring the cases to Medical Colleges without admissions. Poor road conditions in rural areas, confusions in similar names for villages are the prominent challenges faced by the EMTs pertaining to the rural locations.

Table: 5.14

Challenges of EMTs Pertaining to Ambulance

Sample No.	Challenges - Ambulance
1	No
2	No
3	No
4	Managing IV line inside the ambulance while running is a tough task
5	No
6	No
7	No
8	No
9	No
10	Speed limit of the ambulance can be increased

Source: Primary Data

Table: 5.15

Challenges Pertaining to Pilots

Sample No.	Challenges - Pilots
1	No
2	No
3	No
4	No
5	No
6	No
7	During Night Shift - Help from Pilot is limited due to lack of sleep
8	No
9	No
10	No

Source: Primary Data

Table: 5.16

Challenges of EMTs Pertaining to Cases

Sample No.	Challenges - Cases
1	Public don’t allow performing of first aid and expect immediate shifting of the case to the hospital. Managing alcoholics during medical emergencies is difficult.
2	Access to rural locations is not easy. Lack of clear address details increases the response time to reach the scene. Often People behave in a harsh manner and make it difficult while administering the medical care during emergencies, People don’t allow first aid to be performed and pressure for immediate transportation of the case to a hospital. Sometimes, the primary information provided by the caller

	about the medical emergency seems to be incorrect. Fake calls from alcoholics is common in rural areas. People unnecessarily call 108 ambulances for the Non-Emergency medical condition.
3	While attending assault cases, people act as if it is a medical emergency and insist for admission at GH or Medical College in order to have a strong legal proceeding against the opposite party involved in the fight or assault. In rural areas, treating and transporting alcoholic cases are tiresome. People approach 108 ambulances for minor dog bites and non-emergency cases. Public always insist for immediate shifting of people to hospital without allowing the EMTs to provide first aid in majority of the cases.
4	Treating the cases with indigenous or traditional methods of medicine. Carelessness about the emergency medical care. Problematic behaviour of alcoholics during medical emergencies. Lack of co-operation while treating the emergency cases and harsh behaviour of people when the ambulance is delayed to the scene are common in the rural areas.
5	Overcrowding in the emergency scene, especially by alcoholics. Non-co-operation of the cases in emergency scenes to be given first aid. Poor communication of the people in rural areas and slums hinders the management of medical care to the patients during emergencies.
6	Fake calls, communication problem with alcoholic callers, lack of respect, lack of cooperation, lack of safety, pressure to transport to selected or preferred hospital and verbal abuse are notable challenges amongst the rural cases.
7	Fake calls by alcoholics, pressure on preference of admission at private hospitals, lack of awareness about 108 Ambulances and handling unknown cases without attenders are the challenges experienced in rural areas.
8	Non-Emergency calls, rejection of first aid and asking for immediate transportation. More attenders want to accompany the patient while attending assault cases and insist on admission at medical college to file a strong police case.
9	Alcoholic cases, assault cases, lack of cooperation, pelting stones at the ambulance by people involved in assault cases, two parties fight and in case of any assault, the opposite parties prevent treatment to the other party.
10	Lack of co-operation from the people and harsh behaviour to the EMTs and pilot with verbal abuse. Lack of awareness on medical conditions and treatment especially among the tribals. Preferring the nearby private hospital or any selected hospital for admission by avoiding PHCs or GHs are the common challenges.

Source: Primary Data

Table: 5.17

Challenges of EMTs Pertaining to Hospitals

Sample No.	Challenges - Hospitals
1	No
2	No
3	Non-co-operation at Hospital of Ranipettai District, Confusion in assigning ambulances to the particular areas (Purisai Village), Poor response at Arakkonam Hospital for admission of emergency cases.
4	Parking issues before casualty
5	No
6	Waiting time at hospital due to increased number of cases
7	Delay in receiving the case at GH especially during Inter Facility Transfer (IFT) Cases and Poor response at GH/Medical College,
8	Nearby GH not responding and requesting Immediate transport to Medical College without admitting the patients experiencing a medical emergency
9	Delay at hospitals is possible during the non-availability of beds
10	Delay in taking the cases at GH (Thiruporur) and expecting EMT to take the case to a different GH (Chengalpet) without referral. PHC rarely refers to Private Hospital.

Source: Primary Data

Table: 5.18

Challenges of EMTs Pertaining to Location

Sample No.	Challenges - Location
1	No
2	Poor Road Condition
3	Confusion in Village Names (2 Thandalam), GPS issues in assigning cases to the nearest ambulance
4	Delay in attending and accessing the cases in rural location
5	No
6	No
7	Location is not safe and comfortable for the EMTs, No proper address intimation by the caller to locate the scene during a medical emergency
8	Poor Roads
9	No
10	No

Source: Primary Data

5.6. Expectations of 108 Emergency Ambulance Emergency Medical Technicians

The EMTs of 108 emergency ambulances strongly insist the provision of awareness to the rural people about the usage of 108 ambulances during medical emergencies. Self-transportation during accident cases and handling emergency cases with indigenous medical practices or traditional medications should be avoided. Call centres should procure accurate information on the medical emergency and the location of the emergency scene. Providing assistants to the EMTs while attending RTA cases will be helpful to manage the emergency cases better when the ambulance is on road. Increased number of ambulances in the accident-prone zones, live video conferencing with doctors, periodical replacement of medical equipment, improved GPS technology, adding more medical facilities for the 108 ambulances are the expectations of EMTs to render better service to rural people. The GHs should take utmost care of the emergency cases and should transfer the cases to medical colleges only during critical situations. The EMTs also insist that the 3-shift system with 8 hours each and weekly counselling will improve their mental health. This will enable the EMTs to serve the people effectively and efficiently. Table 5.19 clearly displays the varied expectations of the 108 ambulance EMTs pertaining to the 108 Emergency Ambulance Services to provide better services to the people in rural area.

Table: 5.19

Expectations of EMTs in 108 Emergency Ambulance Services

Sample No.	Expectations of 108 Ambulance Pilots
1	People should avoid self-transportation during medical emergency especially during accident with fractures. Awareness to public to use 108 Emergency Ambulance should be provided in rural areas
2	Expecting an assistant for the EMT to support while managing emergency care for RTA cases during transportation. Better coordination with call centres on primary case information and location details is expected for better handling of emergency cases
3	Live video conferencing, reduced network problem, improved GPS performance, installing Sutures facility in the ambulance
4	Ambulance count should be increased in the places prone to frequency RTAs and medical emergencies. Administration of Anaesthesia to the cases and installing ventilators in ambulance to handle trauma cases effectively
5	Training to stitch wounds with sutures can be provided to EMTs and to permit the same in 108 ambulances

6	Increase in number of Ambulances, 3 Shift system with 8 hours each, replacement of medical equipment every year, customised Stretcher to handle labour cases better
7	EMTs should be provided with counselling services on a Weekly basis for better mental health and the issues faced by EMTs should be addressed regularly and effectively
8	GH should take care of the emergency cases to the utmost level and should not transport to Medical college regularly for less emergency cases
9	No
10	Awareness on 108 Ambulance Services should be provided to rural people for better co-operation. Negative sentiments in availing ambulance services should be removed from the minds of rural people.

Source: Primary Data

This chapter vividly expressed the brief profile, challenges and expectation of 108 ambulance pilots and EMTs in providing 108 Emergency Ambulance Services in rural areas. It is further clarified that the sincere commitment and teamwork of the pilots and EMTS is the predominant reason for the success in saving the rural lives during medical emergencies. Therefore, it is pertinent to address and reduce the challenges of pilots and EMTs of 108 ambulances and to meet their expectations for the further effective penetration and efficient emergency medical care to the rural people.

CHAPTER - VI

BRIEF PROFILE OF THE VILLAGES COVERED IN THE STUDY AND THEIR PERCEPTION ON 108 EMERGENCY AMBULANCE SERVICES

CHAPTER VI

BRIEF PROFILE OF THE VILLAGES COVERED IN THE STUDY AND THEIR PERCEPTION ON 108 EMERGENCY AMBULANCE SERVICES

The present study has collected data from 9 selected villages within 9 rural sub-districts of the Kancheepuram district in the state of Tamil Nadu. A Brief profile of each village viz. Mannivakkam village (Chengalpattu sub-district), Perukkaranai village (Cheyyur sub-district), Purisai village (Kancheepuram sub-district), Mamandur village (Maduranthakam sub-district), Sittalapakkam village (Sholinganallur sub-district), Nandambakkam village (Sriperumbudur sub-district), Vengapakkam village (Tambaram sub-district), P.V.Kalathur village (Tirukalukundram sub-district) and Salavakkam village (Uthiramerur sub-district) are exhibited in this chapter. The perception of rural people living in the aforementioned selected villages is precisely presented based on the field investigator's observation during the data collection process of the research work.

6.1. Mannivakkam Village

The Mannivakkam village is located in the Chengalpattu rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 3,262 households with a population of 13,308 people which includes 6,700 males and 6,608 females.

The siren of an ambulance is a common sound to the people of Mannivakkam, as there is a parking lot for a private hospital's ambulances located in their area. Since the parking area of these private ambulances are in a closer radius to the village, the people prefer these ambulances to the 108 Ambulances. Annai Arul Hospital, a private hospital is the closest large medical facility available to this village. Tambaram Government Hospital is the closest public healthcare premises to the village; however, it is slightly farther than the private one. Other than these two hospitals, there are several clinics and pharmacies available on the main roads and nearby areas of Manivakkam.

The awareness regarding the COVID Vaccination is quite high amongst the rural inhabitants of Manivakkam. People had a notion that the 108 Ambulances are slow and private ambulances reaches quicker to the destinations. Hence, it was observed that most of them prefer the private ambulances even though the charges were high. The issue of time consumption has made them reluctant to opt for the free service provided by 108 Ambulances. Therefore, more awareness on the facilities and feasibilities in 108 ambulance services could be circulated among the people to change their mindset and increase their usage.

Figure: 6.1

Data Collection at Mannivakkam Village (1)

Source: Photo Captured During Data Collection for the Research

Figure: 6.2

Data Collection at Mannivakkam Village (2)

Source: Photo Captured During Data Collection for the Research

6.2. Perukkaranai Village

The Perukkaranai village is located in the Cheyyur rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 586 households with a population of 2,366 people which includes 1,172 males and 1,194 females.

Figure: 6.3

Data Collection at Perukkaranai Village (1)

Source: Photo Captured During Data Collection for the Research

Perukkaranai village has a total ambience of a rural scene, and the nearest Primary Health Care centre is located 10 kms away near Kayappakam. Other than this facility, if the villages need any health/medical assistance they have to travel 9 kms to reach the Melmaruvathur Aadhi Parasakthi Private Hospital or 10-12 kms to reach the Madurantakam Government Hospital or 25+ kms to reach the Chengalpattu Government hospital. A local village leader runs a mini ambulance service for the people of Perukkaranai which reduces their fatigue to reach medical facilities. Even though there is a mini ambulance available, it cannot compensate to a real ambulance. During desperate times such as non-availability of the mini ambulance or the leader, it is crucial for the villagers to access a 108 ambulance to reach hospitals which are located far away. Only few people own vehicles in the village and public services are their only reliance to reach medical facilities. This makes the situation of the BPL people more difficult. An allotment of a nearby parking area for the 108 ambulances or a

separate 108 ambulance service dedicated to this village and its surroundings will lower the desperation of the people during medical emergencies.

Figure: 6.4

Data Collection at Perukkaranai Village (2)

Source: Photo Captured During Data Collection for the Research

6.3. Purisai Village

The Purisai village is located in the Kancheepuram rural sub-district of Kancheepuram District in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 580 households with a population of 2323 people which includes 1154 males and 1169 females.

The Purisai village is a pure rural area. However, facilities such as Amazon/Flipkart reach them better than the 108 ambulances. Since the village is in the middle of three districts (Kancheepuram, Ranipetta and Vellore), most of the drivers ignore the complaints/requests from this village. The Kanchipuram Railway Gate is the nearest 108 ambulance picking area from this village which is located 12 kms away. The conditions of roads are also quite pathetic since a construction of bridge is ongoing in the area. Kanchipuram is the only nearest hub of hospitals. A Primary Health Centre is the only available medical facility which is 5-8 kms from Purisai village located in Parandhur. Due to this situation, if an individual is bitten by a snake, the villagers have to opt for local or traditional methods to treat the snakebite victim. If the indigenous method does not help, then it would become difficult to save the person’s life.

Figure: 6.5

Data Collection at Purisai Village (1)

Source: Photo Captured During Data Collection for the Research

Figure: 6.6

Data Collection at Purisai Village (2)

Source: Photo Captured During Data Collection for the Research

However, the villages receive medicines for diabetes and other ailments are delivered at their doorsteps by the Kanchipuram Government hospital staff. Almost all of the villages are vaccinated against COVID-19. Few from the villages have had a positive experience with the 108 ambulance services. The public transportation at the village is not frequent. An allocation of parking area for 108 ambulances within 2-3 kms from the village and relaying of sturdy roads will be of great use to the people of Purisai Village.

6.4. Mamandur Village

The Mamandur village is located in the Madurantakam rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 1305 households with a population of 5,503 people which includes 2,829 males and 2,674 females. Aandal Alagar College, founded by actor/politician Mr. Vijayakanth is located 3 kms from Mamandur village.

Figure: 6.7

Data Collection at Mamandur Village (1)

Source: Photo Captured During Data Collection for the Research

SRM nursing home and the Rural Health centre are 2-3 kms from the village and Chengalpattu Government hospital is located 10-12 kms from the village. People from this village use public transport to visit these medical facilities. There is a Primary Health Centre and a pharmacy which is located on the main road near the bus stop of the village. A parking area for 108 ambulances is also found near the village. SRM Hospital has conducted several medical camps for the villagers and have earned their goodwill. During medical emergencies,

most people prefer to use their own vehicles instead of 108 ambulances. The villages expect the government to appoint more village health nurses to track their health status and to monitor the services and usage of the 108 ambulances by the people of Mamandur.

Figure: 6.8

Data Collection at Mamandur Village (2)

Source: Photo Captured During Data Collection for the Research

6.5. Sittalapakkam Village

The Sittalapakkam village is located in the Sholinganallur rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 3,461 households with a population of 13,542 people which includes 6,857 males and 6,685 females.

Siththalapakkam is located near the Kaleeshwari Factory of Medavakkam, according to 2011 Census it was a village/ rural area but now slowly it progressing with better civic amenities. There are clinics, pharmacies, hospitals, specialised doctors in every nook and corners for the medical assistance of the people. Facilities such as transportation, roads and other public services are sufficient enough to fulfil the daily needs of the people. Since, the resources are sufficient, the need of 108 emergency ambulance services are not dire. However, the opinion of the people concerning the 108 ambulances were considerably high. Government Upgraded Primary Health Centre in Medavakkam, ABC Hospital and Madras Medical Mission are the nearby medical facilities for the people of Siththalapakkam. The Government health

schemes are availed by the people. The 108 ambulances parking near areas like Siththalapakkam can be moved to other areas as the usage by the people is very low.

Figure: 6.9

Data Collection at Sittalapakkam Village (1)

Source: Photo Captured During Data Collection for the Research

Figure: 6.10

Data Collection at Sittalapakkam Village (2)

Source: Photo Captured During Data Collection for the Research

6.6. Nandambakkam Village

The Nandambakkam village is located in the Sriperumbudur rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 3,174 households with a population of 12,560 people which includes 6,284 males and 6,276 females.

Nandambakkam can be termed as a developing village despite their limited resources. It was observed that the 108 Ambulances were being used less by the people in the village. This is due to their convenience of using their own vehicles and the situation of numerous private clinics in the area. A respondent said, “Since we have our vehicle, there is no need for us to contact a 108 ambulance and wait for it arrive, within the time of waiting we would already reach the hospital”.

Figure: 6.11

Data Collection at Nandambakkam Village (1)

Source: Photo Captured During Data Collection for the Research

A Primary Health Centre is located in Somangalam which is not far from Nandambakkam. Kundrathur Madha Medical college was the most prioritised hospital for the people of Nandambakkam. Government hospitals are quite far from the village. Pregnancy was the primary reason for the contact of 108 ambulances. The services and experience of the 108 ambulance received good responses from the people of Nandambakkam. They provided good feedback to the services of the drivers and attenders of the 108 ambulance. There is a lack of knowledge amongst the people in differentiating between Emergency and Non-Emergency

situations, therefore they seem confused and lack the confidence to contact an ambulance. Hence, it is important to provide awareness and education on the reasons to call 108 ambulances.

Figure: 6.12

Data Collection at Nandambakkam Village (2)

Source: Photo Captured During Data Collection for the Research

6.7. Vengapakkam Village

The Vengapakkam village is located in the Tambaram rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 697 households with a population of 2,758 people which includes 1,409 males and 1,349 females.

Vengapakkam is located near the Kelambakkam and Vandalur By-pass road and it could be described as a partial village, as civic amenities are accessible within a movement of 3-4 kms from the village. Tagore Medical College and Rural Health & Training Centre are located near the village within a distance of 2 kms. The people from the villages can access facilities physically wellbeing such as a pharmacy, Primary Health Centre, Balwadi/ Anganwadi near their area. Only a Government General Hospital is located in a distance of 10-12 kms in Chromepet which is out of their comfort zone of travelling. Pregnancy and Trauma were the arguable reasons for the choice of 108 Ambulances. Many people used the 108 Ambulance Services but equally, there were people who said that “the 108 ambulances travelled using our village road, but it has never stopped here”. There are no parking spots for

the 108 ambulances in the area. The nearest parking point for the 108 ambulances is Chromepet and Vandalur.

Figure: 6.13

Data Collection at Vengapakkam Village (1)

Source: Photo Captured During Data Collection for the Research

Figure: 6.14

Data Collection at Vengapakkam Village (2)

Source: Photo Captured During Data Collection for the Research

Many people from the village appreciated the newest amendment in the 108 ambulance "Innuyir Kaapom" (Saving Others' Lives) – 48 Hours Free Treatment. There is only one minibus for the area. Hence, transport is not easy for the people. One of the respondents said that "people were not educated enough on calling a 108 ambulance and giving informed preliminary details for a quick response, hence this increases the response time". The people suggested that it would be ideal to have a pickup point near the area. The people were not able to differentiate between 108 ambulances and private ambulances, hence education is needed for informing people about the ambulance.

6.8. P.V.Kalathur Village

The P.V.Kalathur village is located in the Tirukalukundram rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 1,174 households with a population of 4,720 people which includes 2,343 males and 2,377 females.

Figure: 6.15

Data Collection at P.V.Kalathur Village (1)

Source: Photo Captured During Data Collection for the Research

The Chengalpattu Collectorate is located 10 kms from P.V. (Pon Vizhaindha) Kalathur village. It is a complete rural setting and people have to travel a long distance for their medical needs. The people are aware of the 108 ambulances; however, they prefer to use their own vehicles even though it takes longer duration. The people are ignorant when it comes to the

usage of 108 ambulances. Government General Hospital in Chengalpattu and Primary Health Centre in Vallipuram are the only nearest medical facilities available for treatment during emergency situations. Doctors and Village Health Nurses visit the households on a random basis to keep a track on their health status. The people who availed the services of the 108 Ambulance gave positive feedback. The people suggested that it would be beneficial if medical camps are conducted in the village through the Chengalpattu Government Hospital. The camps would be an ideal place to educate the people about the facilities of 108 ambulances.

Figure: 6.16

Data Collection at P.V.Kalathur Village (2)

Source: Photo Captured During Data Collection for the Research

6.9. Salavakkam Village

The Salavakkam village is located in the Uthiramerur rural sub-district of Kancheepuram district in the state of Tamil Nadu. According to the Census of India 2011, the population of the village comprises 787 households with a population of 3,311 people which includes 1,635 males and 1,676 females.

Utilisation of Primary Health Centre by the people is impressive than the other villages. The people of Salavakkam do not visit higher level hospitals without a consultation with the PHC Doctors in their area. The people have used the 108 ambulances also at a good scale. Pregnancy and other medical emergencies have been a primary reason for the use of the 108 ambulances. Chengalpattu Government Hospital is the nearest general hospital. They are no private hospitals in the area, however there is a clinic. They have to travel to the market area

to visit a pharmacy or have a health check-up done. A monthly supervision/investigation on the functioning of Primary Health Centres (PHCs) and Health Sub-Cenrtes (HSCs) could provide better services to the people.

Figure: 6.17

Data Collection at Salavakkam Village (1)

Source: Photo Captured During Data Collection for the Research

Figure: 6.18

Data Collection at Salavakkam Village (2)

Source: Photo Captured During Data Collection for the Research

6.10. Summary of Comments and Suggestions Provided by the Rural Respondents

The researcher has retrieved the overall comments and suggestions of rural respondents pertaining to the availing of 108 emergency ambulance services during medical emergencies. The data was collected with the aid of a structured interview schedule. Out of 370 samples, around 76 people have provided their suggestions for the effective utilisation of the 108 emergency ambulance services in the rural geography. The researcher has consolidated the overall comments and suggestions of the rural people and summarised the same into 15 predominant suggestions. Table 6.1 gives a clear picture of the overall suggestions of respondents related to 108 ambulances along with the ranks based on their frequencies.

Table: 6.1

Summary of Comments and Suggestions Provided by the Rural Respondents of Selected Villages for the Study

Summary of Comments and Suggestions provided by the Rural Respondents of Selected Villages for the Study	Rank
The response time of 108 ambulances is more. An immediate and reduced response time is expected to avail 108 ambulances during medical emergencies.	1
Expecting an increase in the number of 108 ambulances in villages	2
Require an increased availability of 108 ambulances in the nearby rural areas	3
The nearness of the availability of 108 ambulances will help the rural people to use 108 emergency ambulance services during medical emergencies	4
Need more awareness on the varied services available at 108 emergency ambulances.	5
Road conditions should be improved to reduce the response time of 108 ambulances	6
The 108 emergency ambulance call centres should respond quickly	7
108 ambulances are expected to be well-equipped to treat medical emergencies	8
The services provided by 108 ambulances shall be improved	9
Waiting time for 108 ambulances is more which makes us opt for private ambulances and self-transportation during accidents and other medical emergencies.	10
Rural people should be provided more awareness and information on how to call and approach the 108 emergency ambulance services.	11
Need awareness to differentiate between emergency and non-emergency medical conditions	12
Hesitant in availing 108 emergency ambulance services during a medical emergency	13
Villages located in between two districts suffer due to the confusion in assigning 108 ambulances of which district or which GH should be assigned (Purisai Village nearby Ranipet District)	14
Need 108 emergency ambulances exclusively to serve our village (Purisai)	15

Source: Primary Data

Table 6.1 reveals that the rural respondents are concerned about the response time and the availability of the 108 ambulances during medical emergencies in the rural areas. Rural inhabitants from the selected districts strongly suggest for the increased number of 108 ambulances in their villages to avail the same during medical emergencies without any delay. The data results further explained that the awareness on the medical services rendered by the 108 ambulances should be provided to the rural people as they are unaware about the medical services and the available medical equipment in the ambulance to avail the same during medical emergencies. The respondents have firmly commented on the poor road conditions prevailing in the rural geography which further delays the arrival of 108 ambulances and transporting the patients to the hospitals during medical emergencies. Therefore, the rural people chiefly insisted on the timely medical service, awareness on 108 ambulance and good road conditions to effectively avail the 108 emergency ambulance services.

CHAPTER - VII

DATA ANALYSIS AND INTERPRETATION

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DATA ANALYSIS AND INTERPRETATION

The objectives of the current study can be achieved by conceiving varied research processes with a scientific and systematic approach. Firstly, the data pertaining to the undertaken research work was collected through a structured interview schedule from 370 respondents from selected villages in the rural geography of Kancheepuram district in Tamil Nadu. Post-collection of the primary data, the researchers proceeded with the process of editing, coding and analysing. In subsequence to the data processing, the collected data was loaded in the SPSS and AMOS software to analyse the data with suitable statistical techniques. Therefore, the present chapter explicitly presents the primary data of the study with valid inferences in order to achieve the objectives of the study.

7.1. Socio-Demographic Profile

The socio-demographic profile of the rural respondents has been studied through several factors viz. Age Group, Gender, Educational Qualification, Marital Status, Number of Children, Type of Family, Number of Members in Family, Occupation, Number of Working Members in Family, Monthly Income, Family's Monthly Income, Access to Basic Facilities and Status of Assets. The details of the socio-demographic profile of the selected rural people are presented as follows:

7.1.1. Age

The age of the respondents was studied with five classifications viz. up to 25 years, 26 – 35 years, 36 -45 years, 46 -55 years and above 55 years. Figure 7.1 reveals the age group of the rural people considered for the study.

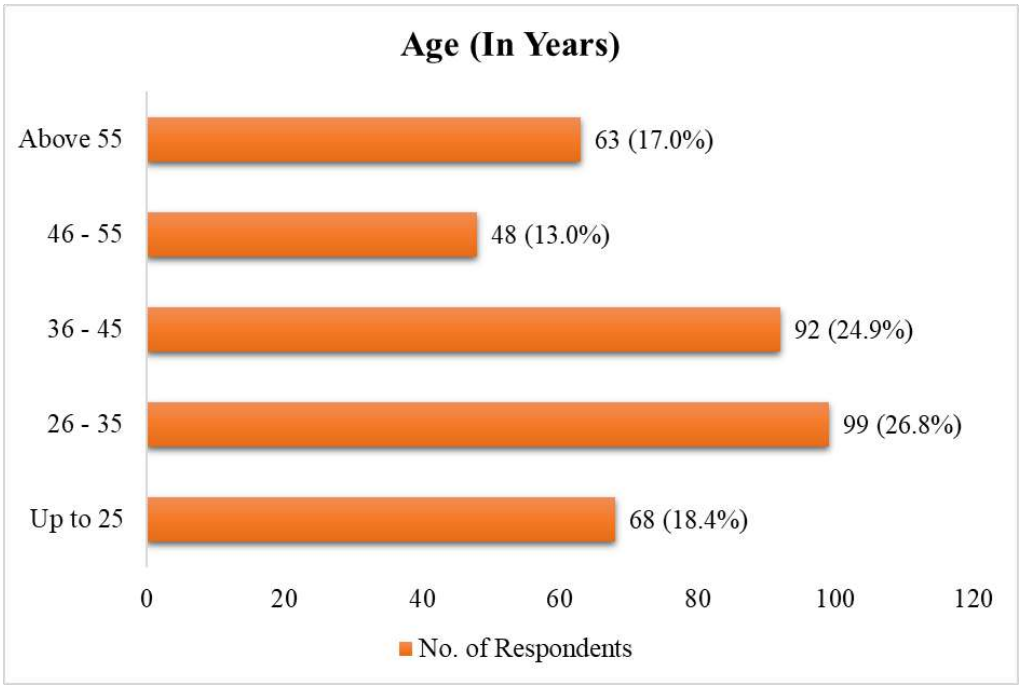
From figure 7.1, it is found that 26.8% (99) of the respondents are in the age group of 26 -35 years, followed by 24.9% (92) of the respondents are in the age group of 36 – 45 years. The respondents in the age group up to 25 years constitute 18.4% (68) whereas the respondents in the age group above 55 years constitute 17.0% (63) of the total. The minimum representation of 13.0% (48) is from the age group between 46 -55 years. Therefore, the majority of the rural people who participated in the study belong to the 26 – 35 years age group.

7.1.2. Gender

Figure 7.2 reveals the gender of the respondents which is differentiated as male and female. From the figure, it is clear that the majority 55.7% (206) of the respondents are female and the other 44.3% (164) respondents are male of the total sample unit. Therefore, it is found that the sample of the study is dominated by female respondents

Figure: 7.1

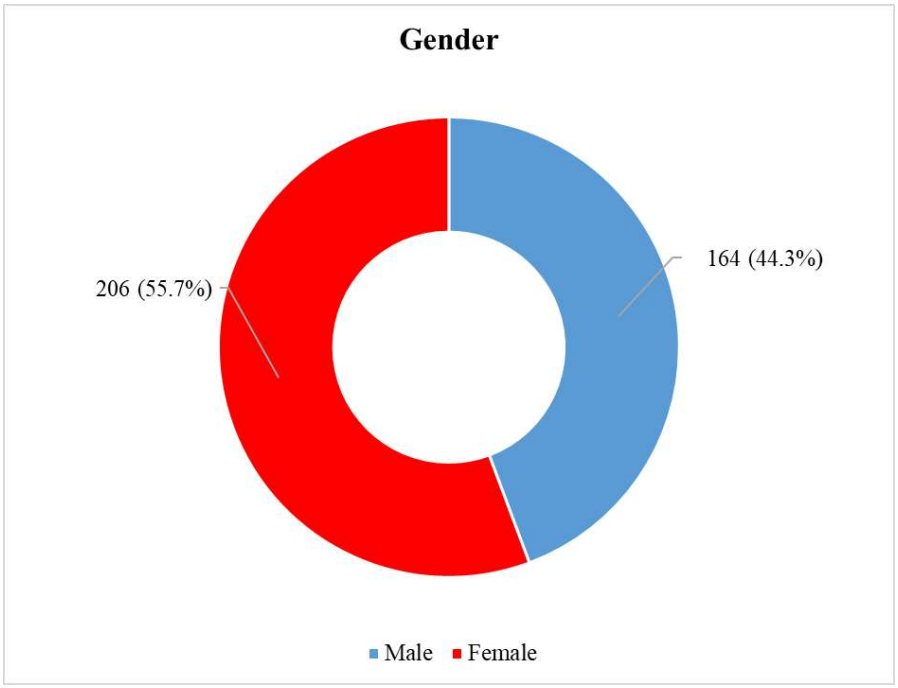
Age of the Respondents



Source: Primary Data

Figure: 7.2

Gender of the Respondents



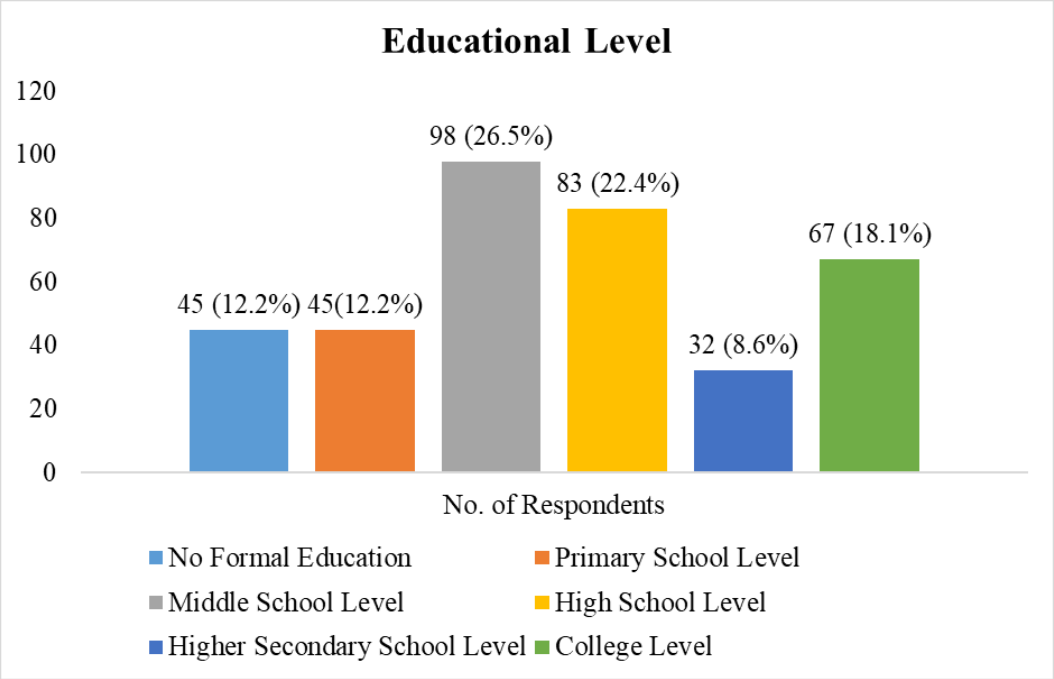
Source: Primary Data

7.1.3. Educational Level

The educational qualification of the rural people considered for the study was classified based on no formal education, primary school level, middle school level, high school level, higher secondary school level, and college level. Figure 7.3 provides clear information about the rural respondents classified based on their educational qualifications.

Figure: 7.3

Education Level of the Respondents



Source: Primary Data

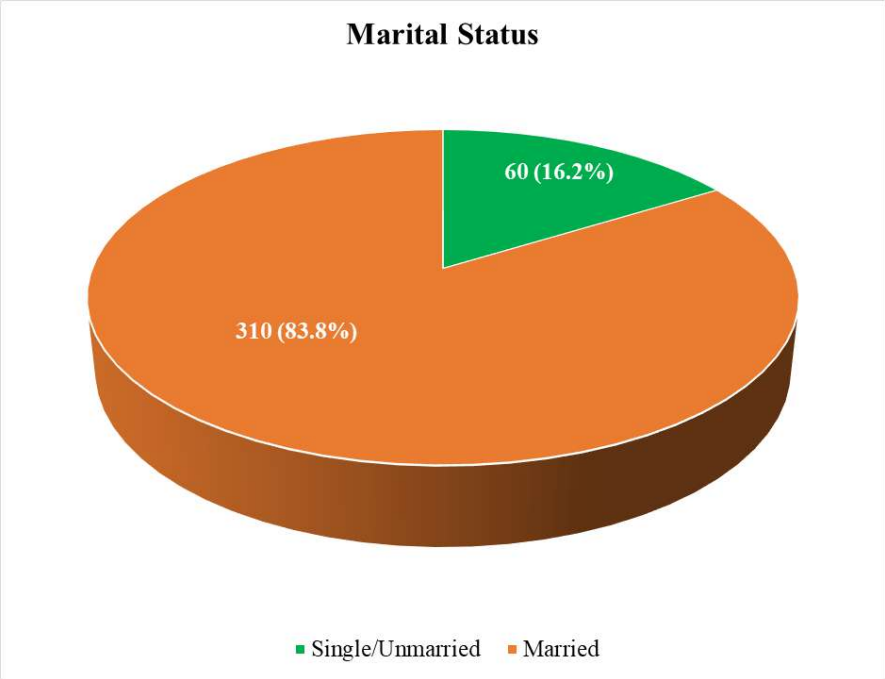
Figure 7.3 clearly explained that a maximum number of the 26.5% (98) respondents are with middle school level education and 22.4% (83) respondents possess high school level education. The respondents who constitute 18.1% (67) of the sample unit are graduates. It is found that respondents without formal education and primary school level education have equal percentages constituting 12.2% (45) and only 8.6% (32) have higher secondary school level education. Hence, the respondents who pursued middle school and high school level education extend to nearly 50% of the total respondents.

7.1.4. Marital Status

The study intended to explore the marital status of the respondents as it is one of the important variables of the personal profile. Figure 7.4 presents the marital status of the rural people selected for the study. It is inferred from the above figure that 83.8% (310) of the respondents are married and 16.2% (60) of the respondents are found to be single. Hence, it is clear that the sample selected for the study is dominated by married respondents.

Figure: 7.4

Marital Status of the Respondents

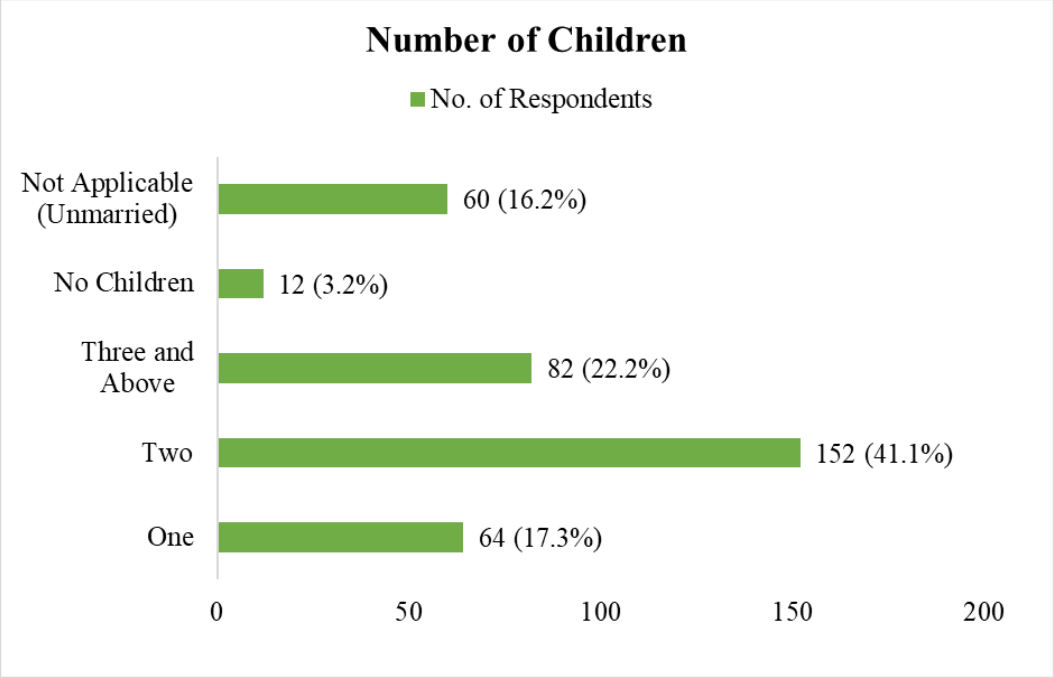


Source: Primary Data

7.1.5. Number of Children

Figure: 7.5

Number of Children of the Respondents



Source: Primary Data

In this research, the number of children of the respondents was categorized with options such as 1, 2, three and above, and no children. The option ‘not applicable’ was included for the unmarried respondents. The frequency distribution of the number of children of the respondents was presented in figure 7.5.

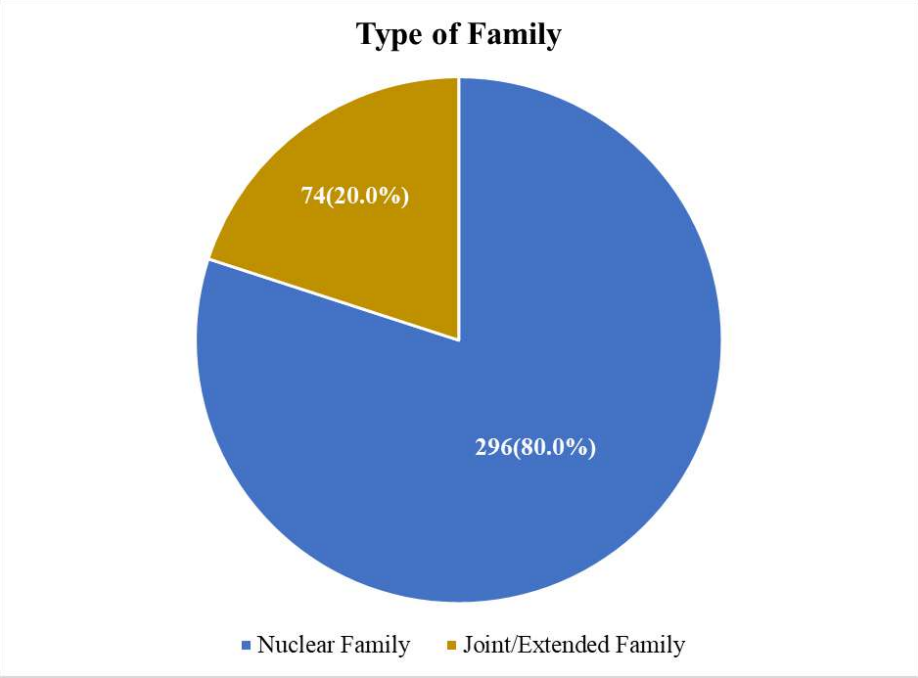
Figure 7.5 shows that the maximum number of respondents 41.1% (152) of the sample have two children, followed by 22.2% (82) possessing three or more children. Nearly 17.3% (64) of the rural people selected for the study have one child and 16.2% (60) of the respondents are unmarried. However, 3.2% (12) of the sample have no children.

7.1.6. Type of Family

The sample distribution of the study has been segregated based on family type namely nuclear and joint or extended. Figure 7.6 provides clear information about the family type of the respondents.

Figure: 7.6

Type of family of the Respondents



Source: Primary Data

From figure 7.6, it is presented that the majority of the respondents 80.0% (296) belong to nuclear families and the remaining 20.0% (74) of the participants belong to the joint or extended family type of the total sample. Hence, the majority of the respondents of the study are from nuclear families.

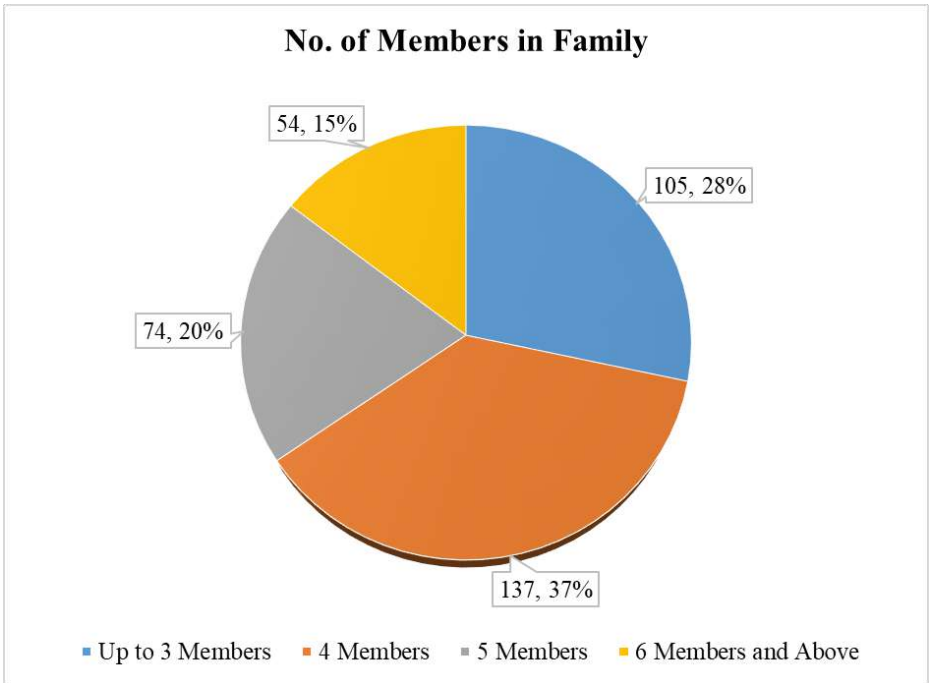
7.1.7. No. of Members in Family

The number of family members of the respondents is classified as up to 3 members, 4 members, 5 members, and 6 members and above. The frequency distribution of figure 7.7 clarifies the number of family members of the rural respondents.

Figure 7.7 shows that the maximum number of respondents have 4 members in their family constituting 37.0% (137), followed by 28.4 (105) of the respondents have up to 3 members in their family. Families with 5 members contribute to 20.0% (74) of the total respondents and 14.6% (54) of the respondents belong to a family with 6 members or more. Therefore, the families with four and five members contribute to 57% of the sample size.

Figure: 7.7

Number of Members in Family



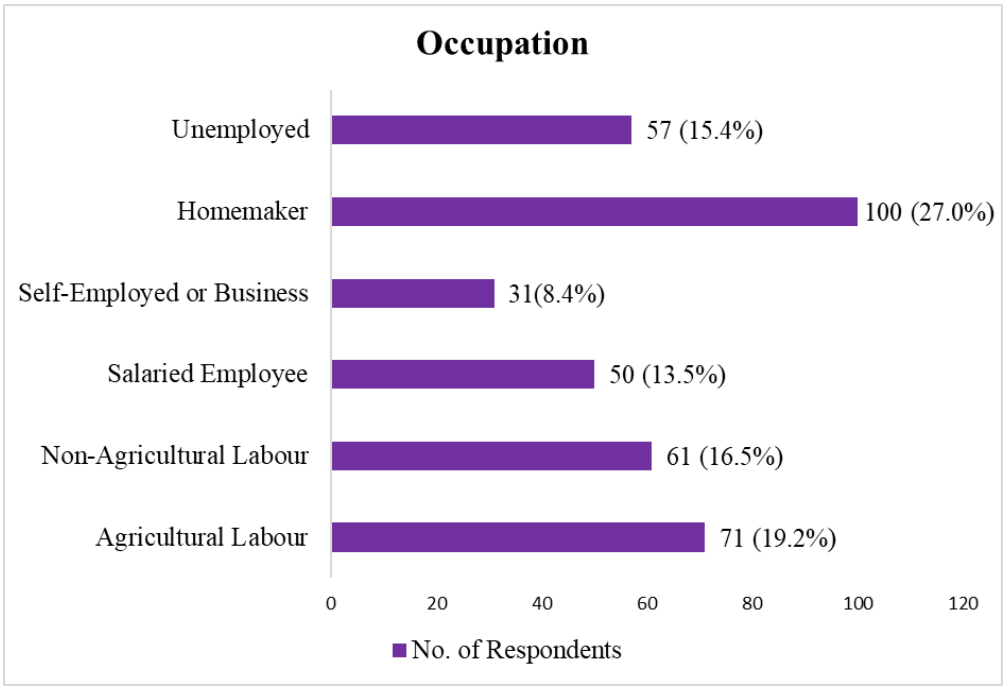
Source: Primary Data

7.1.8. Occupation

Figure 7.8 shows the status of occupation of the respondents which is categorized into agricultural labour, non-agricultural labour, salaried employee, self-employed or business, homemaker and unemployed. Figure 7.8 clarified that the majority 27.0% (100) of the respondents are homemakers and 19.2% (71) of the respondents are agricultural labours. Also, it is found that 16.5% (61) of the sample unit are non-agricultural labours followed by unemployed respondents who constitute to 15.4% (57). However, 13.5% (50) of the respondents are salaried employees and only 8.4% (31) of the respondents are self-employed or run their own business in the total sample.

Figure: 7.8

Occupation of the Respondents

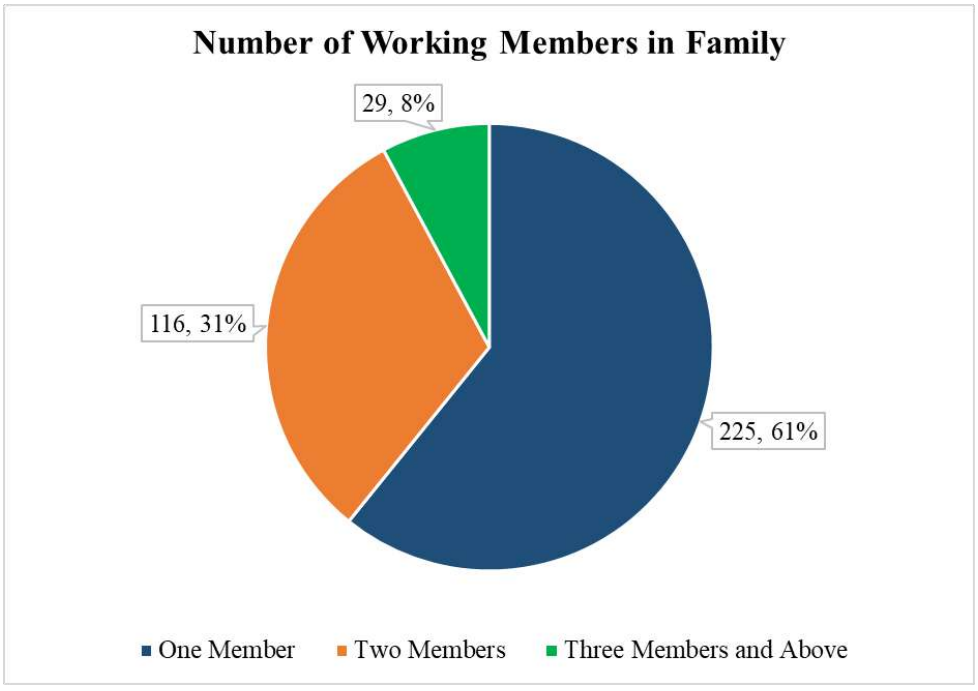


Source: Primary Data

7.1.9. Number of Working Members in Family

Figure: 7.9

Numbers of working Members in Family



Source: Primary Data

In this research, the number of working members in the family of the respondents was assessed with options such as one member, two members, and three members and above. The frequency distribution in figure 7.9 shows the number of working members in the family of rural respondents considered for the study.

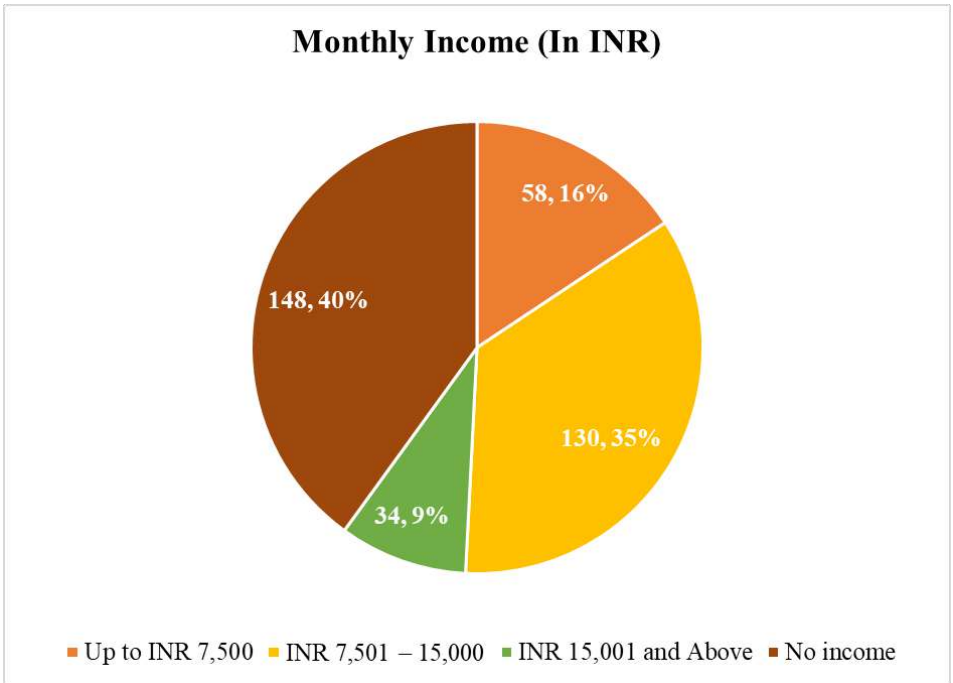
Figure 7.9 represents that the respondents constitute 60.8% (225) have one working member in their family, followed by 31.4% (116) of the respondents who have two working members in their family. Hence, it is noted that only 7.8% (29) of the rural people have three working members and above in their family. It is inferred that the sample is dominated by families having at least one working member.

7.1.10. Monthly Income

The respondents are categorized according to the monthly income earned by them with four classifications of income in INR such as up to INR 7,500, INR 7,501 – 15,000, INR 15,001 and above, and no income. The frequency distribution of the monthly income of the respondents is represented in the following figure 7.10.

Figure: 7.10

Monthly Income of the Respondents



Source: Primary Data

The data presented in figure 7.10 revealed that the maximum sample unit comprises 40.0% (148) are without income and almost 35.1% (130) possess an income of INR 7,501 to 15,000 every month. It is further found that 15.7% (58) respondents have a monthly income of

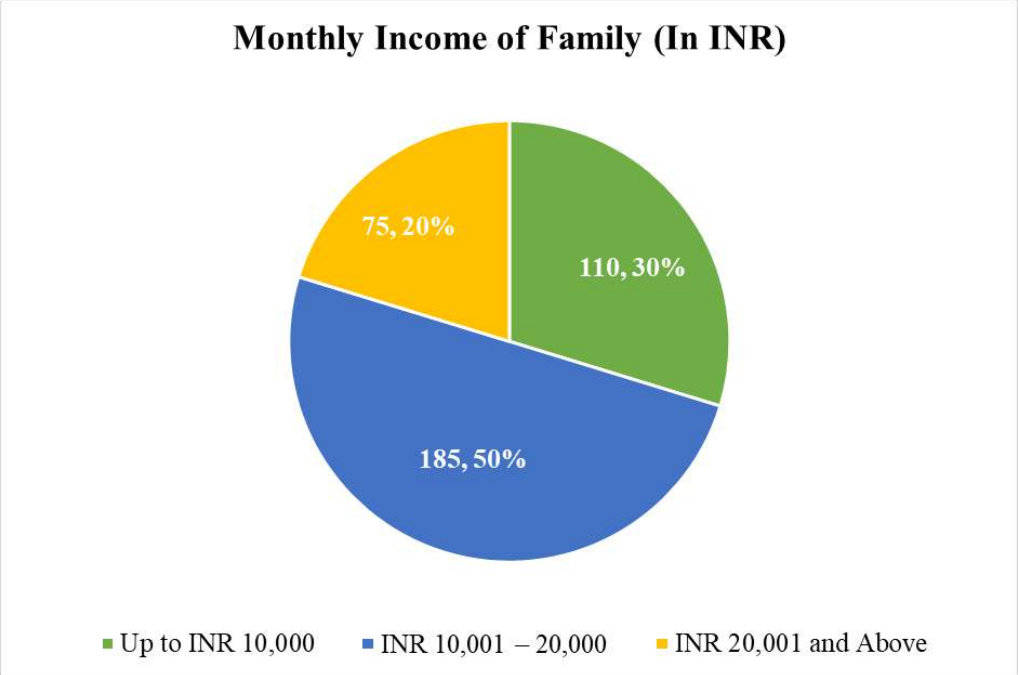
up to INR 7,500 and a minimum representation from the respondents whose monthly income is INR 15,001 and above constituting 9.2% (34) of the sample selected for the study.

7.1.11. Monthly Income of Family

The sample representation based on their monthly income has been classified into 3 groups namely Up to INR 10,000, INR 10,001 – 20,000 and INR 20,001 and Above. The frequency distribution of the respondents on their family's monthly income is presented in figure 7.11. Figure 7.11 identifies that 50.0% (185) of the respondents have INR 10,001 to 20,000 as a monthly income of their family, followed by 29.7% (110) respondents who have monthly family income up to INR 10,000. Subsequently, it is further found that 20.3% (75) of the respondents have a monthly family income of their family of INR 20,001 and above. Hence, it is clear that the families earning between INR 10,001 – 20,000 are dominating the sample.

Figure: 7.11

Monthly Income of Family



Source: Primary Data

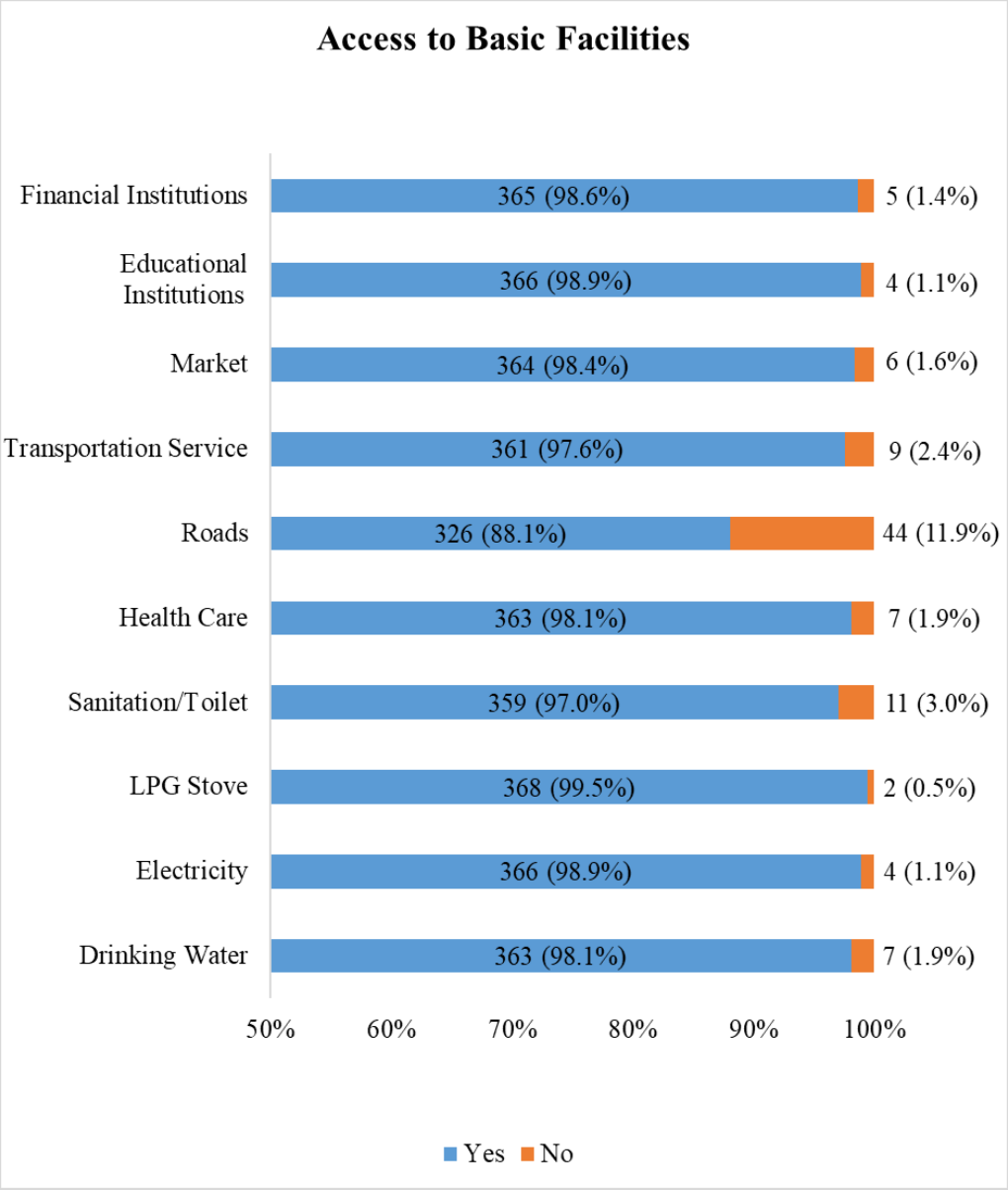
7.1.12. Access to Basic Facilities

The accessibility of rural people to basic facilities viz. Drinking Water, Electricity, LPG Stove, Sanitation/Toilet, Health Care, Roads, Transportation Service, Market, Educational Institutions are Financial Institutions are presented in figure 7.12. Figure 7.12 explained the access to basic facilities of the rural people chosen for the case study. It is found that 99.5% (368) of the respondents use LPG stoves and 98.9% (366) of the sample unit have access to electricity and educational institutions. It is further inferred that the respondents who use

financial institutions constitute to 98.6% (365) of the total sample, followed by 98.4% (364) respondents have a market facility. The equal per cent of 98.1% (363) is distributed with the respondents have access to drinking water and health care respectively. The respondents constituting 97.6% (361) have transportation facilities, 97.0% (359) of the rural people have sanitation or toilet facilities and 88.1% (326) of the respondents use proper roads whereas 11.9% (44) of the people are not having road facilities of the total sample unit. Therefore, it can be inferred that the majority of the rural population have better access to basic facilities. However, access to roads still seems to be a concern for a rural population to a certain extent.

Figure: 7.12

Access to Basic Facilities of the Respondents



Source: Primary Data

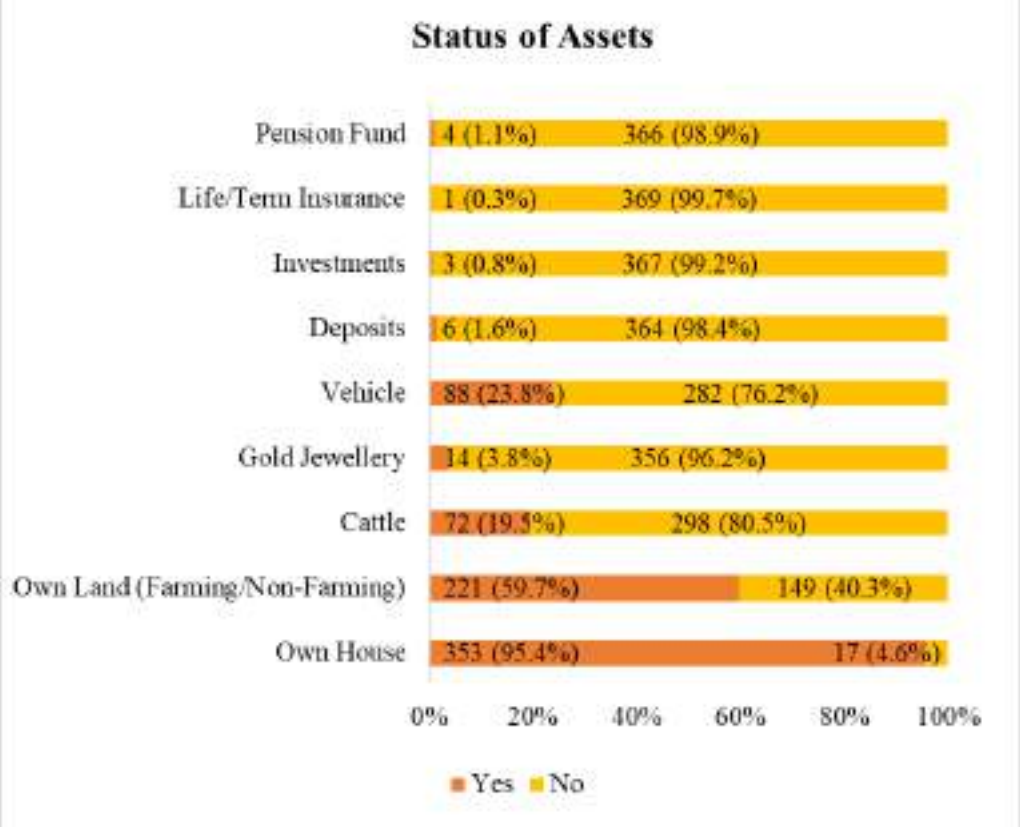
7.1.13. Status of Assets

The status of assets viz. Own House, Own Land (Farming/Non-Farming), Cattle, Gold Jewellery, Vehicle, Deposits, Investments, Life/Term Insurance and Pension Fund, possessed by the rural respondents is presented in figure 7.13.

Figure 7.13 explains that the sample unit comprises a maximum of 95.4% (353) respondents possess their own house which is followed by 59.7% (221) of the respondents have a self-owned land (Farming/Non-Farming). Also, it is noted that the rural people who have their vehicles constitute to 23.8% (88) of the total sample and 19.5% (72) of the respondents have cattle of their own. It is found that 3.8% (14) of the respondents have gold jewellery, 1.6% (6) of the respondents have deposits and 1.1% (4) of the sample receive pension funds. The minimal representation of the sample is only 0.8% (3) hold investments and 0.3% (1) are covered with life/term insurance. Hence, it is understood that the majority of the rural respondents possess their own house and own land. Further, vehicles and cattle are possessed by the respondents to an extent of 19 to 24 percent.

Figure: 7.13

Status of Assets of the Respondents



Source: Primary Data

7.2. Health Profile

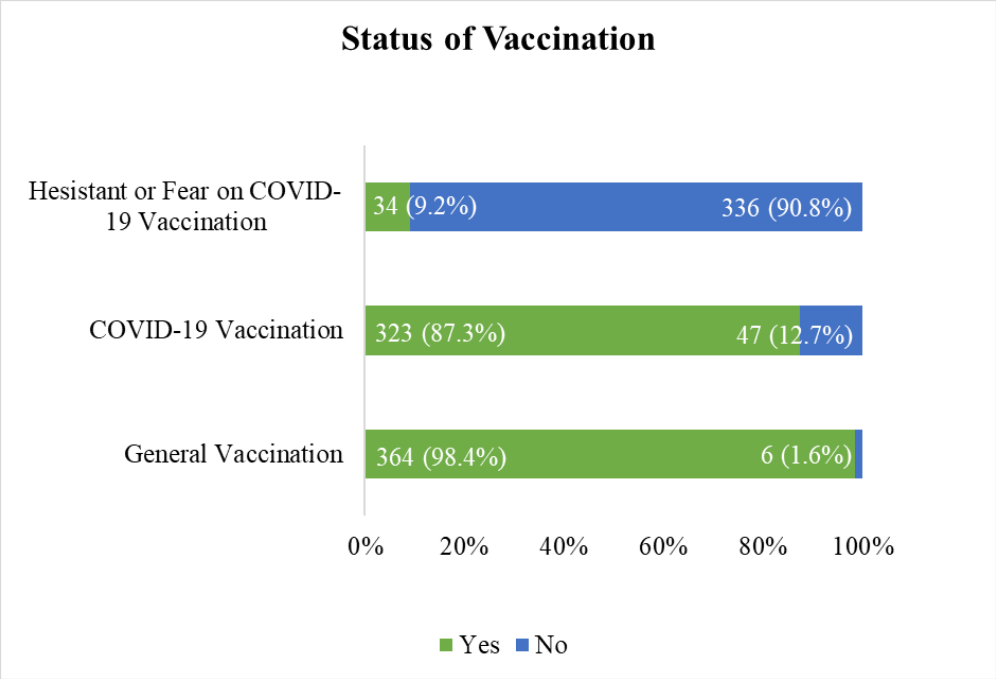
The health profile of the rural people has been studied through selected factors namely Status of Vaccination, General Health Information, Daily Habits, General Medical Condition, Specific Medical Condition, Experience in Medical Emergency, Status of Usage of 108 Emergency Ambulance Services, Details on Health Insurance, Frequency of Visits and Distance to Health Centres. The health profile of the selected sample from rural areas is presented as follows:

7.2.1. Status of Vaccination

The details on general vaccination, COVID-19 vaccination and hesitance or fear on COVID-19 vaccination pertaining to the rural respondents are presented in figure 7.14.

Figure: 7.14

Status of the Vaccination of the Respondents



Source: Primary Data

From figure 7.14, it is noted that the majority 98.4% (364) of the respondents have taken general vaccination and nearly 87.3% (323) of the rural people have taken COVID-19 vaccination, whereas 9.2% (34) of the respondents are hesitant or fear to take the COVID-19 vaccination. Therefore, the majority of rural people chosen for the research study are vaccinated.

7.2.2. General Health Information

The general health information of the rural respondents reveals their Height, Weight, Body Mass Index (BMI), Status of Differently-Abled, Hours of Sleep per day, Type of Food,

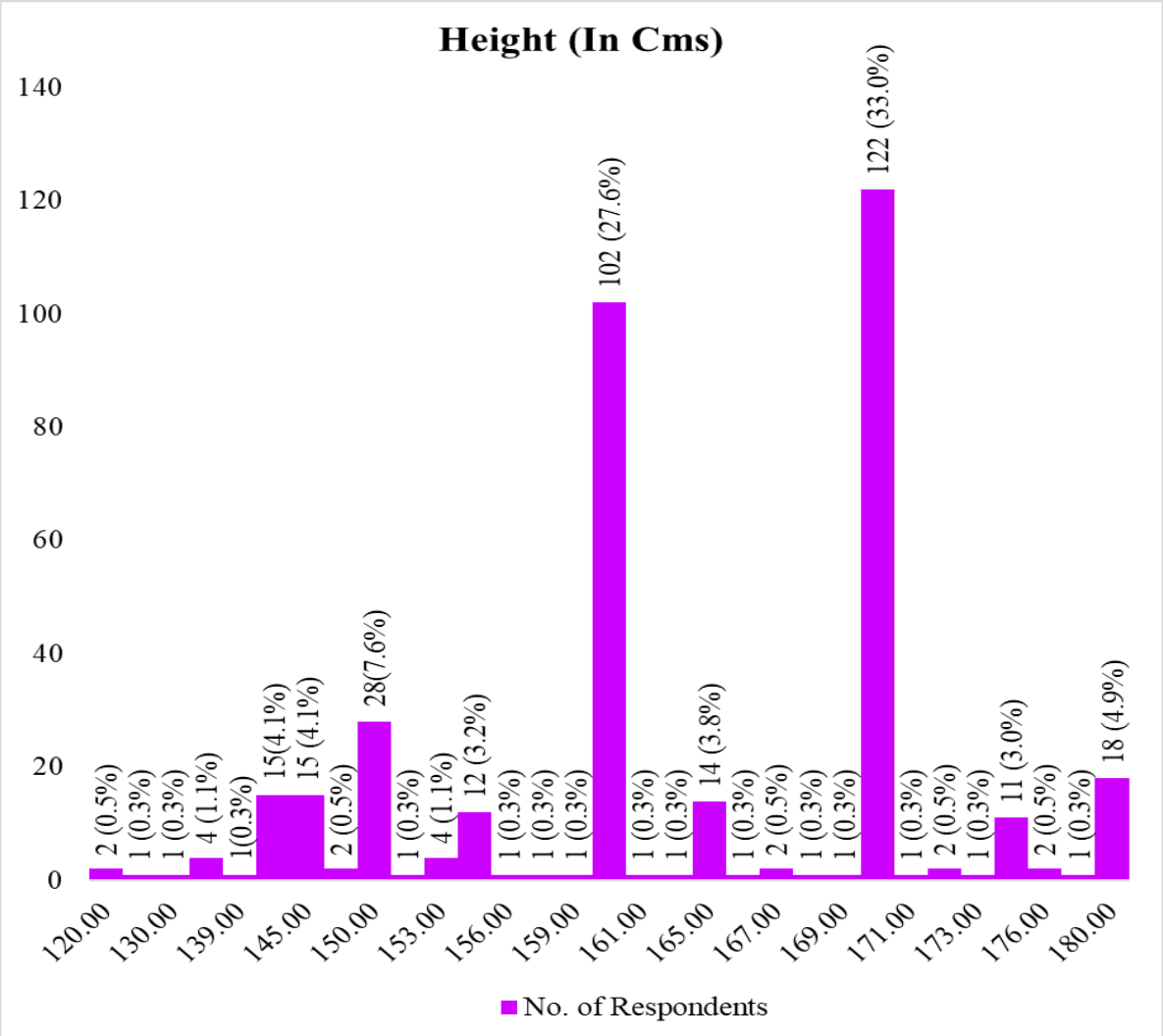
Water Consumption per day and Frequency of Tea or Coffee per day. The results related to the general health information of the rural people are presented as follows:

7.2.2.1. Height of the Respondents

From figure 7.15, it can be found that the majority of the respondents' heights are ranging from 160 – 170 centimetres which constitute 66.2% (245) of the sample. Nearly 13% of the sample covering 48 respondents belong to the height category of 150 – 159 centimetres whereas 36 respondents of the sample's heights range from 171 – 180 centimetres representing 9.7%. It is further noted that 11.1% (41) of the respondents belong to the height category of 120 – 149 centimetres.

Figure: 7.15

Heights of the Respondents



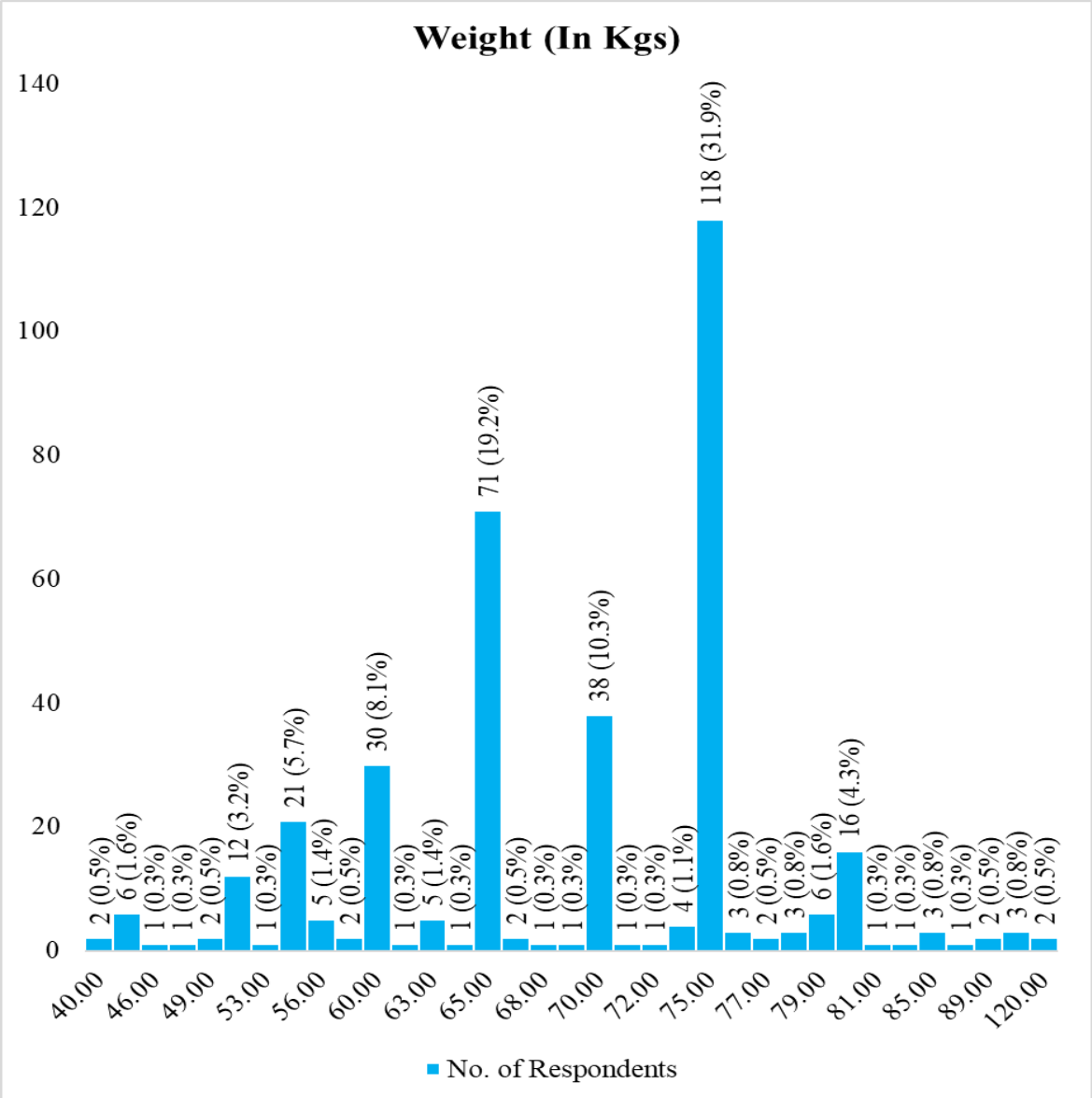
Source: Primary Data

7.2.2.2. Weight of the Respondents

Figure 7.16 represents that the maximum number of respondent weight range from 65 - 75 kg constitutes 64.1% (237) of the sample. It is further inferred that 17.6% (65) of respondents' weight range from 55 - 64 kg, followed by 11.6% of the sample belonging to the weight category 76 - 120 kg and 25 respondents of the sample's weight range from 40 - 53kgs representing 6.8%.

Figure: 7.16

Weight of the respondents



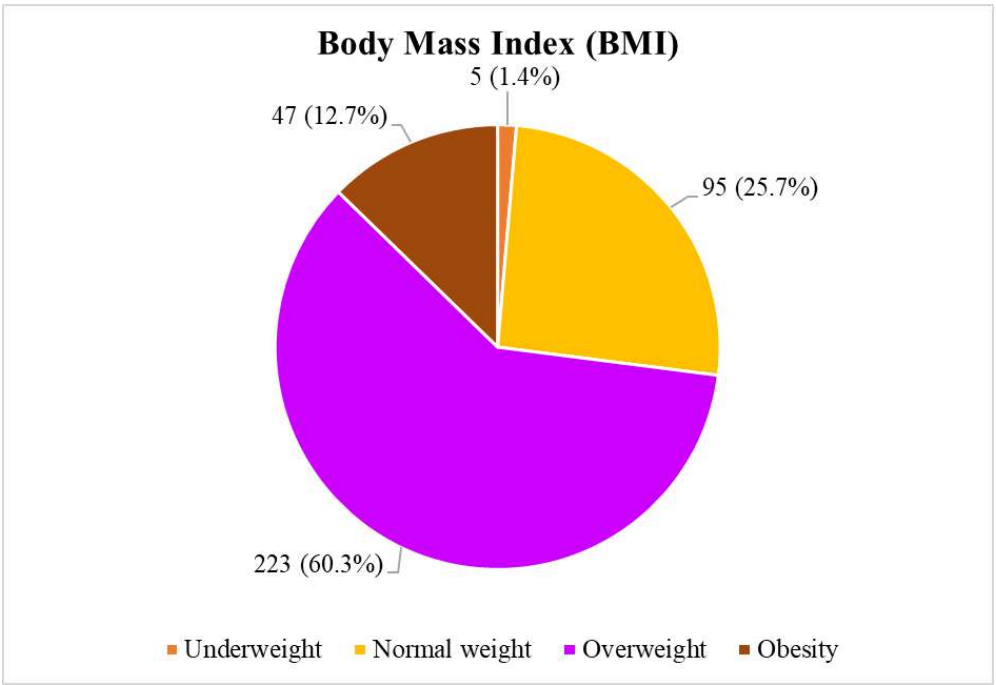
Source: Primary Data

7.2.2.3. Body Mass Index (BMI)

The Body Mass Index (BMI) of the rural respondents are classified into four categories namely Underweight (<18.5), Normal weight (18.5–24.9), Overweight (25–29.9) and Obesity (>29.9) and the results are presented in figure 7.17.

Figure: 7.17

Body Mass Index of the Respondents



Source: Computed Data

From figure 7.17, it is observed that the maximum number of the respondents are under the overweight category constituting 60.3% (223) of the sample, followed by 25.7% (95) of the respondents being under normal weight. It is further inferred that 12.7% (47) and only 1.4% (5) of the sample are underweight. Hence it is understood that majority of the rural people participated in the study are under overweight category.

7.2.2.4. Status of Differently–Abled

Figure 7.18 shows that the majority 98.4% (364) of the respondents are abled people whereas 1.6% (6) of the respondents are differently-abled. Hence, it is observed that only a minimum number of people are differently-abled in the sample unit.

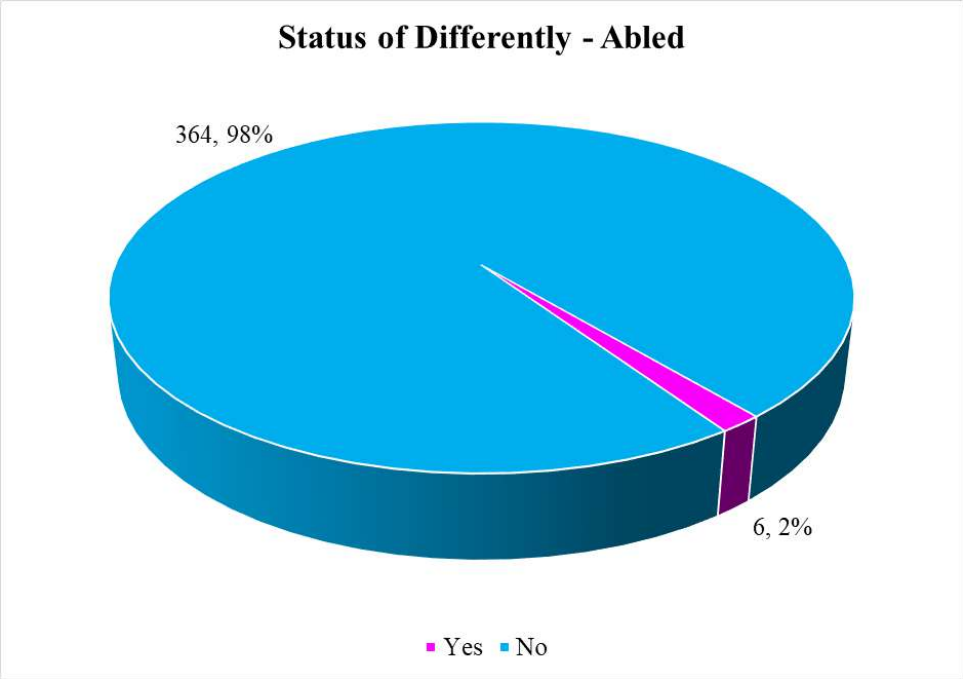
7.2.2.5. Hours of Sleep per Day

From figure 7.19, it is clear that the majority of the respondents 69.5% (257) considered for the study sleep 7-8 hours per day whereas 26.5% (98) of the respondents sleep 5-6 hours per day. The respondents who sleep only 2-4 hours per day constitutes 3.0% (11) of the sample

and 1.1% (4) of the respondents sleep 9-12 hours per day. Hence, it is inferred that the majority of the rural respondents sleep between 7 – 8 hours per day.

Figure: 7.18

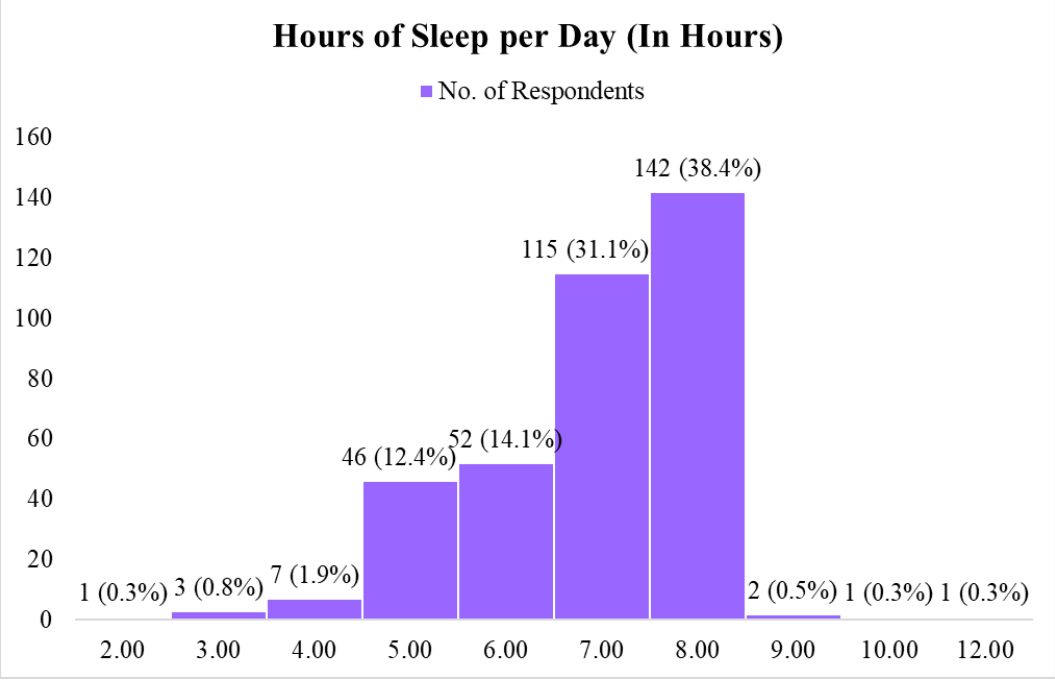
Status of Differently – Abled of the Respondents



Source: Primary Data

Figure: 7.19

Hours of Sleep per Day of the Respondents



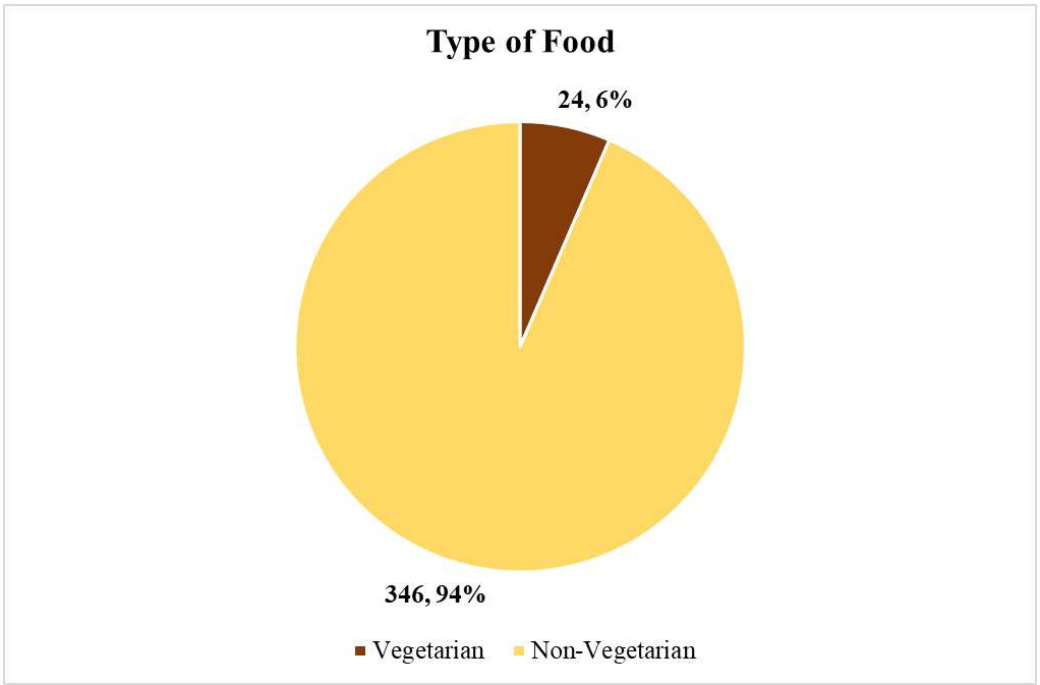
Source: Primary Data

7.2.2.6. Type of Food

The above figure 7.20 revealed that 93.5% (346) of the respondents consider non-vegetarian as their food type and only 6.5% (24) of the respondents are vegetarians. Therefore, it is confirmed from the study that the majority of the rural population are non-vegetarians.

Figure: 7.20

Type of Food of the Respondents



Source: Primary Data

7.2.2.7. Water Consumption per day

Figure 7.21 represents that the majority of the respondents have a water consumption of 4 litres per day constituting 60.8% (225), followed by 32.4% (120) of the respondents who consume 3 litres of water per day. It is further noted that 5.4% (20) of the sample consume 2 litres of water per day and only 1.4% (5) of the respondents consume 1 litre of water per day which is very less. Therefore, it can be concluded that majority of the respondents are consuming 4 litres of water per day.

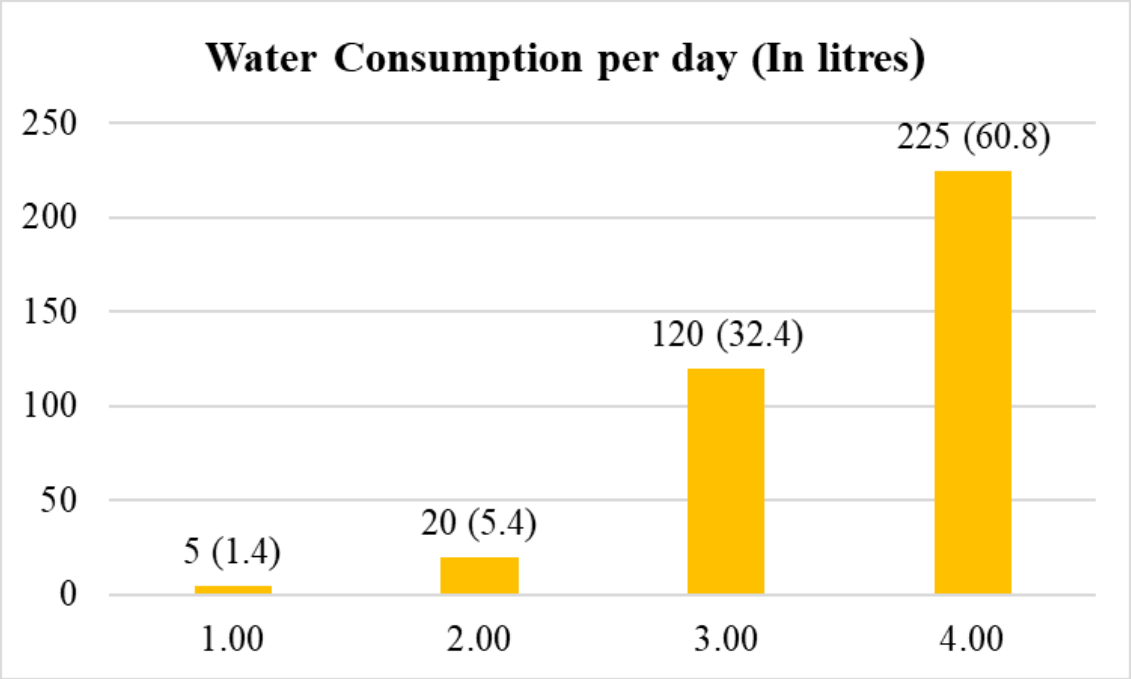
7.2.2.8. Frequency of Drinking Tea or Coffee per Day

From figure 7.22, it is noted that the majority of the respondents 53.5% (198) drink tea or coffee 2 times per day whereas 12.7% (47) of the respondents drink tea or coffee 4 times per day. Nearly the respondents constituting 8.9% (33) of the total sample drink tea or coffee one time per day, followed by 8.1% (30) of the respondents drink tea or coffee 3 times per day. The respondents who drink tea or coffee 5 times per day constitute 2.4% (9) of the sample and only

0.5% (2) of the respondents drink tea or coffee 7 times per day. The remaining 13.8% (51) of the respondents don't drink tea or coffee.

Figure: 7.21

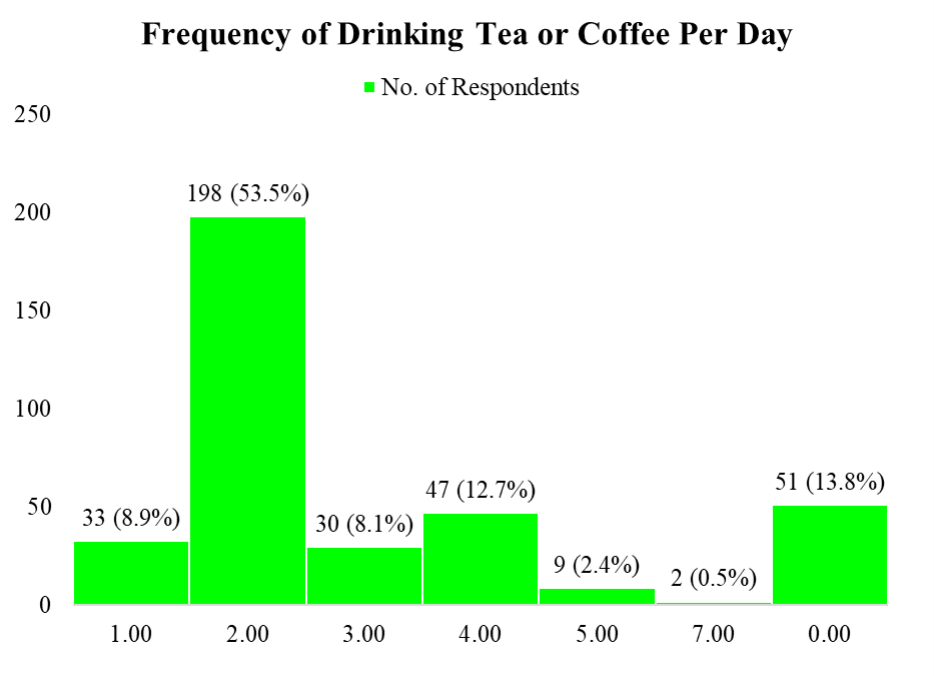
Water Consumption per day



Source: Primary Data

Figure: 7.22

Frequency of Drinking Tea or Coffee per Day



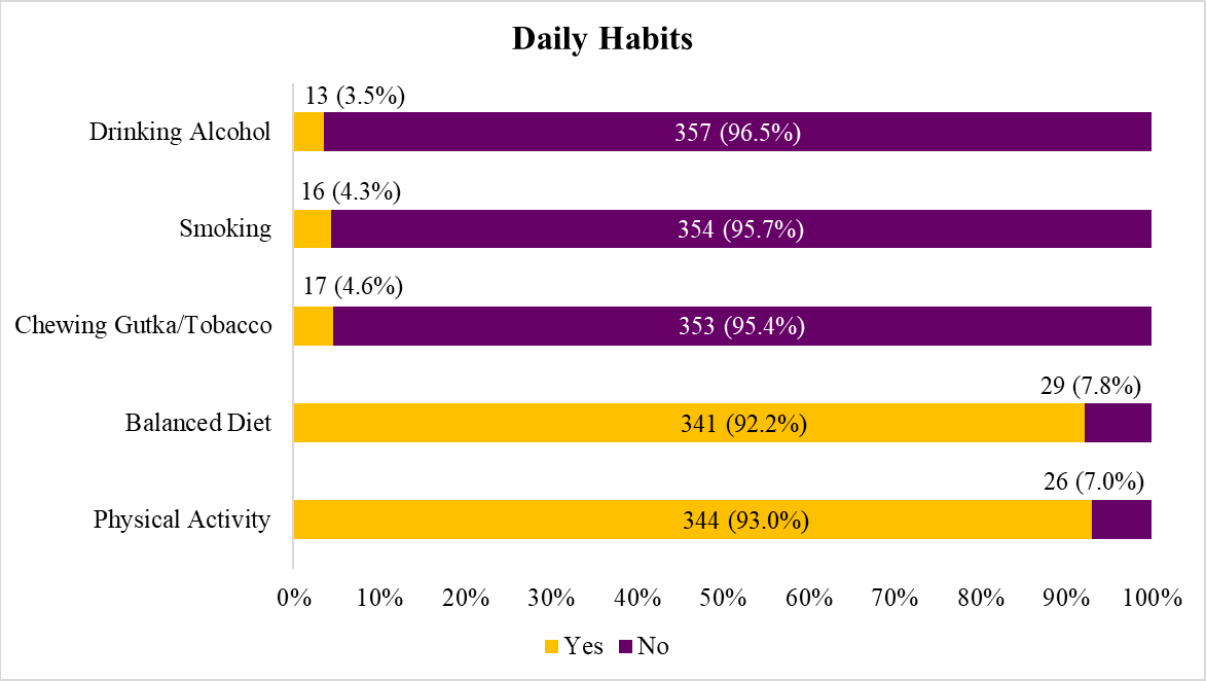
Source: Primary Data

7.2.3. Daily Habits

The daily habits of the sample are studied through the factors viz. Physical Activity, Balanced Diet, Chewing Gutka/Tobacco, Smoking and Drinking Alcohol. The results of the daily habits of the rural people are presented in figure 7.23.

Figure: 7.23

Daily Habits of the Respondents



Source: Primary Data

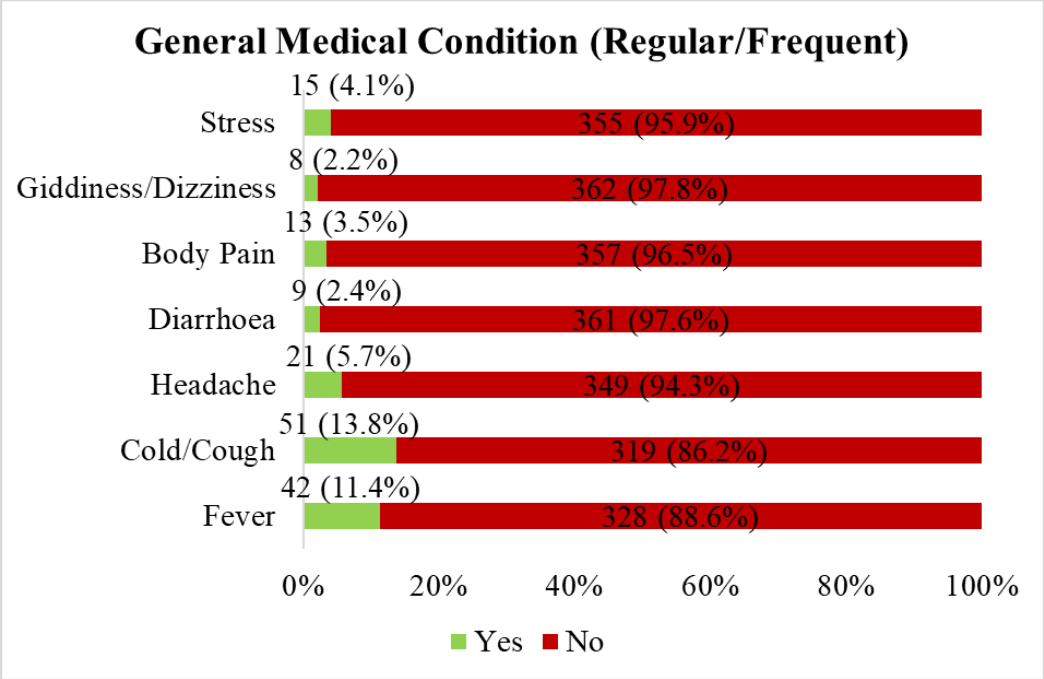
From figure 7.23, it is verified that 93.0% (344) of the respondents have a habit of doing a physical activity and nearly 92.2% (341) of the sample intake balanced diet daily. It is further inferred that 4.6% (17) of the respondents have a habit of chewing gutka or tobacco, followed by 4.3% (16) of the rural people have smoking habits and 3.5% (13) of the respondents have a habit of drinking alcohol. Hence, it is clear that rural people who are doing physical activities and following a balanced diet regularly are maximum in number.

7.2.4. General Medical Condition

The general medical condition of the sample is studied through the factors viz. Fever, Cold/Cough, Headache, Diarrhoea, Body Pain, Giddiness/Dizziness and Stress experienced by the people regularly or frequently. The results pertaining to the general medical condition of the rural people are presented in figure 7.24.

Figure: 7.24

General Medical Condition of the Respondents



Source: Primary Data

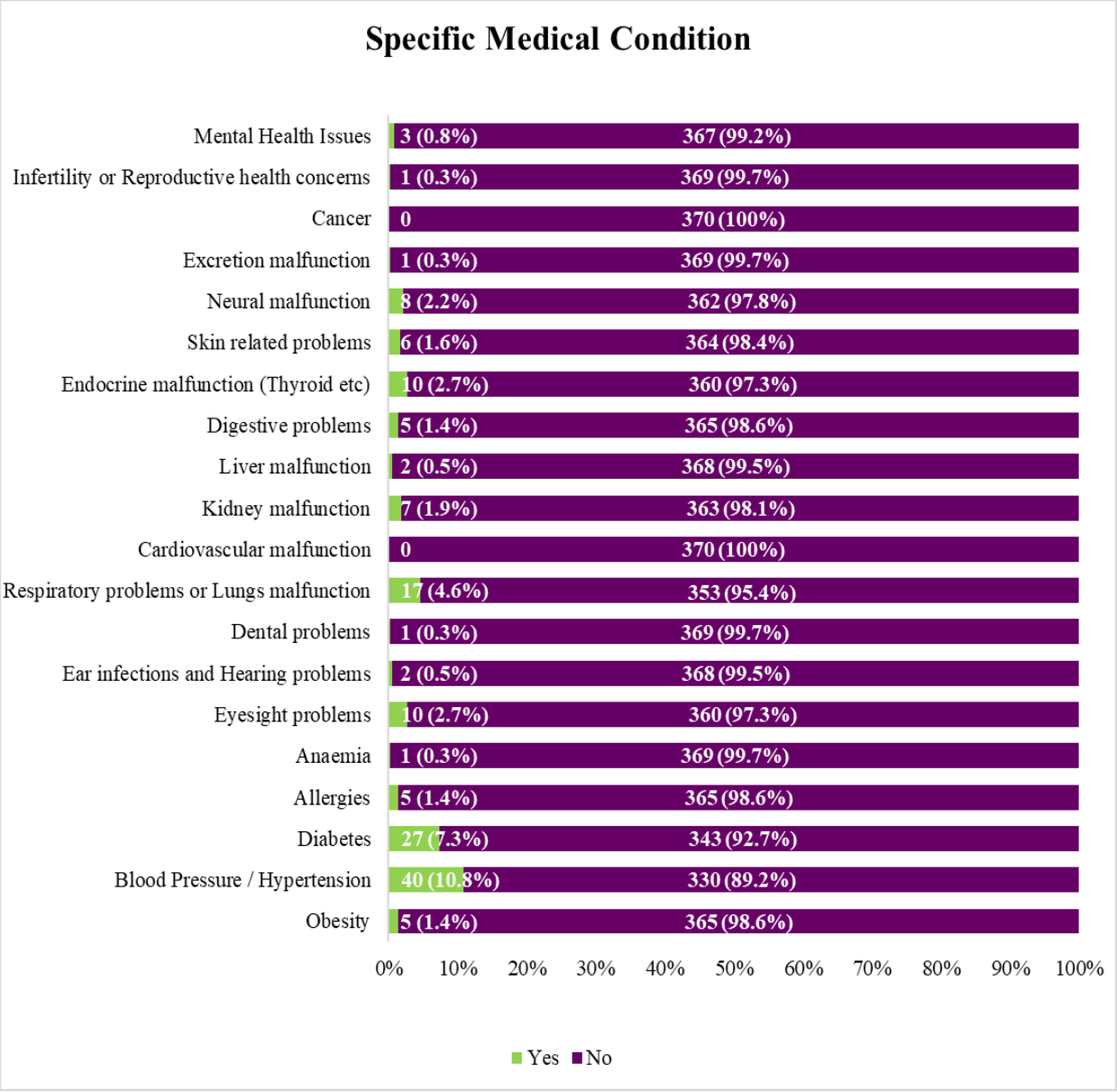
The above figure 7.24 clearly explains the general medical condition of the rural population selected for the study. It is noted that 13.8% (51) of the respondents suffer from cold or cough, followed by 11.4% (42) of the respondents have fevers regularly or frequently. It is further inferred that 5.7% (21) of the sample have headaches, 4.1% (15) of the respondents experience stress and 3.5% (13) of the rural people have body pain. Then, 2.4% (9) of the respondents have suffered with diarrhoea and 2.2% (8) of the respondents have giddiness or dizziness. Therefore, it is understood that the majority of the rural people selected for the study lead healthy lifestyles whereas the people who have medical conditions are the least in number.

7.2.5. Specific Medical Condition

The specific medical condition of the sample is studied through the factors viz. Obesity, Blood Pressure/Hypertension, Diabetes, Allergies, Anaemia, Eyesight problems, Ear infections and Hearing problems, Dental problems, Respiratory problems or Lungs malfunction, Cardiovascular malfunction, Kidney malfunction, Liver malfunction, Digestive problems, Endocrine malfunction (Thyroid etc), Skin related problems, Neural malfunction, Excretion malfunction, Cancer, Infertility or Reproductive health concerns and Mental Health Issues. The results related specific medical condition of the rural people are presented in figure 7.25.

Figure: 7.25

Specific Medical Condition of the Respondents



Source: Primary Data

The frequency distribution from the above figure 7.25 clarifies the specific medical condition of the sample chosen for the study. It is found that 10.8% (40) of the respondents have blood pressure or hypertension, followed by 7.3% (27) of the respondents have diabetes and the respondents having respiratory problems or lungs malfunction constitute 4.6% (17) of the total sample. It is further noted that 2.7% (10) of the respondents had eyesight problems and endocrine malfunction whereas 2.2% (8) of the sample have a neural malfunction. The respondents constituting 1.9% (7) have kidney problems, followed by 1.6% (6) of the sample

have skin related problems and 1.4% (5) respondents suffer from obesity, allergies and digestive problems.

The rural people constituting 0.8% (3) have mental health issues and 0.5% (2) respondents suffer from liver malfunction, ear infections and hearing problems. Only, 0.3% (1) of the respondent have anaemia, dental problems, excretion malfunction and infertility or reproductive health concerns. No one in the sample unit is affected by cancer and cardiovascular malfunction. Therefore, the sample distribution reveals that only a minimum number of the rural population is affected by specific health issues like blood pressure or hypertension, diabetes and respiratory problems whereas the remaining people are found to be healthy are maximum in number.

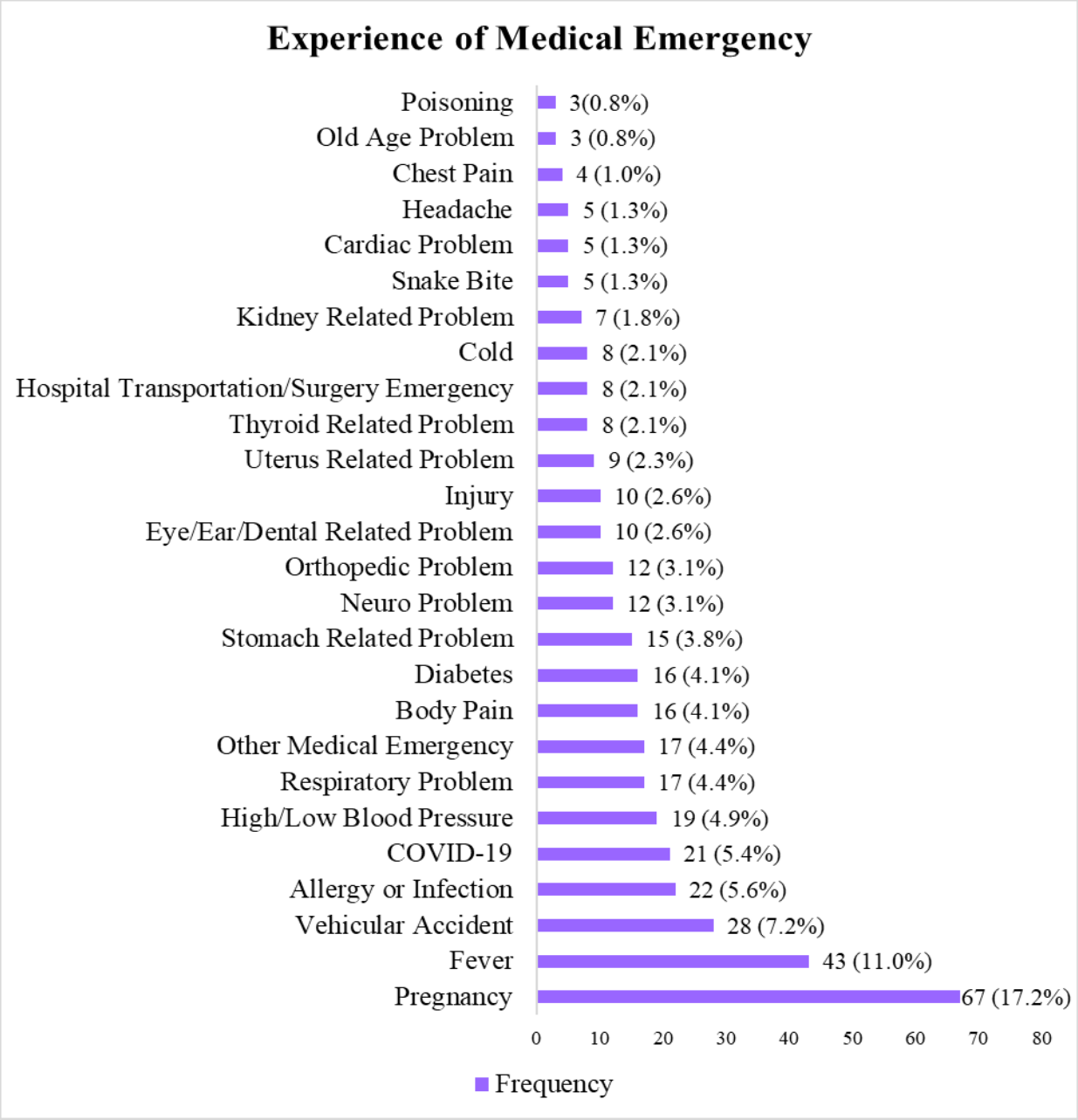
7.2.6. Experience of Medical Emergency

Figure 7.26 explains about medical emergency experienced by the rural people selected for the study. It is observed that majority17.2% (67) of the respondents experienced pregnancy related emergencies, followed by 11.0% (44) of the respondents have had fevers and 7.2% (28) faced a vehicular accident. It is further noted that 5.6% (22) of the sample had allergies or infections whereas 5.4% (21) of the respondents suffered from COVID-19. Then 4.9% of the respondents had high or low blood pressure, 4.4% (17) of the sample had respiratory problems and other medical emergencies and nearly 4.1% (16) of the respondents have body pain and diabetes. The respondents 3.8% (15) of the total sample faced stomach related problems, followed by 3.1% (12) of the respondents who have neuro and orthopaedic problems and 2.6% of the sample have eye/ear/dental problems and also have suffered from an injury.

It is further inferred that 2.3% (9) respondents experienced uterus related problems, 2.1% (8) of the sample suffered from cold, thyroid-related problems and also faced hospital transportation or surgery emergencies. The respondents who have kidney related problems constitute 1.8% (7) of the sample unit and 1.3% (5) of the rural people suffered from snake bites, cardiac problems and headaches. 1.0 % (4) of the respondents experienced chest pain and 0.8% (3) of the respondents suffered from old age problems and poisoning. Therefore, it is inferred that pregnancy, fever and vehicular accidents are the top three medical emergencies experienced by the rural population.

Figure: 7.26

Experience of Medical Emergency



Source: Primary Data

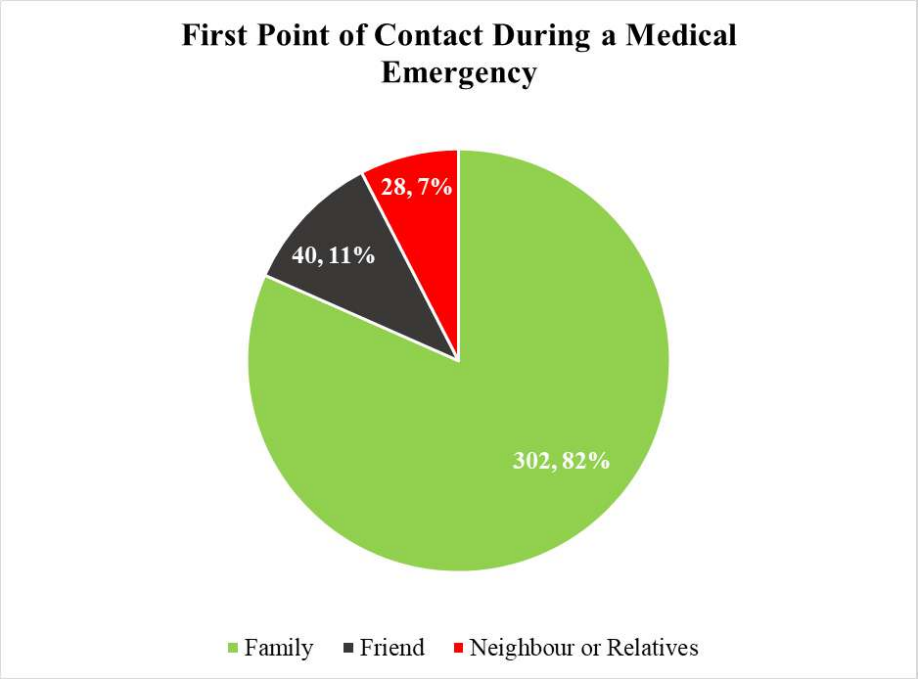
7.2.7. First Point of Contact during a Medical Emergency

The first point of contact during a medical emergency has been classified into three categories namely family, friend and neighbours or relatives. The results related to the first point of contact during a medical emergency is presented in figure 7.27. The data from the below figure 7.27 represents that majority of the respondents comprising 81.6% (302) depend on their family for medical emergencies whereas 10.8% (40) of the respondents rely on their friends during medical emergencies and only 7.6% (28) of the sample approach their

neighbours or relatives for medical emergencies. Hence, it is understood that the rural population who are dependent on their family members for medical emergencies are maximum in number.

Figure: 7.27

First Point of Contact during a Medical Emergency



Source: Primary Data

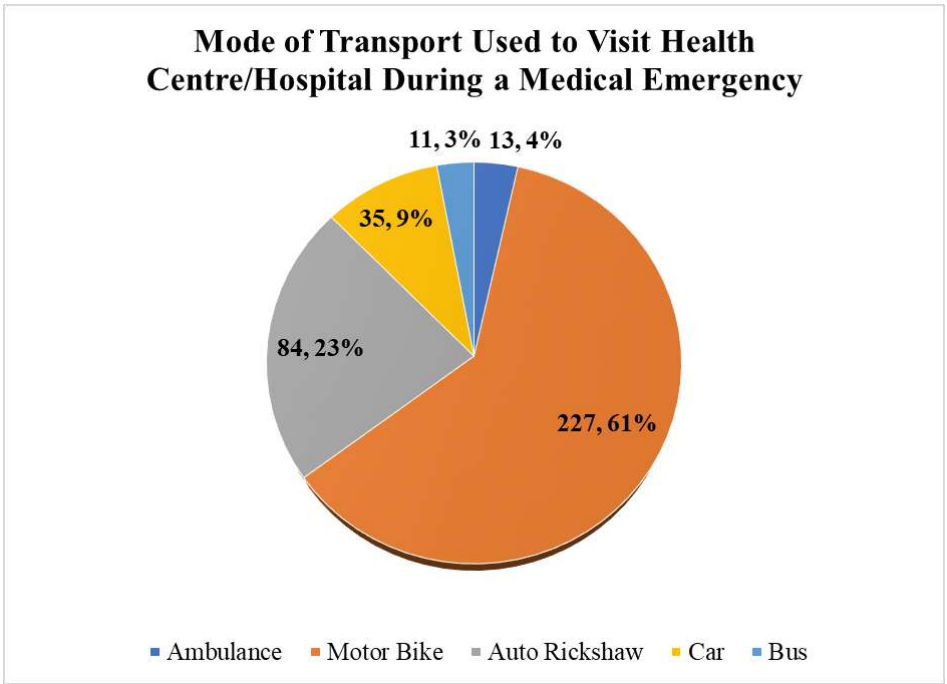
7.2.8. Mode of Transport Used to Visit Health Centre/Hospital during a Medical Emergency

The mode of transport used to visit a health centre/hospital during a medical emergency has been distributed under five categories namely Ambulance, Motor Bike, Auto Rickshaw, Car and Bus. The frequency distribution on the mode of transport used to visit a health centre/hospital during a medical emergency is presented in figure 7.28.

Figure 7.28 shows that the maximum of the respondents used motorbikes to visit the hospital during medical emergencies constituting 61.4 (227) of the total participants, followed by 22.7% (84) of the respondents who used auto rickshaws to visit the hospital and 9.5% (35) of the sample used cars whereas 3.5% (13) respondents availed ambulance services to reach hospitals and only 3.0% (11) of the respondents used public transport during medical emergencies. Therefore, the majority of the rural people chosen for the study used motorbikes as a mode of transport to visit health centres during medical emergencies.

Figure: 7.28

Mode of Transport Used to Visit Health Centre/Hospital during a Medical Emergency

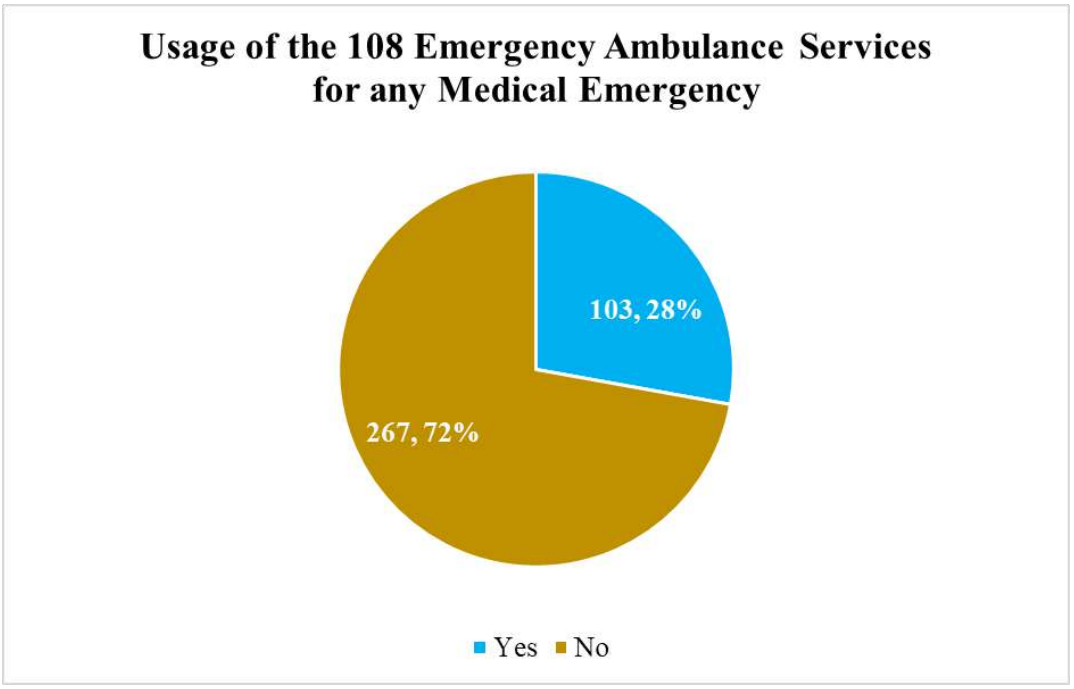


Source: Primary Data

7.2.9. Usage of the 108 Emergency Ambulance Services for any Medical Emergency

Figure: 7.29

Usage of the 108 Emergency Ambulance Services for any Medical Emergency



Source: Primary Data

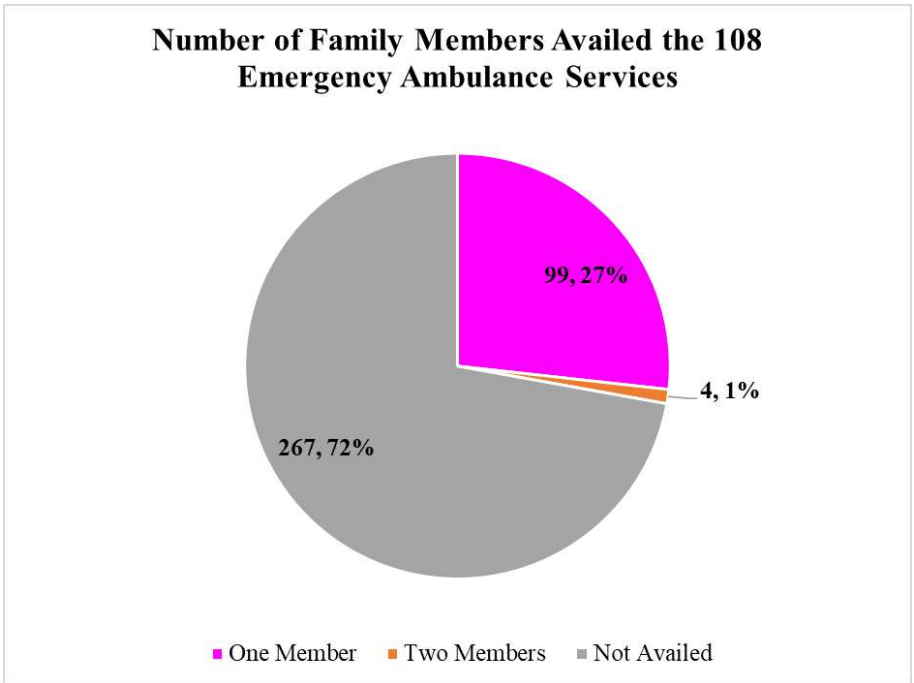
The frequency distribution on the usage of 108 emergency ambulance services for any medical emergency is presented in figure 7.29. From figure 7.29, it is found that the minimum number of 27.8% (103) respondents availed 108 ambulance services during medical emergencies whereas 72.2% (267) of the respondents have not used 108 ambulance services during medical emergencies. The frequency distribution of the above figure explains that the usage of 108 ambulance services of the rural population is less in number. Thus, awareness is needed for the rural people of using 108 emergency ambulance services.

7.2.10. Number of Family Members Availed the 108 Emergency Ambulance Services

The frequency distribution on the number of family members who availed the 108 Emergency Ambulance Services by classifying it into 3 categories viz. One member, Two members and Not availed are presented in figure 7.30.

Figure: 7.30

Number of Family Members Availed the 108 Emergency Ambulance Services



Source: Primary Data

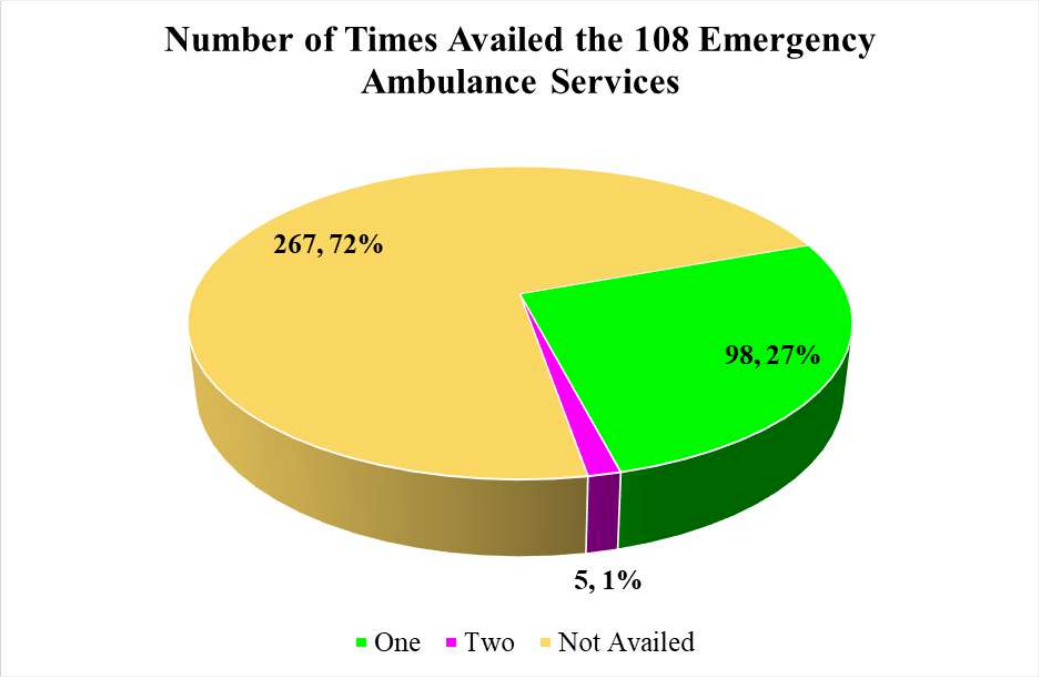
It is inferred from the above figure 7.30 that majority 72.1% (267) of the respondents' family have not availed of the 108 ambulance services whereas 26.8% (99) of the respondents have one member from their family who availed the 108 ambulance services and only 1.1% (4) of the sample have two members from their family who availed the 108 ambulance services. Hence it is understood that the maximum number of rural people have not availed the 108 ambulance services.

7.2.11. Number of Times Availed the 108 Emergency Ambulance Services

The frequency distribution on the number of times the rural people availed 108 Emergency Ambulance Services by classifying it into 3 categories viz. One, Two and Not availed are presented in figure 7.31.

Figure: 7.31

Number of Times Availed the 108 Emergency Ambulance Services



Source: Primary Data

From figure 7.31, it is clear that the respondents 26.5% (98) of the total sample availed the 108 emergency ambulance services only once and 1.3% (5) of the respondents availed 108 ambulance services twice whereas the remaining 72.2% (267) respondents have not availed the 108 emergency ambulance services.

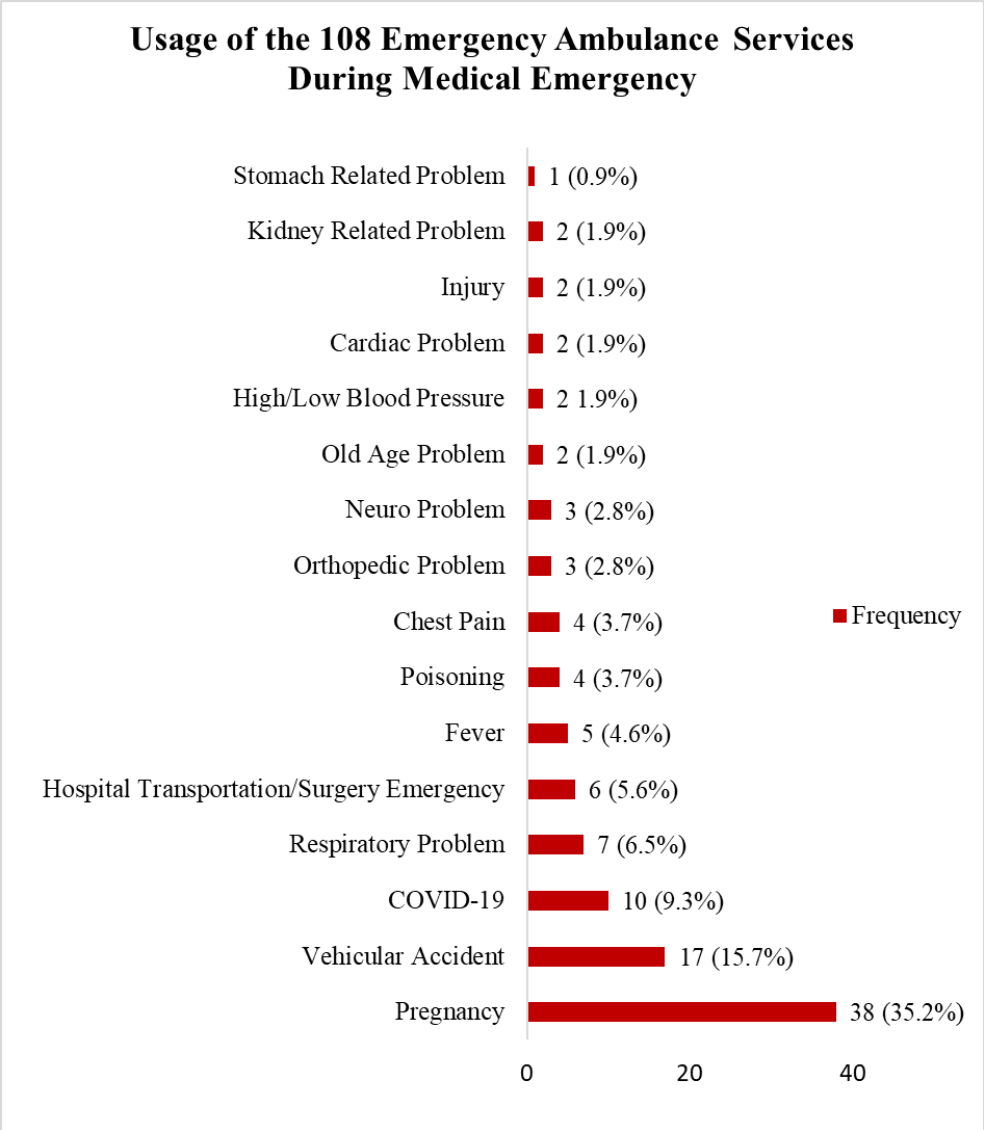
7.2.12. Usage of the 108 Emergency Ambulance Services During Medical Emergency

Figure 7.32 infers that the majority of the respondents constituting 35.2% (38) used 108 emergency ambulance services during pregnancy related emergencies, followed by 15.7% (17) respondents who used the services during vehicular accidents and 9.3% (10) of the sample used while being affected by COVID-19. It is further noted that 6.5% (7) of the respondents used during respiratory problems whereas 5.6% (6) used 108 emergency ambulance for hospital transportation or surgeries and 4.6% (5) of the respondents used 108 ambulances while suffering with a fever. An equal per cent 3.7% (4) of the sample used the services when experiencing medical emergencies due to poisoning and chest pain and 2.8% (3) of the respondents used when 108 emergency ambulance when they suffered from orthopaedic and

neuro problems. It is also noted that 1.9% (2) of the rural people chosen for the study used 108 emergency ambulance for medical emergencies such as old age health issues, high or low blood pressure, cardiac problems, injuries and kidney-related problems and only 0.9% (1) respondents used for stomach related problems. Thus, the majority of rural people considered for the study used 108 emergency ambulance services for pregnancy and vehicular accident-related emergencies when compared to other health issues.

Figure: 7.32

Usage of the 108 Emergency Ambulance Services During Medical Emergency



Source: Primary Data

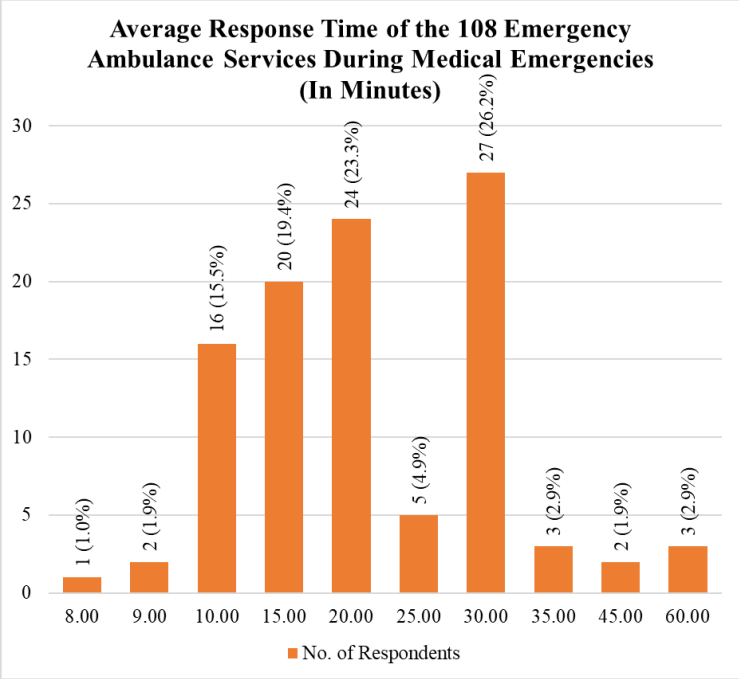
7.2.13. Average Response Time of the 108 Emergency Ambulance Services During Medical Emergencies

The average response time of the 108 emergency ambulance services during medical emergencies is presented in figure 7.33. Figure 7.33 shows that 58.2% (60) of the respondents

found that 10 to 20 minutes of average response time was taken by the 108 emergency ambulance services whereas 31.1% (32) of the sample found that 25 to 30 minutes was the average time taken by 108 ambulances during a medical emergency. It is further inferred that the respondents who constitutes 7.7% (8) of the sample observed that the average response time taken by 108 ambulance services was above 30 minutes and only 2.9% (3) respondents found that the average time taken by 108 was below 10 minutes during their medical emergencies.

Figure: 7.33

Average Response Time of the 108 Emergency Ambulance Services During Medical Emergencies (In Minutes)



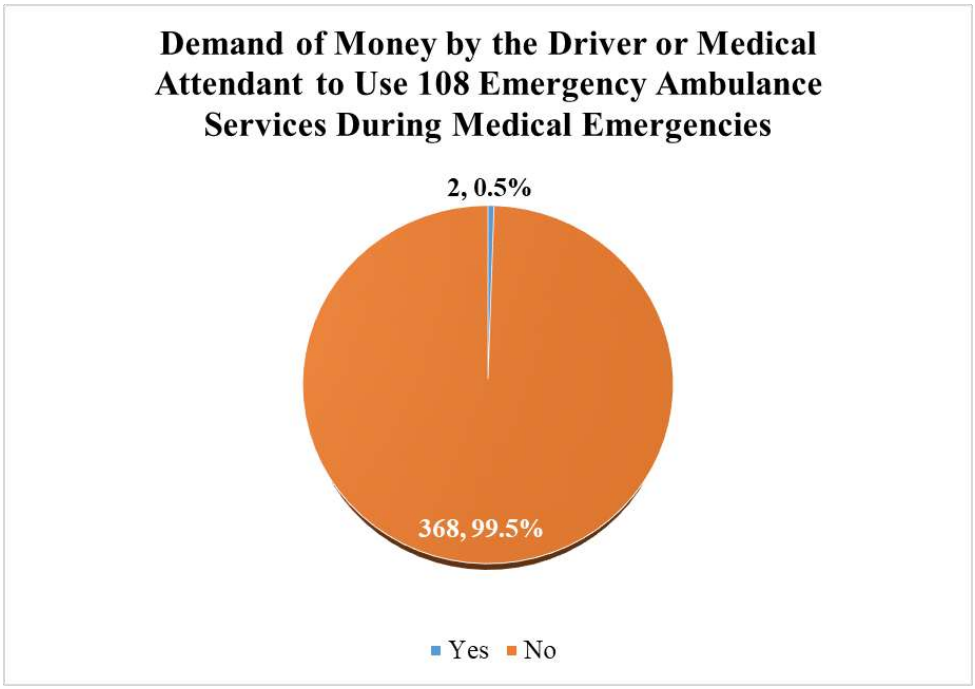
Source: Primary Data

7.2.14. Demand of Money by the Driver or Medical Attendants to Use 108 Emergency Ambulance Services during Medical Emergencies

The experience of rural respondents on the demand of money by the driver or medical attendant to use 108 emergency ambulance services during medical emergencies is presented in figure 7.34. Figure 7.34 shows that during the usage of 108 ambulance services 99.5% (368) of the respondents did not face any issue of money demanded by the driver or medical attendant and only 0.5% (2) of the sample faced demanding of money by the driver or medical attendant during medical emergencies. Therefore, it is clearly revealed that the 108 ambulance drivers and attendants are not demanding money from rural people to use 108 emergency ambulance services to an extent of 99.5%.

Figure: 7.34

Demand of Money by the Driver or Medical Attendant to Use 108 Emergency Ambulance Services during Medical Emergencies



Source: Primary Data

7.2.15. Expectation of Gratuity (Tip) in Cash by the Driver or Medical Attendant to Use 108 Emergency Ambulance Services during Medical Emergencies

The experience of rural respondents on the expectation of gratuity (tip) in cash by the driver or medical attendant to use 108 emergency ambulance services during Medical Emergencies is presented in figure 7.35.

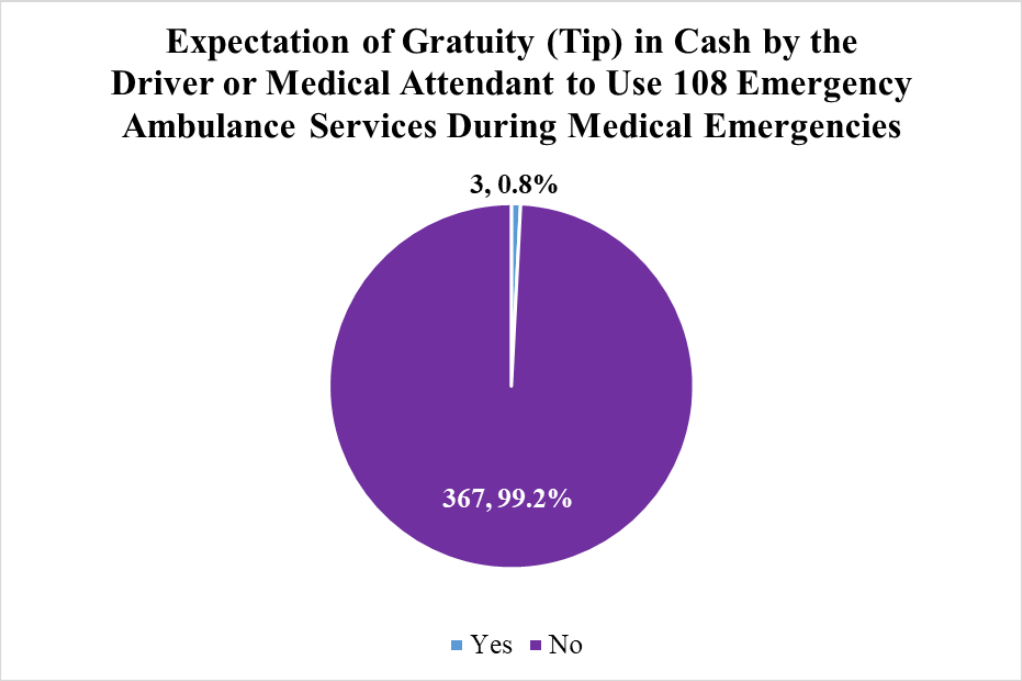
Figure 7.35 represents that the majority of the 99.2% (367) of the respondents did not experience any expectation of gratuity in cash by the driver or medical attendant whereas 0.8% (3) of the respondents faced the expectation of gratuity in cash by the driver or medical attendant during the usage of 108 ambulance services for medical emergencies. Hence, it is inferred that the 108 ambulance drivers and attendants are not expecting gratuity (tip) in cash from rural people to use 108 emergency ambulance services to an extent of 99.2%.

7.2.16. Recommendation for Using the 108 Emergency Ambulance Services During a Medical Emergency

Figure 7.36 reveals that 85.4% (316) of the respondents were recommended to use 108 emergency ambulance services during their medical emergencies and 14.6% (54) of the sample were not recommended to use 108 ambulances during their medical emergencies. Hence, it is inferred that rural people are being recommended to use 108 ambulances.

Figure: 7.35

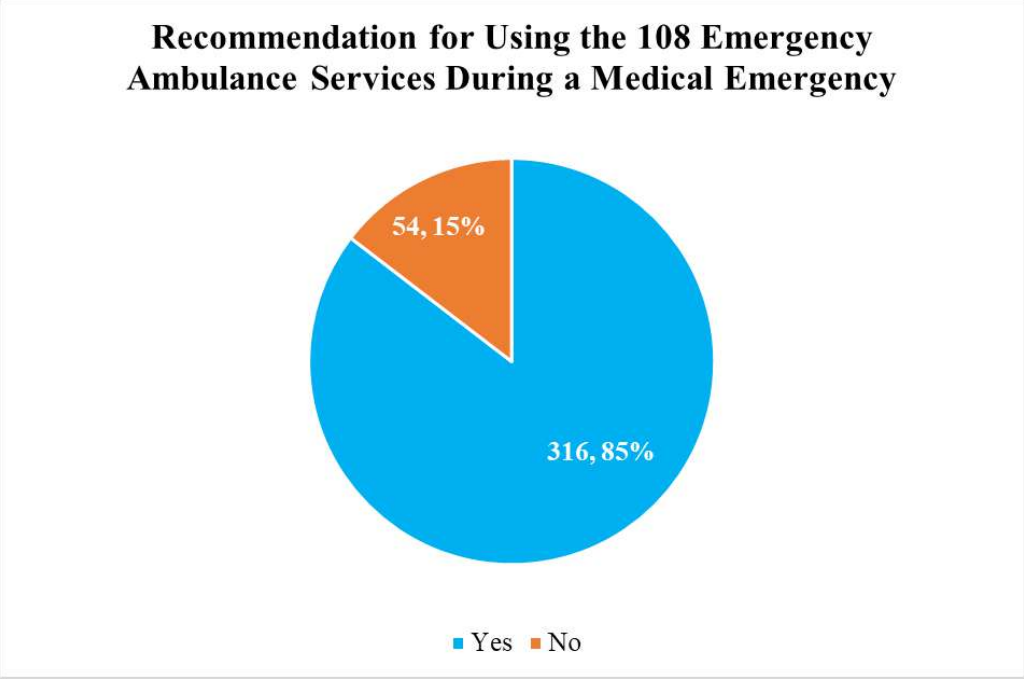
Expectation of Gratuity (Tip) in Cash by the Driver or Medical Attend to Use 108 Emergency Ambulance Services during Medical Emergencies



Source: Primary Data

Figure: 7.36

Recommendation for Using the 108 Emergency Ambulance Services During a Medical Emergency



Source: Primary Data

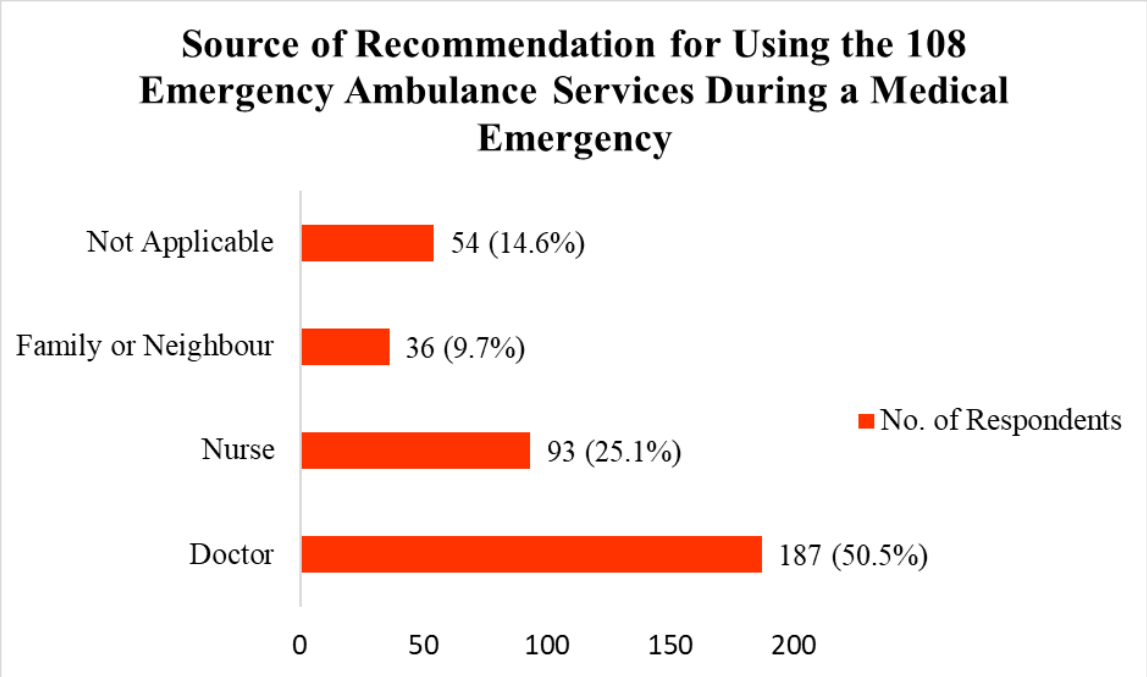
7.2.17. Source of Recommendation for Using the 108 Emergency Ambulance Services during a Medical Emergency

The frequency distribution on the source of recommendation for using the 108 emergency ambulance services during a medical emergency is classified into 3 categories namely Doctor, Nurse and Family or Neighbour. The results pertaining to the source of recommendation is presented in figure 7.37.

Figure 7.37 clarifies that 50.5% (187) of the respondents were recommended by doctors to use the 108 ambulance services, followed by 25.1% (93) of the rural people who were recommended by nurses to use the 108 ambulance services during their medical emergencies. It is also noted that 9.7% of the respondents were recommended by their family members or neighbours to use 108 ambulance services during medical emergencies and the remaining 14.6% (54) respondents were not applicable.

Figure: 7.37

Source of Recommendation for Using the 108 Emergency Ambulance Services during a Medical Emergency



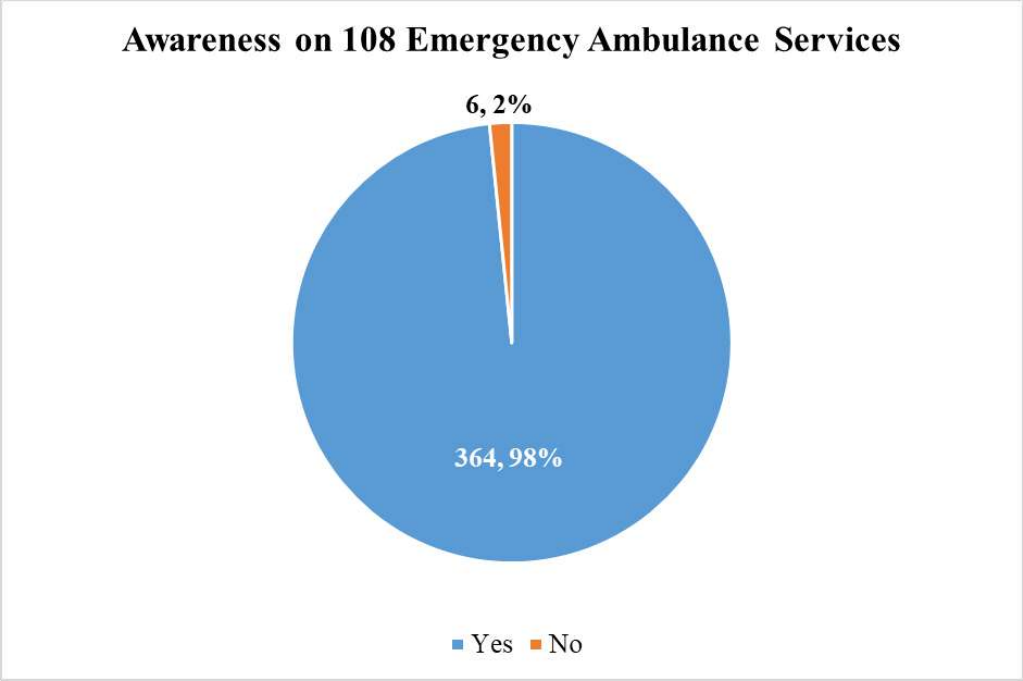
Source: Primary Data

7.2.18. Awareness on 108 Emergency Ambulance Services

The status of rural respondents' awareness on 108 emergency ambulance services is presented in figure 7.38. From figure 7.38, it is observed that the majority 98.4% (364) of the respondents had awareness of 108 emergency ambulance services and only 1.6% (6) of the sample were not aware of 108 emergency ambulance services.

Figure: 7.38

Awareness on 108 Emergency Ambulance Services

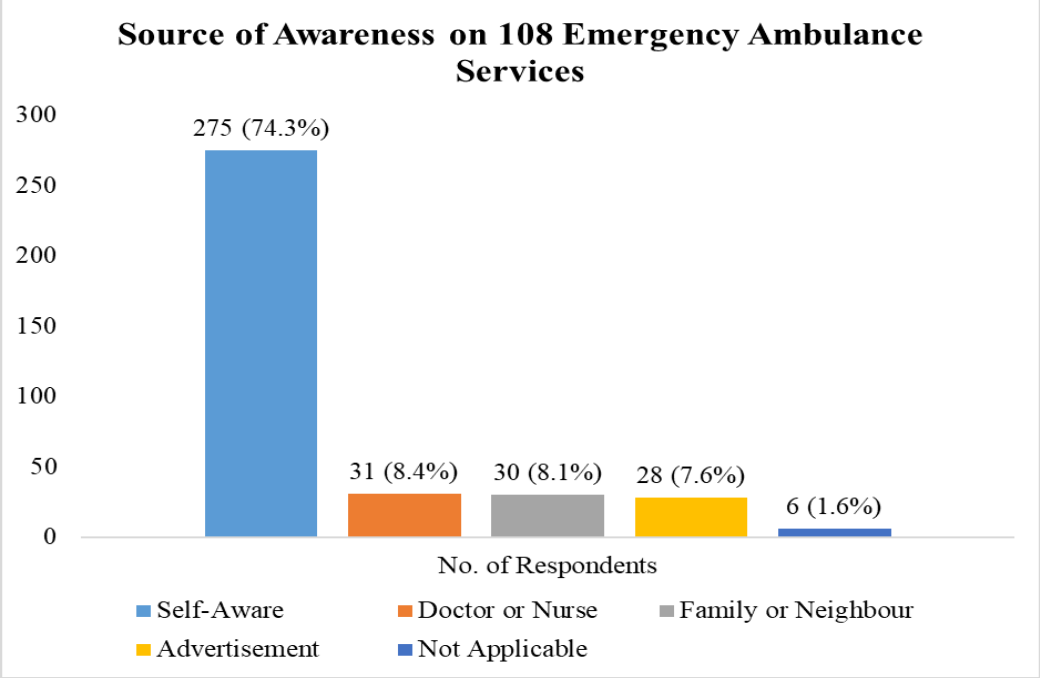


Source: Primary Data

7.2.19. Source of Awareness on 108 Emergency Ambulance Services

Figure: 7.39

Source of Awareness on 108 Emergency Ambulance Services



Source: Primary Data

The frequency distribution on the source of awareness on 108 emergency ambulance services has been classified into 4 categories viz. Self-Aware, Doctor or Nurse, Family or Neighbour and Advertisement. The results on the source of awareness on 108 emergency ambulance services are presented in figure 7.39.

It is inferred from the above figure 7.39 that 74.3% (275) of the respondents are self-aware of 108 emergency ambulance services, followed by 8.4% (31) of the sample got awareness on 108 ambulance services by doctor or nurse and 8.1% (30) of the respondents were made aware of 108 ambulance services by their family members or neighbours. It is noted that 7.6% (28) of the rural people are aware of 108 ambulance services by seeing advertisements whereas 1.6% (6) of the respondents are not applicable.

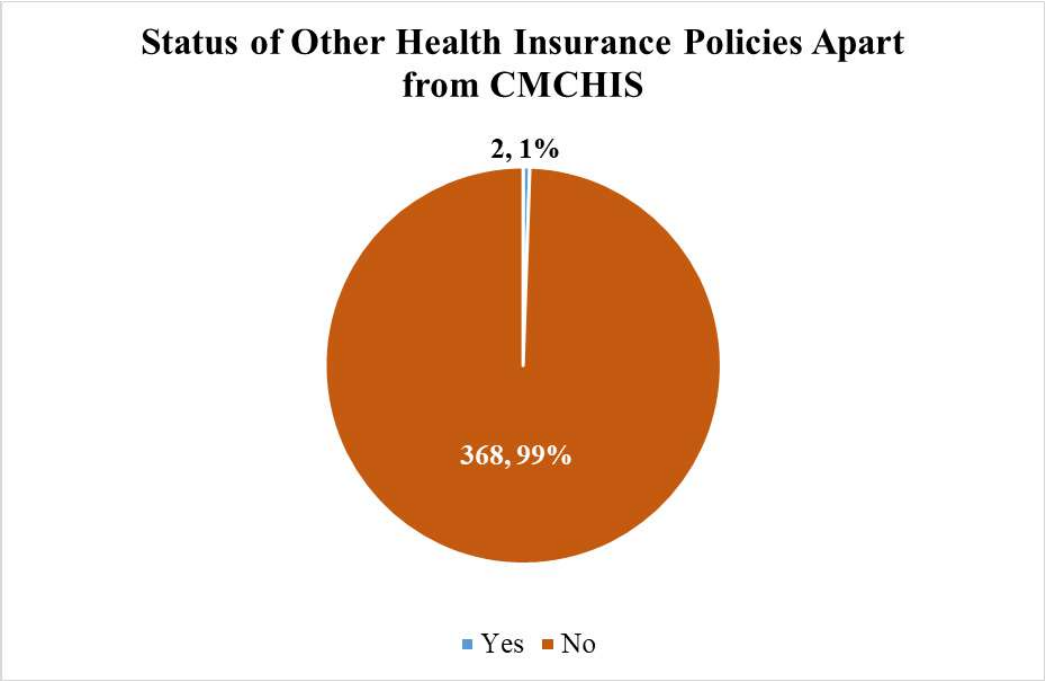
7.2.20. Status of Other Health Insurance Policies Apart from CMCHIS

The status of other health insurance policies apart from the Chief Minister's Comprehensive Health Insurance Scheme (CMCHIS) is presented in figure 7.40.

Figure 7.40 shows that the majority of the rural people considered for the study have not taken any health insurance and only 0.5% (2) of the respondents have taken health insurance apart from the Chief Minister's Comprehensive Health Insurance Scheme.

Figure: 7.40

Status of Other Health Insurance Policies Apart from CMCHIS



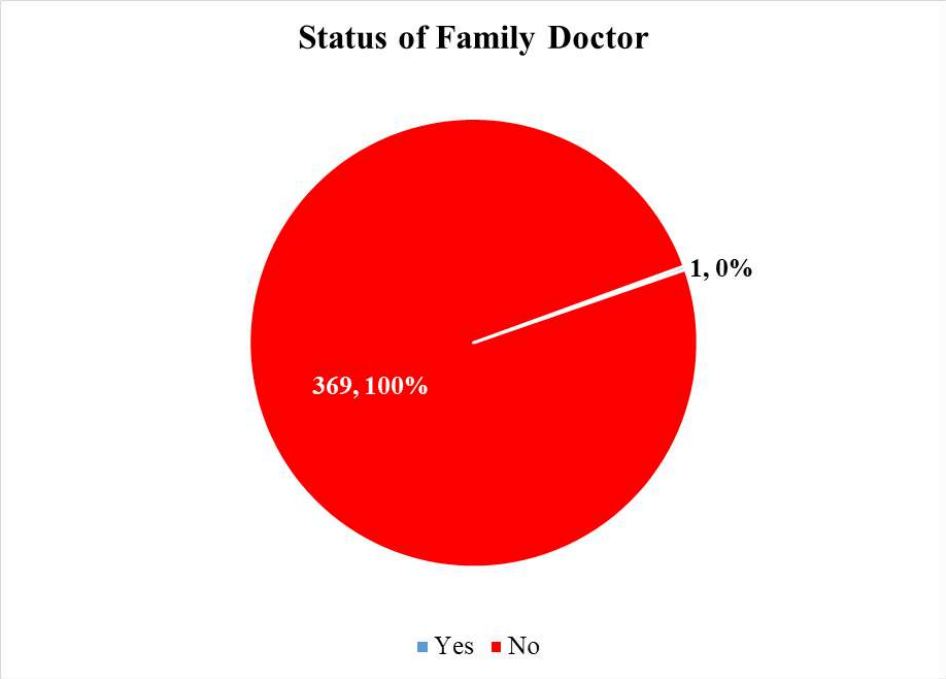
Source: Primary Data

7.2.21. Status of Family Doctor

The status of a family doctor for rural respondents is explained in figure 7.41. From figure 7.41, it is verified that only 0.3% (1) of the respondents have family doctors whereas the remaining respondents 99.7% (369) who don't have family doctors are the maximum in number.

Figure: 7.41

Status of Family Doctor



Source: Primary Data

7.2.22. Nearest Health Care Centre from the Residence

The frequency distribution on the nearest health care centre from the residence of rural people is categorised into three namely primary health centre, government hospital and private hospital. The details on the nearest health care centre from the residence is shown in figure 7.42. Figure 7.42 represents that 49.5% (183) of the rural people have private hospitals nearer to their residence, followed by 34.6% (128) of the respondents have primary health care centres as their nearest medical facility and 15.9% (59) reside nearer to the government hospitals.

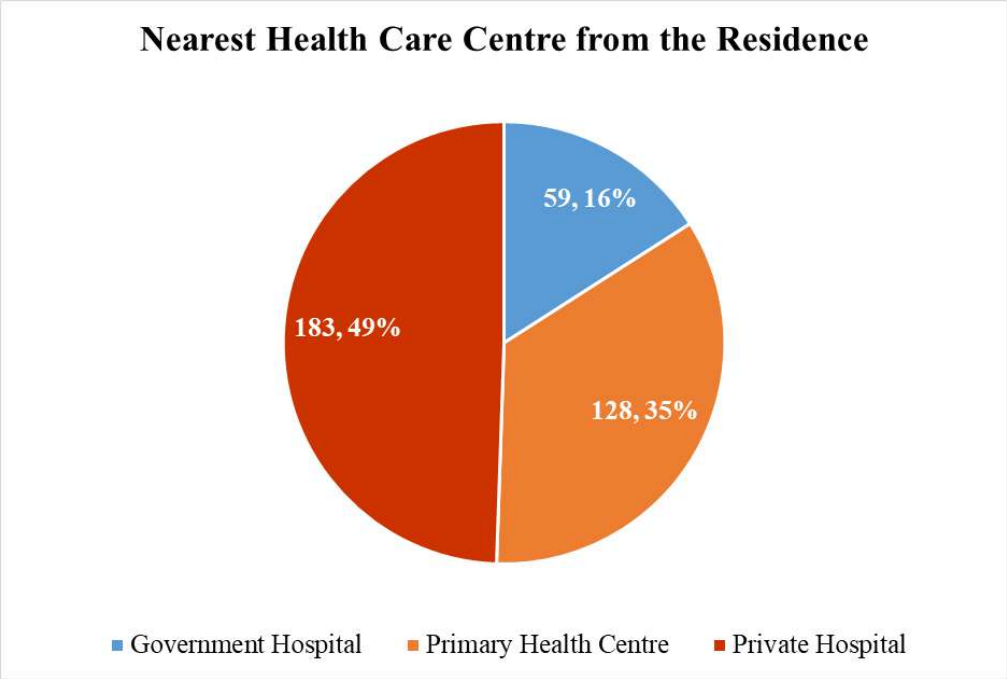
7.2.23. Preference of Hospital

The frequency distribution on the preference of hospital by rural respondents is categorised into a government hospital, private hospital and both. The results on the preference of hospital by rural respondents is presented in figure 7.42. Figure 7.43 explains that 40.0% (148) of the respondents prefer government hospitals for their medical emergency, 36.2% (134)

of the sample prefer private hospitals for a medical emergency and 23.8% (88) prefer both government and private hospitals for medical emergencies.

Figure: 7.42

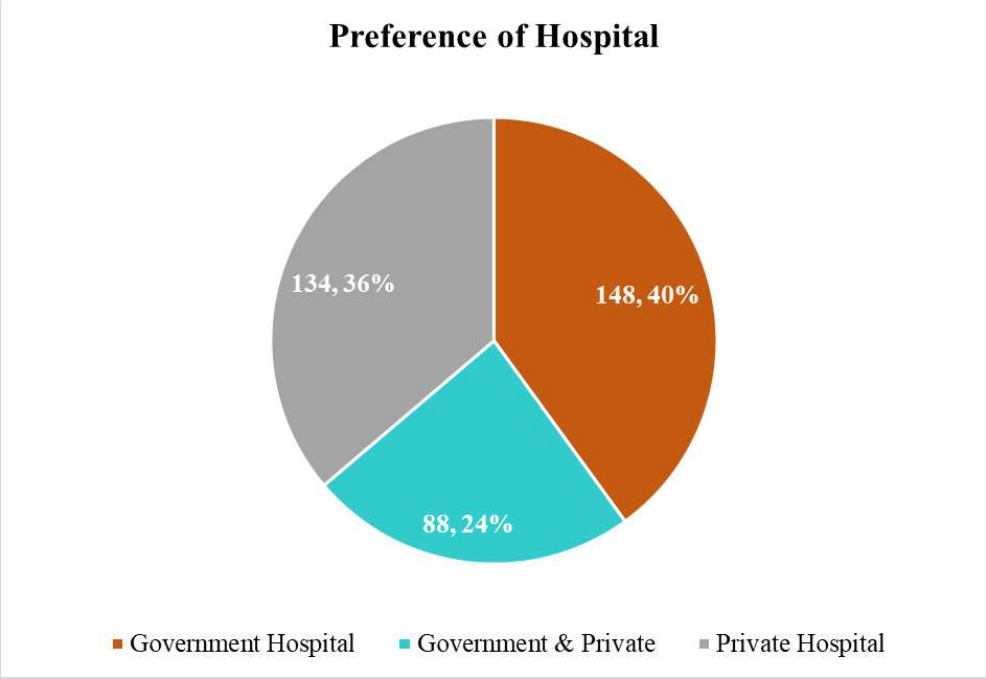
Nearest Health Care Centre from the Residence



Source: Primary Data

Figure: 7.43

Preference of Hospital



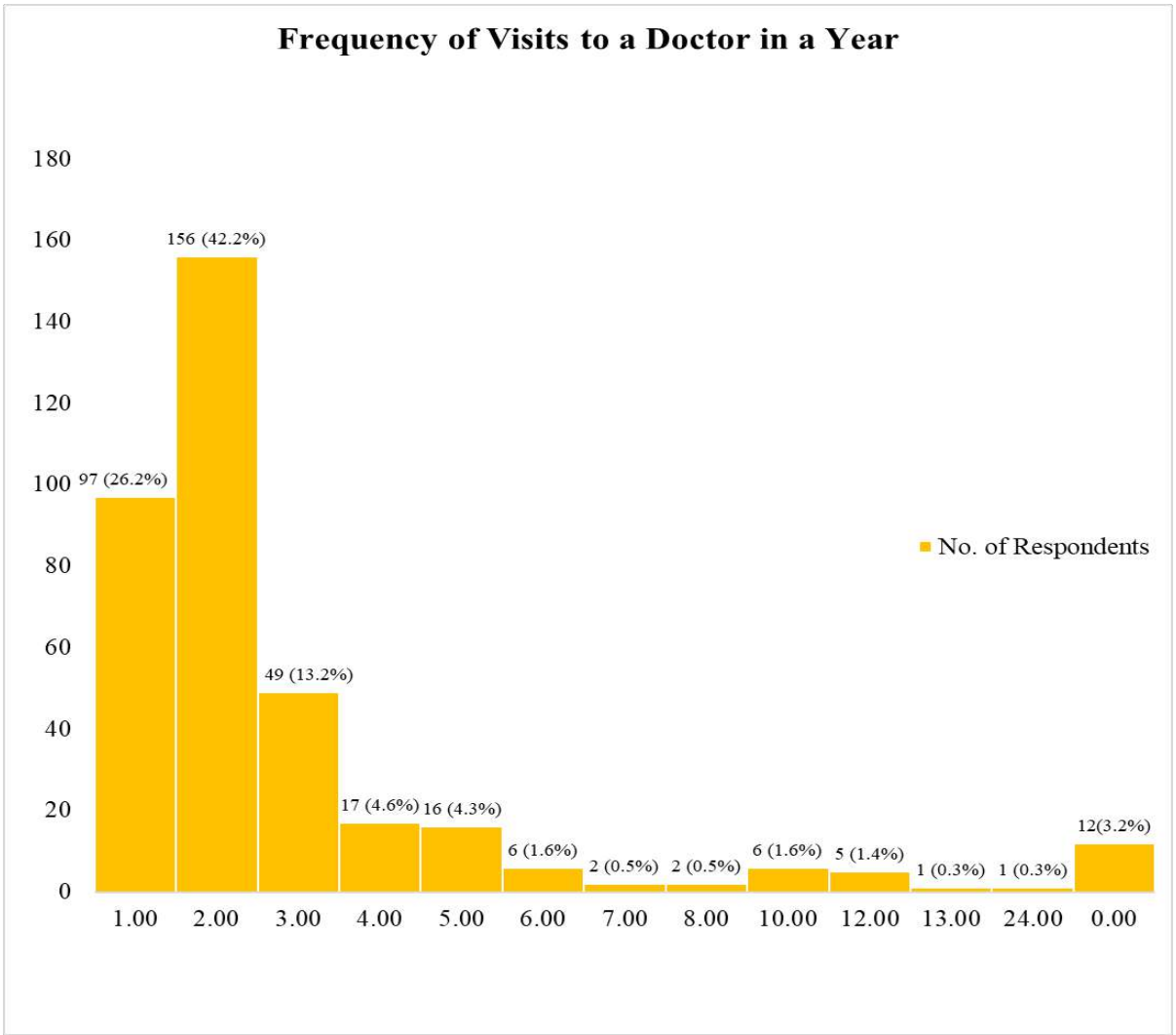
Source: Primary Data

7.2.24. Frequency of Visits to a Doctor in a Year

The frequency of visits to a doctor in a year by the rural people is presented in figure 7.44. Figure 7.44 represents that the majority of the 42.2% (156) respondents visit the doctor 2 times in a year, followed by 26.2% (97) of the sample visit the doctor once a year and the respondents constituting 22.2% (82) visit the doctor 3 to 5 times in a year. It is also noted that 16 respondents representing 4.3% of the sample visit the doctor 5 to 10 times in a year and 1.9% (7) of the respondents visit the doctor 12 to 24 times in a year.

Figure: 7.44

Frequency of Visits to a Doctor in a Year



Source: Primary Data

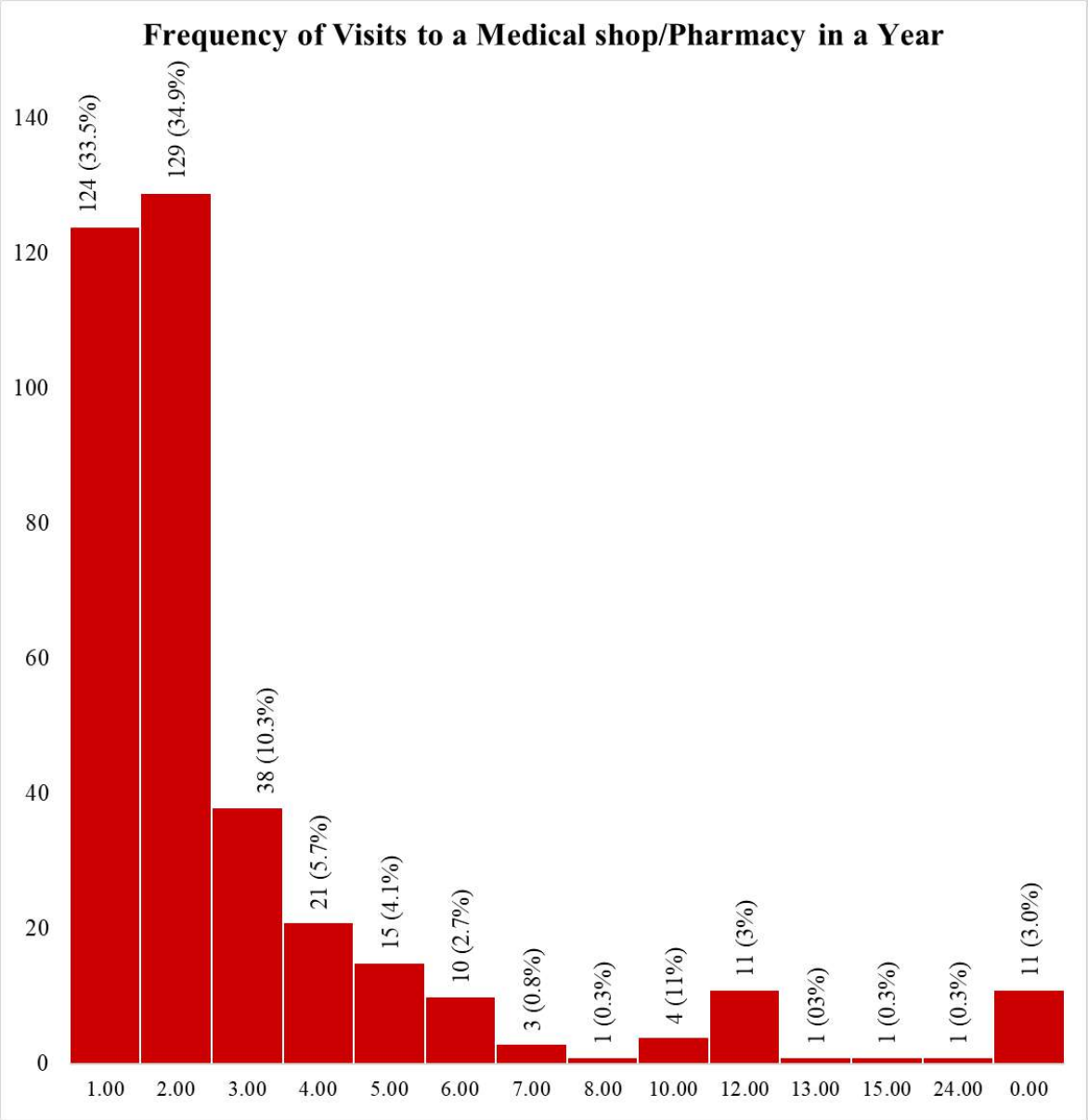
7.2.25. Frequency of Visits to a Medical shop/Pharmacy in a Year

The frequency of visits to a medical shop/pharmacy in a year by the rural sample is presented in figure 7.45. From figure 7.45, it is clear that the maximum number of 68.4% (253) respondents visit medical shops 1 or 2 times in a year whereas 20.0% (74) of the sample visit

medical shops 3 to 5 times in a year. It is found that the respondents constitute 4.9% (18) of the sample visit a medical shop 6 to 10times in a year and 3.8% (14) of the rural people visit a medical shop 12 to 24 times in a year.

Figure: 7.45

Frequency of Visits to a Medical shop/Pharmacy in a Year



Source: Primary Data

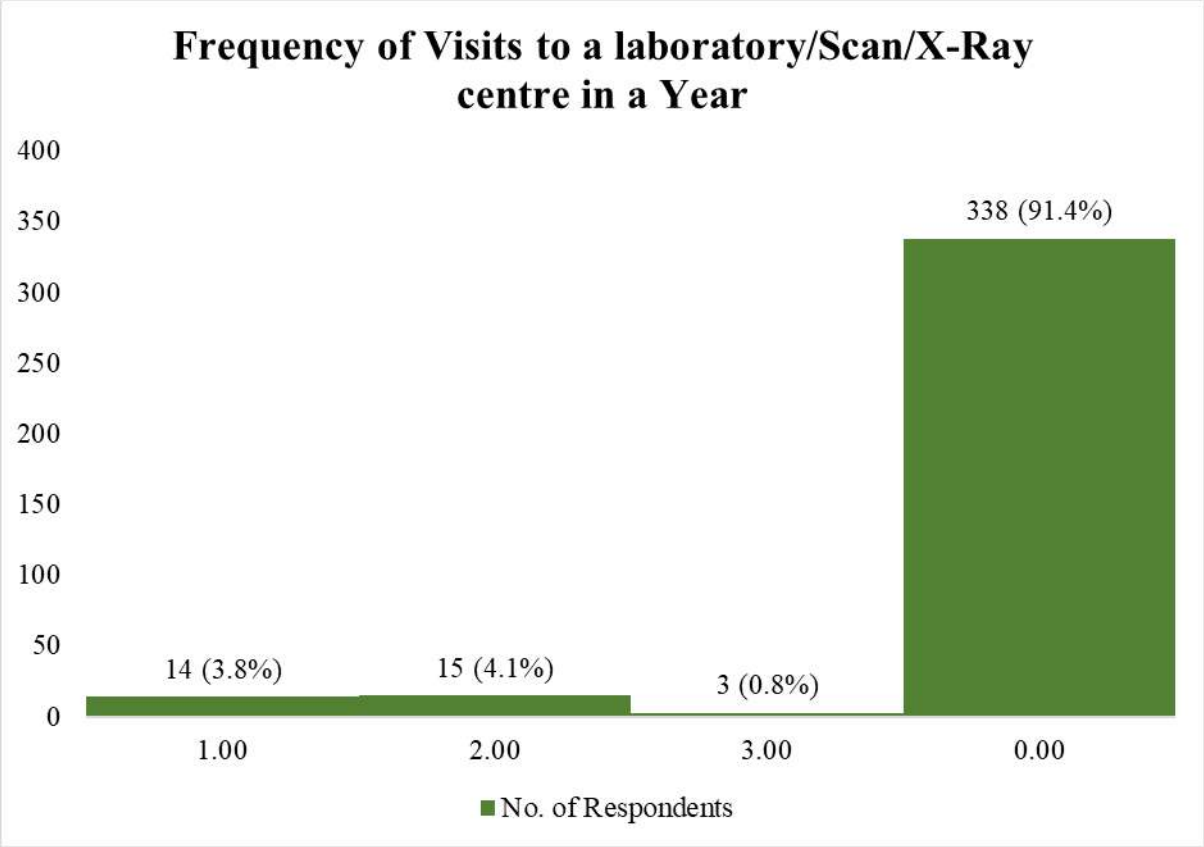
7.2.26. Frequency of Visits to a laboratory/Scan/X-Ray centre in a Year

The frequency of visits to a laboratory/scan/x-ray centre in a year by the rural people is presented in figure 7.46. It is inferred from the above figure 7.46 that 4.1% (15) of the respondents visit the laboratory or Scan or X-Ray centre 2times in a year, followed by respondents constituting 3.8% (14) who visit the laboratory or Scan or X-Ray centre once a

year and 0.8% (3) of the respondents visit the laboratory or Scan or X-Ray centre 3 times in a year. From the above frequency distribution, it is understood that there is no frequent visit to laboratory or Scan or X-Ray centre by the majority 91.4% (338) of the respondents considered for the study.

Figure: 7.46

Frequency of Visits to a laboratory/Scan/X-Ray centre in a Year



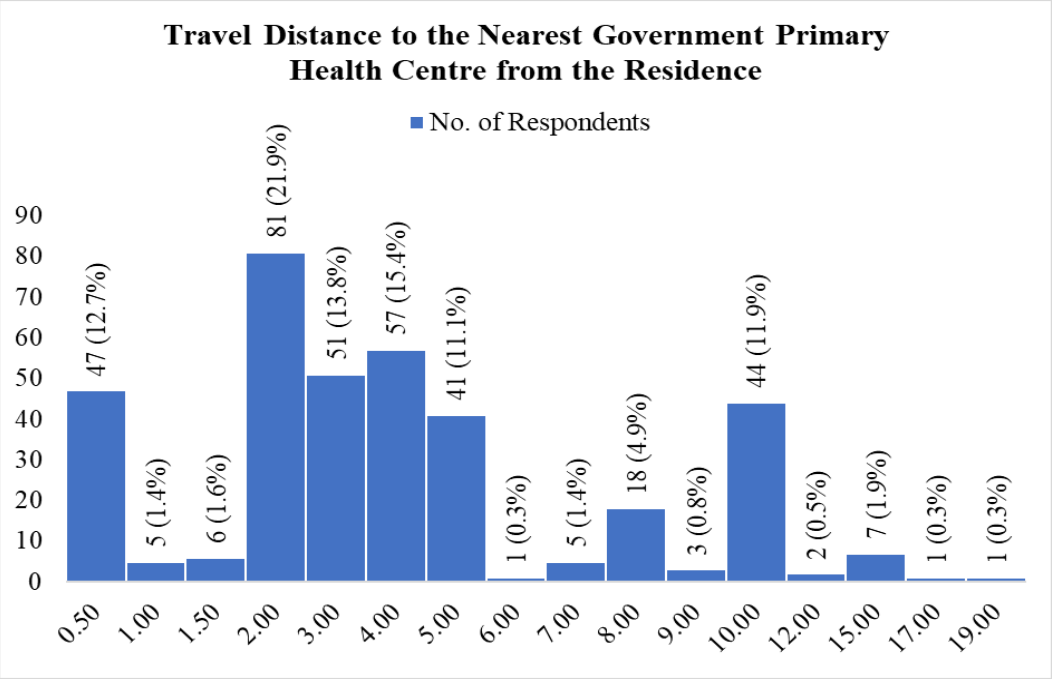
Source: Primary Data

7.2.27. Travel Distance to the Nearest Government Primary Health Centre from the Residence

The travel distance to the nearest government primary health centre from the residence of the rural people is presented in figure 7.47. Figure 7.47 verifies that the respondents constituting 62.1% (230) of the sample travel 2 to 5 km to reach the nearest government primary health centre whereas 15.7% (58) of the respondents take 0.5 to 1.50 km of travel distance to reach the nearest government health centre. It is found that 55 respondents represent 14.9% of the total travel 10 to 19 km and 7.3% (27) of the respondents take 6 to 9 km of travel distance to reach the nearest government primary health care.

Figure: 7.47

Travel Distance to the Nearest Government Primary Health Centre from the Residence



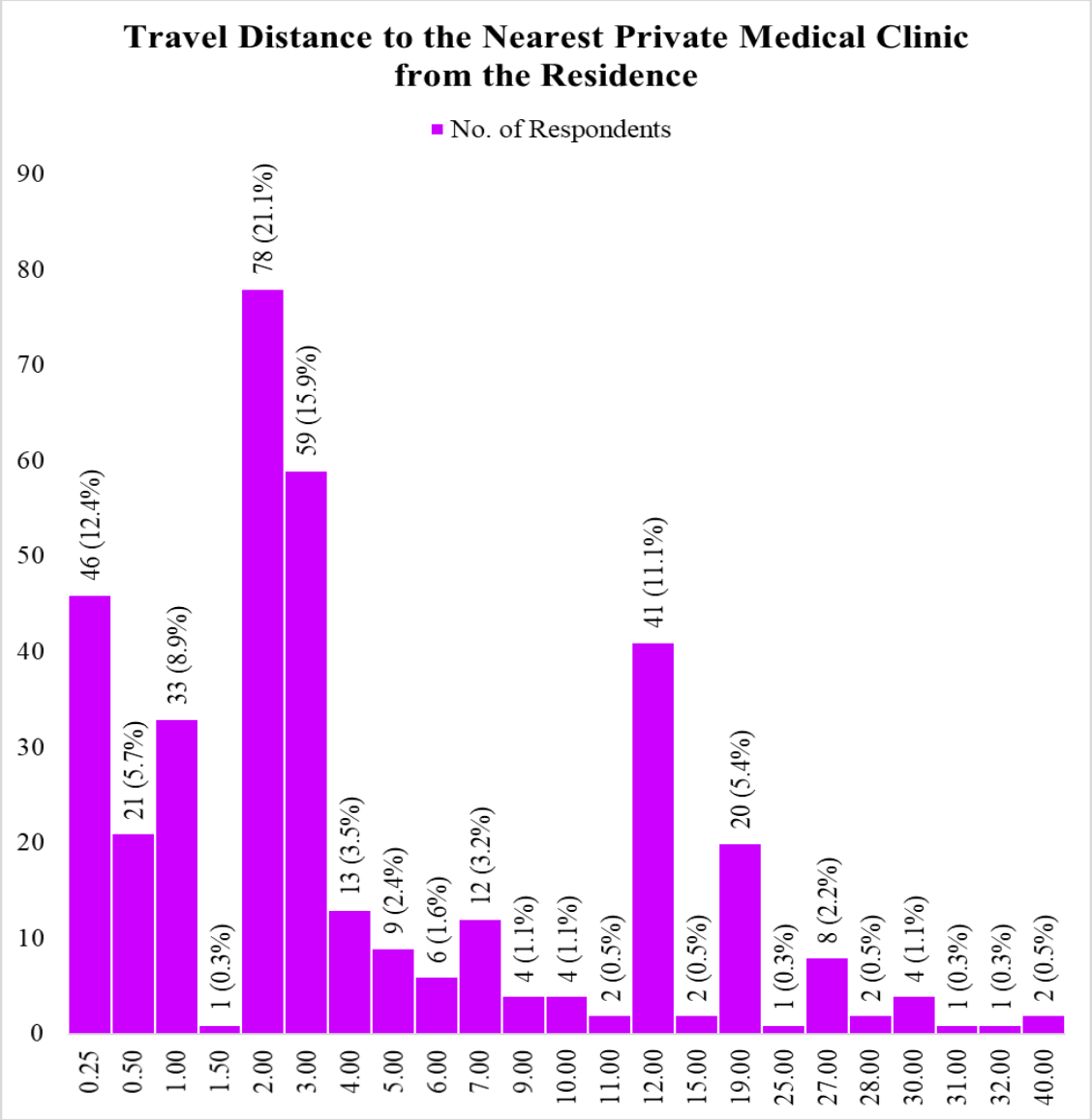
Source: Primary Data

7.2.28. Travel Distance to the Nearest Private Medical Clinic from the Residence

The travel distance to the nearest private medical clinic from the residence of the rural respondents is presented in figure 7.48. From figure 7.48, it is observed that the majority 44.6% (165) of the respondents experienced a travel distance of 2 – 6 km to reach the nearest private medical clinic from their residence. Nearly, 27.3% (101) of the rural people travel 0.25 -1.50km to reach the nearest private medical clinic whereas 65 respondents who constitute 17.6% of the total sample travel 7 - 15km to reach the nearest private clinic from their residence. It is further noted that 8.4% (31) of the respondents travel a longer distance of 19 - 28km to reach the nearest private clinic and 2.2% (8) of the sample also take a longer distance of 30 - 40km to reach the nearest private medical clinic from their residence.

Figure: 7.48

Travel Distance to the Nearest Private Medical Clinic from the Residence



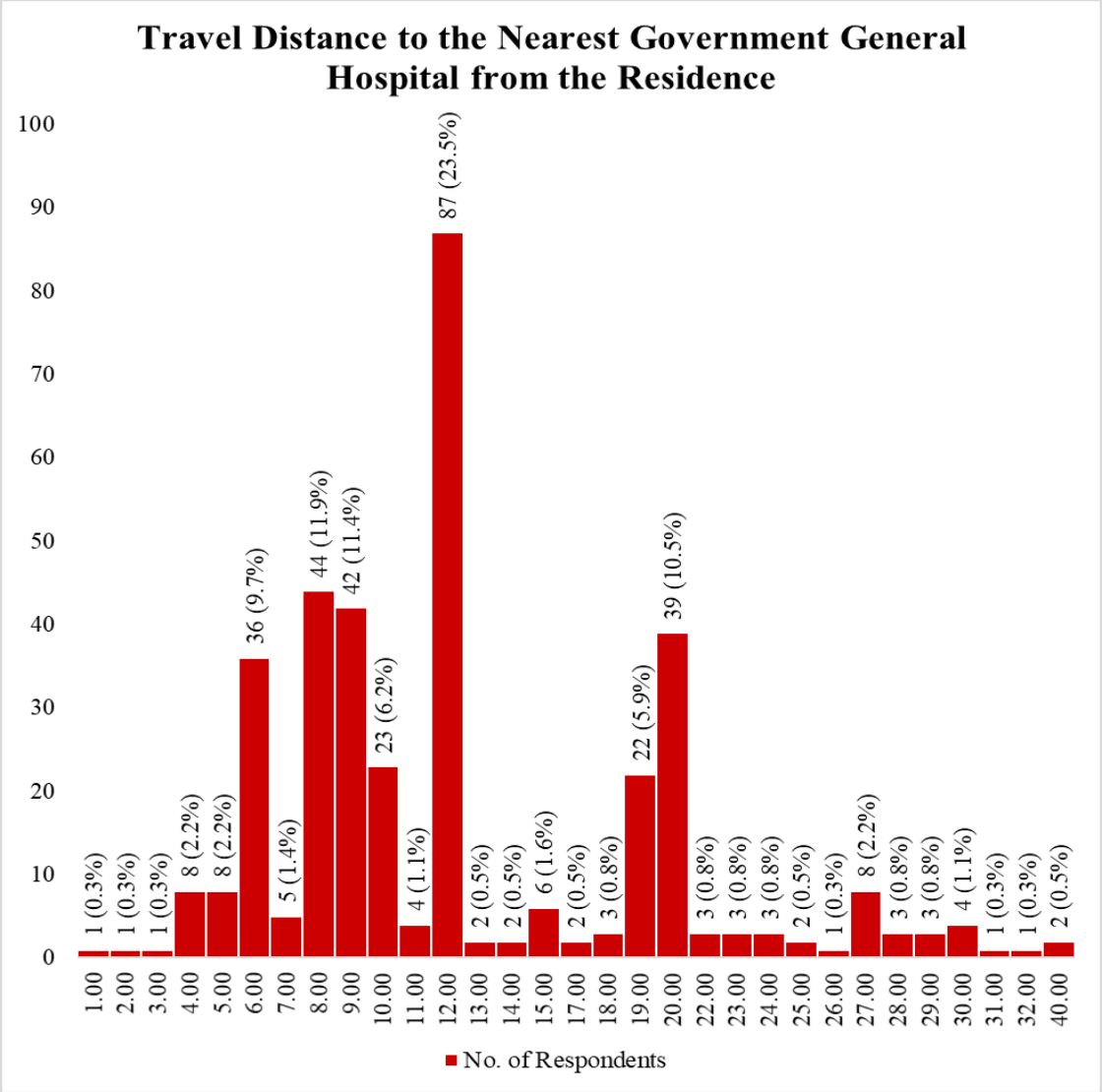
Source: Primary Data

7.2.29. Travel Distance to the Nearest Government General Hospital from the Residence

The travel distance to the nearest government general hospital from the residence of rural respondents is presented in Figure 7.49. Figure 7.49 shows that 40.8% (151) of the respondents' travel distance to the nearest government hospital is 10 - 19 km from their residence, followed by the respondents constituting 39.5% (146) travel 1 - 9 km distance to reach the nearest government hospital and 17.6% (65) of the sample experience a travel distance of 20 - 29 km to the nearest government hospital from their residence. Only, 2.2% (8) of the respondents travel a longer distance of 30 - 40 km to reach the nearest government hospital from their residence.

Figure: 7.49

Travel Distance to the Nearest Government General Hospital from the Residence



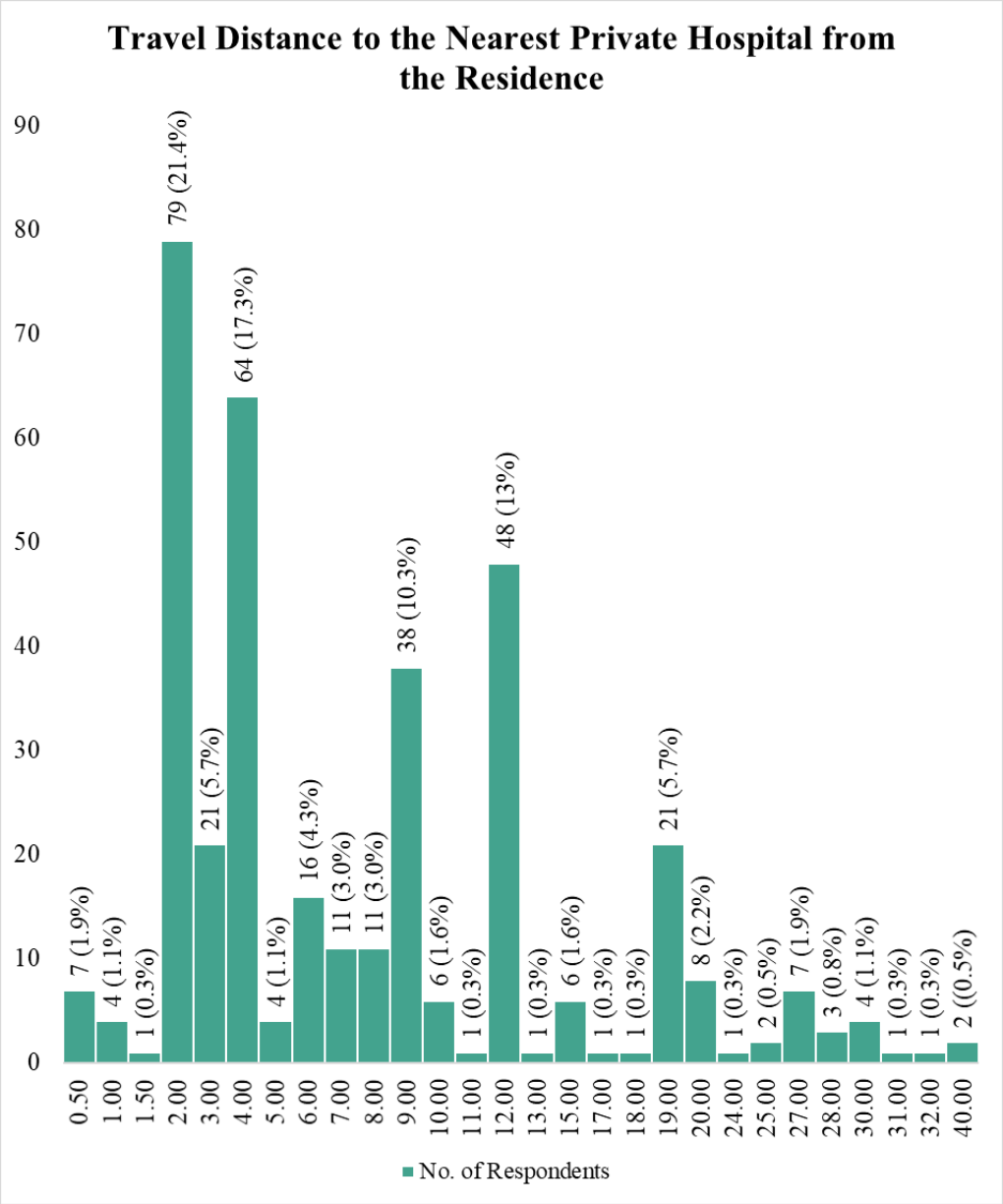
Source: Primary Data

7.2.30. Travel Distance to the Nearest Private Hospital from the Residence

The travel distance to the nearest private hospital from the residence of rural people is presented in Figure 7.50. Figure 7.50 clearly explained that the respondents who constitute 48.6% (180) of the sample travel 0.5 - 5 km of distance to reach the nearest private hospital, followed by 35.4% (131) of the respondents travel 6 - 12 km of distance to reach the nearest private hospital from their residence. It is also noted that 41 respondents representing 11.1% of the sample travels a distance of 13 - 25 km to reach the nearest private hospital and 4.9% (18) of the rural people travel a longer distance of 27 - 40 km from their residence to reach the nearest private hospital.

Figure: 7.50

Travel Distance to the Nearest Private Hospital from the Residence



Source: Primary Data

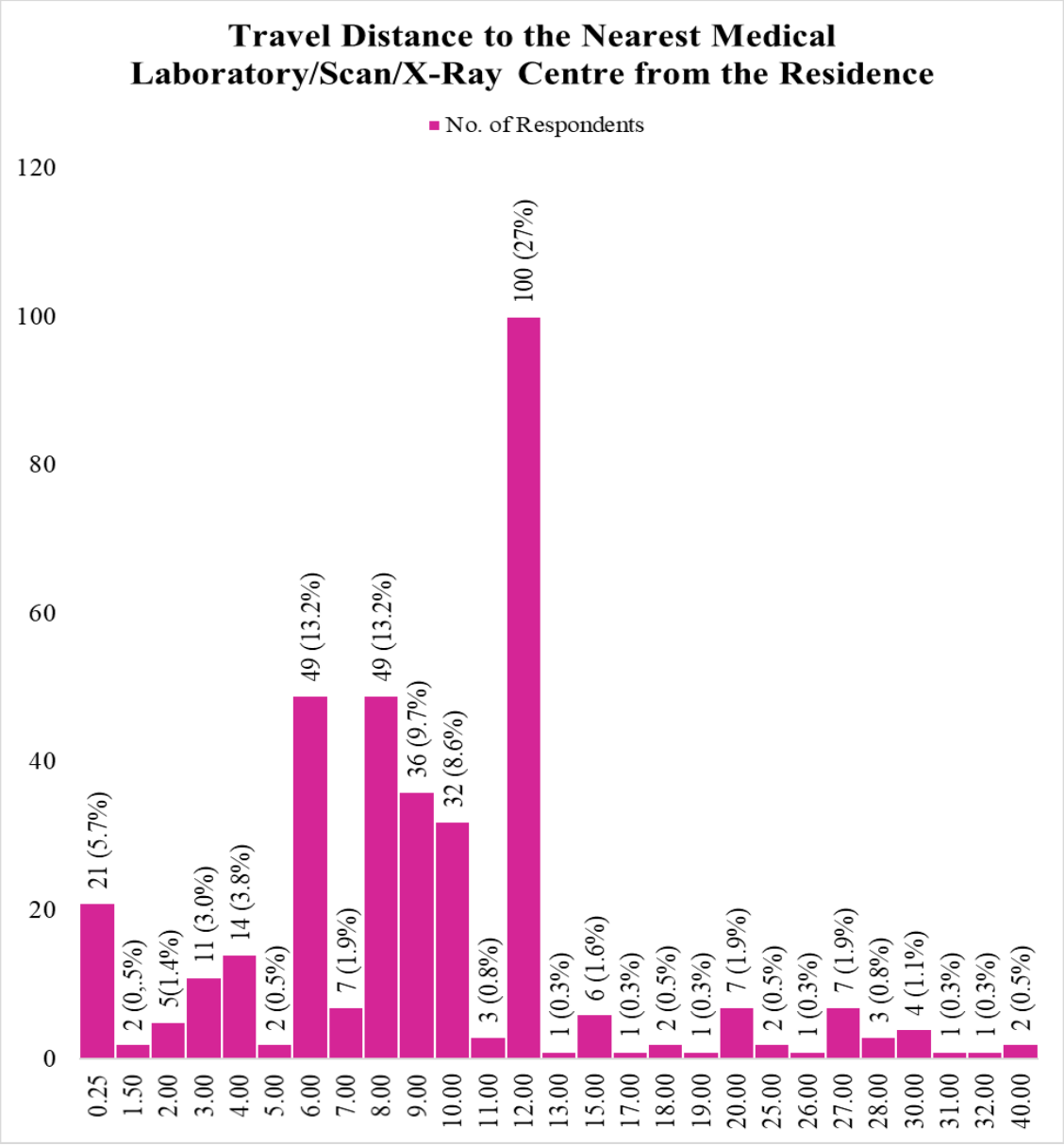
7.2.31. Travel Distance to the Nearest Medical Laboratory/Scan/X-Ray Centre from the Residence

The travel distance to the nearest medical laboratory/scan/x-ray centre from the residence of rural respondents is presented in figure 7.51. It is inferred from the above figure 7.51 that 46.5% (172) of the respondents' travel distance covered 9 - 13 km from their residence to the nearest medical laboratory or scan or x-ray centre whereas 43.2% (160) respondents travel 0.25 - 8 km to reach the nearest medical laboratory or scan or x-ray centre from their residence. The respondents who constitute 8.15% (30) of the sample covered 15 - 28 km of the

long distance to reach the nearest medical laboratory or scan or x-ray centre and only, 2.2% (8) of the respondents travel 30 - 40 km to reach the nearest medical laboratory or scan or x-ray centre from their residence.

Figure: 7.51

Travel Distance to the Nearest Medical Laboratory/Scan/X-Ray Centre from the Residence



Source: Primary Data

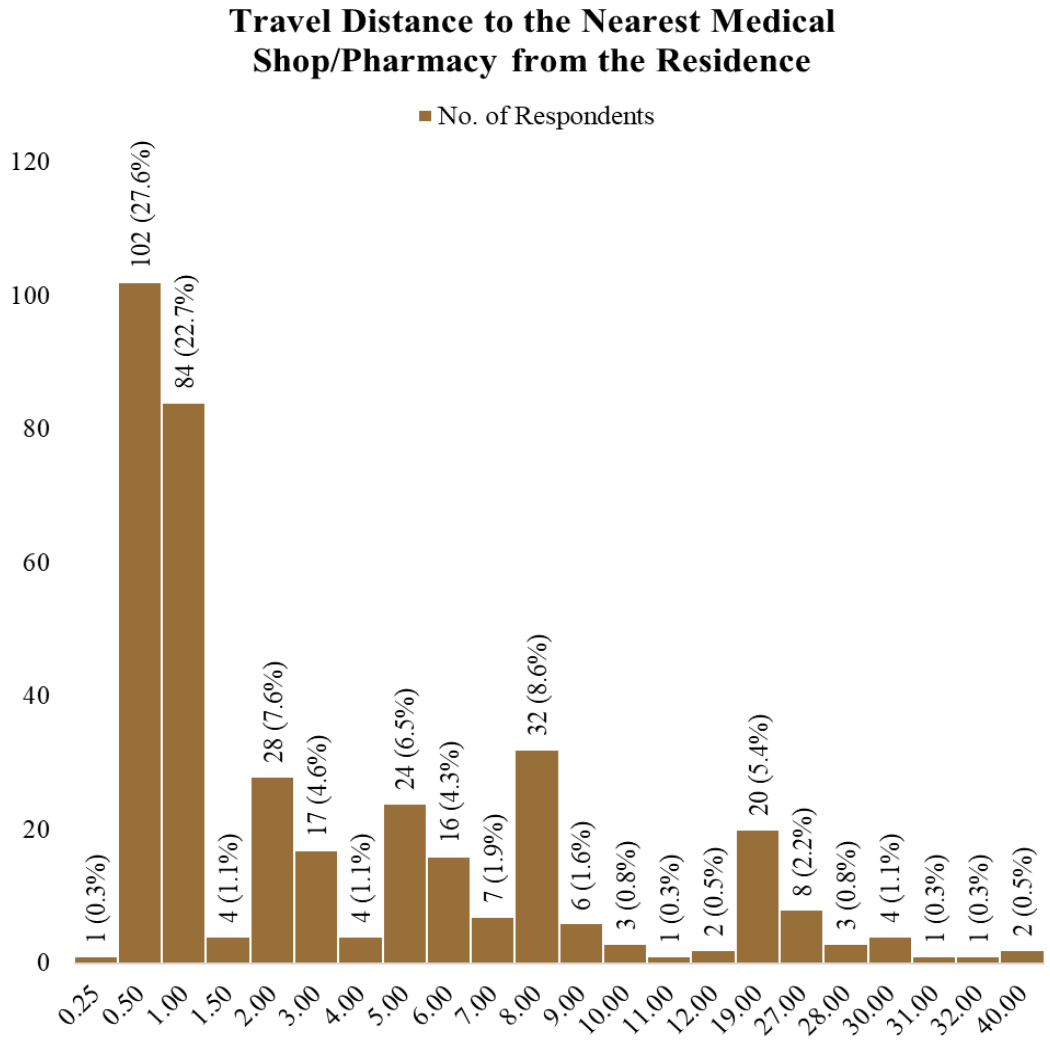
7.2.32. Travel Distance to the Nearest Medical Shop/Pharmacy from the Residence

The travel distance to the nearest medical shop/pharmacy from the residence of the rural people is presented in figure 7.52. From figure 7.52 it is revealed that the majority of the respondents 50.5% (187) covered the short distance of 0.25 - 1 km to reach the nearest medical shop or pharmacy from their residence, followed by 20.8% (77) of the respondents covered

1.50 - 5 km of travel distance to reach the nearest medical shop or pharmacy and the 64 respondents representing 17.3% of the sample travel a distance of 6 -10 km to the nearest medical shop or pharmacy from their residence. It is also found that 9.2% (34) of the sample travel a longer distance of 11 - 28km to reach the nearest medical shop and 2.2% (8) of the respondents travel 30 to 40 km to reach the nearest medical shop or pharmacy from their residence.

Figure: 7.52

Travel Distance to the Nearest Medical Shop/Pharmacy from the Residence



Source: Primary Data

7.3. Perception of Rural People on the Challenges in Using 108 Emergency Ambulance Services

The perception and the level of agreement of rural people towards the various challenges in using 108 emergency ambulance services viz. Awareness, Medical Service, Behaviour, Utility, Location, Access, Network, Convenience and Emergency are analysed

through descriptive statistics and a one-sample t-test with a test value of 3. The results of the statistical analysis are presented in Table 7.1.

Table: 7.1

Descriptive Statistics and One-Sample t-test on the Challenges of Rural People in Using 108 Emergency Ambulance Services

Descriptive Statistics & One-Sample t-test						
Challenges of Rural People	**N**	**Mean**	**S.D.**	**t-value**	**Sig.**	**Rank**
Awareness	370	1.9901	1.03284	-18.808	0.000	6
Medical Service	370	3.0694	1.00540	1.327	0.185	1
Behaviour	370	1.5523	0.44357	-62.782	0.000	9
Utility	370	2.0405	0.77205	-23.905	0.000	5
Location	370	2.4369	1.30817	-8.279	0.000	4
Access	370	2.4676	1.20460	-8.502	0.000	3
Network	370	1.8279	0.94860	-23.767	0.000	8
Convenience	370	1.9333	1.04422	-19.649	0.000	7
Emergency	370	2.7414	1.11684	-4.453	0.000	2

Highlighted Sig. value is <0.05 at 5% Level of Significance
Source: Computed Data

From table 7.1, it is inferred that all the factors contributing to the challenges of rural people in using 108 emergency ambulance services namely Awareness (mean=1.9901, t=-18.808, p=0.000), Behaviour (mean=1.5523, t=-62.782, p=0.000), Utility (mean=2.0405, t=-23.905, p=0.000), Location (mean=2.4369, t=-8.279, p=0.000), Access (mean=2.4676, t=-8.502, p=0.000), Network (mean=1.8279, t=-23.767, p=0.000), Convenience (mean=1.9333, t=-19.649, p=0.000) and Emergency (mean=2.7414, t=-4.453, p=0.000) are statistically significant at 5% level excluding Medical Service. Therefore, it can be concluded that there is a strong significant difference that exists among the perception of rural people towards the challenges in using 108 emergency ambulance services. The mean value of the factors insists that the rural people experience limited problems in utilising 108 emergency ambulance services. The mean values of the majority of the factors are less than 3 which signifies moderate agreement towards challenges. The challenges are ranked based on their mean values, and it is found that Medical Service, Emergency, Access and Location are ranked as the top 4 major challenges with a moderate level of agreement.

The output of the analysis evidenced that the limited medical services at 108 ambulances, service rendered by the medical attendants not being equivalent to doctors and lack of service for non-medical emergencies constitute as challenges pertaining to the medical service factor. The delayed response of 108 ambulances during a medical emergency,

dependence on indigenous medical treatments during a medical emergency and lack of knowledge in differentiating emergency medical conditions from non-emergency conditions constitute as challenges pertaining to the Emergency factor. Lack of access to 108 ambulances and easier access to private ambulances constitute as challenges pertaining to the Access factor. Subsequently, the limited availability of 108 ambulances in rural areas, poor road conditions and time-consuming experience to reach 108 ambulances constitute to as challenges pertaining to the Location factor. Hence, addressing the medical service, emergency, access and location-related challenges may facilitate effective utilisation of 108 emergency ambulance services by rural people during medical emergencies.

7.4. Perception of Rural People on their Needs in 108 Emergency Ambulance Services

The perception and the level of agreement of rural people towards the various needs in 108 emergency ambulance services viz. Care, Consultation, Commitment, Coverage and Control are analysed through descriptive statistics and a one-sample t-test with a test value of 3. The results of the statistical analysis are presented in Table 7.2.

Table: 7.2

Descriptive Statistics and One-Sample t-test on the Needs of Rural People in 108 Emergency Ambulance Services

Descriptive Statistics & One-Sample t-test						
Needs of Rural People	**N**	**Mean**	**S.D.**	**t-value**	**Sig.**	**Rank**
Care	370	4.6450	0.15564	203.314	0.000	1
Consultation	370	4.5252	0.24317	120.648	0.000	3
Commitment	370	4.4829	0.24264	117.555	0.000	5
Coverage	370	4.5180	0.24505	119.160	0.000	4
Control	370	4.5721	0.22969	131.655	0.000	2

Highlighted Sig. value is <0.05 at 5% Level of Significance
Source: Computed Data

Table 7.2 clearly explains that the factors contributing to the needs of rural people in 108 emergency ambulance services namely Care (mean=4.645, t=203.314, p=0.000), Consultation (mean=4.5252, t=120.648, p=0.000), Commitment (mean=4.4829, t=117.555, p=0.000), Coverage (mean=4.518, t=119.16, p=0.000) and Control (mean=4.5721, t=131.655, p=0.000) are statistically significant at 5% level. Therefore, it can be concluded that there is a strong significant difference that exists among the perception of rural people towards the needs in 108 emergency ambulance services. The mean value of the needs expressed that rural people have a strong agreement towards their needs in 108 emergency ambulance services as the mean values are greater than 4 which signifies a strong level of agreement. The factors contributing

to the needs of rural people are ranked based on their mean values and it is found that Care, Control and Consultation are ranked as the top three needs in 108 emergency ambulance services.

Handling of all types of medical emergencies by 108 ambulances, Medical attendants' care for patients should be on par with the doctors and support from the 108 ambulance drivers and medical attendants during medical emergencies constitute as needs pertaining to the Care factor. Ensuring better location tracking technology to serve rural people during medical emergencies by 108 ambulances, rendering quality medical service through a well maintained 108 ambulances and incorporation of proper feedback and grievance redressal system to provide better service constitute as needs pertaining to the Control factor. Consequently, provision of telemedical consultation to the patient while waiting for 108 ambulances, arrangement of a live video consultation with doctors in the 108 ambulances and extension of counselling services to the patient and their attenders to manage the trauma during medical emergency constitute as needs pertaining to the Consultation factor. Hence, managing the care, control and consultation needs of rural people may help them to avail 108 emergency ambulance services effectively during medical emergencies.

7.5. Influence of Socio-Demographic Profile on the Challenges of Rural People in Using 108 Emergency Ambulance Services

The influence of socio-demographic profile variables viz. Age, Gender, Educational Qualification, Marital Status, No. of Children, Family Type, No. of Family Members, Occupation and Monthly Income on the challenges of rural people in using 108 emergency ambulance services are analysed using one-way analysis of variance (ANOVA). The results of the ANOVA test are presented in table 7.3.

The perception of rural people on challenges in using 108 emergency ambulance services significantly differs with regard to their Age, Gender, Educational Qualification, Marital Status, Occupation and Monthly Income at a 5% level. Table 7.3 revealed that the perception on Medical Service ($F=3.999$, $p=0.003$), Utility ($F=2.556$, $p=0.039$), Location ($F=4.014$, $p=0.003$) and Emergency ($F=2.8$, $p=0.026$) is influenced by age of the respondents, gender of the rural people influences Access ($F=4.139$, $p=0.043$) and Emergency ($F=10.453$, $p=0.001$), marital status influences Medical Service ($F=2.867$, $p=0.015$) whereas educational qualification influences Emergency ($F=5.533$, $p=0.019$).

Subsequently, the perception on Awareness ($F=7.545$, $p=0.000$), Medical Service ($F=4.52$, $p=0.001$), Utility ($F=3.935$, $p=0.002$), Location ($F=5.467$, $p=0.000$), Access ($F=8.998$, $p=0.000$), Network ($F=6.963$, $p=0.000$), Convenience ($F=5.615$, $p=0.000$) and

Emergency (F=5.148, p=0.000) is influenced by the occupation of the rural people. Also, the monthly income of rural respondents influences their perception on Awareness (F=6.095, p=0.000), Medical Service (F=4.707, p=0.003), Utility (F=2.901, p=0.035), Access (F=3.306, p=0.02), Network (F=3.681, p=0.012) and Convenience (F=4.798, p=0.003). Hence, it can be concluded that there is a significant difference between the socio-demographic variables namely Age, Gender, Educational Qualification, Marital Status, Occupation and Monthly Income and the challenges of rural people in using 108 Emergency Ambulance Services.

7.6. Influence of Health Profile on the Challenges of Rural People in Using 108 Emergency Ambulance Services

The influence of health profile variables viz. Vaccination, Body Mass Index (BMI), General Medical Condition, Specific Medical Condition, First Point of Contact During Medical Emergency, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits to a Doctor on the challenges of rural people in using 108 emergency ambulance services are analysed using one-way analysis of variance (ANOVA). The results of the ANOVA test are presented in table 7.4.

The perception of rural people on their needs in 108 emergency ambulance services significantly differs with regard to Vaccination, Body Mass Index (BMI), General Medical Condition, Specific Medical Condition, First Point of Contact During Medical Emergency, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits at a 5% level. Table 7.4 demonstrated that Awareness (F=10.584, p=0.001), Medical Service (F=7.391, p=0.007), Access (F=4.523, p=0.034), Network (F=19.921, p=0.000) and Convenience (F=15.289, p=0.000) was influenced by the vaccination status of rural people. Awareness (F=3.602, p=0.014), Medical Service (F=2.925, p=0.034), Location (F=4.737, p=0.003), Access (F=4.509, p=0.004), Network (F=3.079, p=0.028) and Convenience (F=7.998, p=0.000) was influenced by the Body Mass Index (BMI) of rural respondents.

Consequently, the general medical condition of the rural people influences the perception on Awareness (F=5.374, p=0.021) and Medical Service (F=4.868, p=0.028) whereas the specific medical condition of the respondents influences their perception on Behaviour (F=5.267, p=0.022). The perception on Location (F=4.989, p=0.007) and Access (F=3.98, p=0.019) differs based on the people's first point of contact during medical emergencies and mode of transport during a medical emergency by the rural respondents influence their perception on Awareness (F=5.697, p=0.000), Access (F=3.702, p=0.006), Network (F=7.874, p=0.000) and Convenience (F=5.077, p=0.001).

Table: 7.3

ANOVA on the Socio-Demographic Profile and the Challenges of Rural People in Using 108 Emergency Ambulance Services

Challenges of Rural People	Age		Gender		Educational Qualification		Marital Status		No. of Children		Family Type		No. of Family Members		Occupation		Monthly Income	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Awareness	2.068	0.084	1.018	0.314	0.340	0.889	0.010	0.920	0.952	0.434	2.314	0.129	0.766	0.514	7.545	0.000	6.095	0.000
Medical Service	3.999	0.003	3.517	0.062	2.867	0.015	0.399	0.528	0.523	0.719	0.574	0.449	0.285	0.836	4.520	0.001	4.707	0.003
Behaviour	2.303	0.058	0.709	0.400	0.812	0.542	0.237	0.627	0.620	0.648	0.201	0.654	0.566	0.638	0.543	0.744	1.829	0.141
Utility	2.556	0.039	2.376	0.124	0.793	0.555	0.068	0.794	1.059	0.377	1.260	0.262	0.481	0.696	3.935	0.002	2.901	0.035
Location	4.014	0.003	2.749	0.098	0.035	0.999	2.437	0.119	1.530	0.193	0.185	0.667	0.283	0.837	5.467	0.000	1.437	0.232
Access	2.228	0.065	4.139	0.043	1.656	0.144	1.748	0.187	0.943	0.439	0.957	0.329	0.536	0.658	8.998	0.000	3.306	0.020
Network	1.430	0.223	2.134	0.145	0.910	0.474	0.295	0.587	1.095	0.359	3.742	0.054	2.570	0.054	6.963	0.000	3.681	0.012
Convenience	2.282	0.060	1.862	0.173	0.274	0.927	0.018	0.893	1.881	0.113	2.880	0.091	0.241	0.868	5.615	0.000	4.798	0.003
Emergency	2.800	0.026	10.453	0.001	0.509	0.770	5.533	0.019	2.232	0.065	0.029	0.865	0.157	0.925	5.148	0.000	0.316	0.814

Highlighted Sig. value is <0.05 at 5% Level of Significance
Source: Computed Data

Table: 7.4

ANOVA on the Health Profile and the Needs of Rural People in 108 Emergency Ambulance Services

Challenges of Rural People in Using 108 Emergency Ambulance Services	Vaccination		BMI		General Medical Condition		Specific Medical Condition		First Point of Contact During Medical Emergency		Mode of Transport During Medical Emergency		Usage of 108 Emergency Ambulance		Preference of Hospital		Frequency of Visits to a Doctor	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Awareness	10.584	0.001	3.602	0.014	5.374	0.021	3.077	0.080	0.478	0.620	5.697	0.000	13.949	0.000	5.650	0.004	3.745	0.000
Medical Service	7.391	0.007	2.925	0.034	4.868	0.028	1.467	0.227	0.279	0.757	0.959	0.430	14.287	0.000	1.463	0.233	2.769	0.001
Behaviour	2.459	0.118	0.245	0.865	0.424	0.515	5.267	0.022	0.260	0.772	1.146	0.335	1.031	0.311	2.304	0.101	1.288	0.223
Utility	0.162	0.687	1.053	0.369	0.078	0.780	0.691	0.406	0.172	0.842	1.618	0.169	1.511	0.220	13.677	0.000	3.925	0.000
Location	3.644	0.057	4.737	0.003	1.057	0.305	0.002	0.969	4.989	0.007	1.884	0.113	10.447	0.001	4.413	0.013	4.006	0.000
Access	4.523	0.034	4.509	0.004	0.992	0.320	0.306	0.581	3.980	0.019	3.702	0.006	11.577	0.001	0.647	0.524	5.112	0.000
Network	19.921	0.000	3.079	0.028	0.035	0.851	2.405	0.122	2.399	0.092	7.874	0.000	18.522	0.000	3.515	0.031	3.136	0.000
Convenience	15.289	0.000	7.998	0.000	0.088	0.767	1.509	0.220	1.398	0.248	5.077	0.001	30.533	0.000	2.778	0.063	4.585	0.000
Emergency	3.261	0.072	1.648	0.178	1.295	0.256	0.797	0.373	1.931	0.146	1.736	0.141	12.843	0.000	0.173	0.841	5.033	0.000

Highlighted Sig. value is <0.05 at 5% Level of Significance
Source: Computed Data

The perception of rural people on the challenges in using 108 emergency ambulances viz. Awareness (F=13.949, p=0.000), Medical Service (F=14.287, p=0.000), Location (F=10.447, p=0.001), Access (F=11.577, p=0.001), Network (F=18.522, p=0.000), Convenience (F=30.533, p=0.000) and Emergency (F=12.843, p=0.000) differs based on the usage of 108 emergency ambulance. Consequently, the Awareness (F=5.65, p=0.004), Utility (F=13.677, p=0.000), Location (F=4.413, p=0.013) and Network (F=3.515, p=0.031) were influenced by their preference of hospital during medical emergencies. Furthermore, the perception on Awareness (F=3.745, p=0.000), Medical Service (F=2.769, p=0.001), Utility (F=3.925, p=0.000), Location (F=4.006, p=0.000), Access (F=5.112, p=0.000), Network (F=3.136, p=0.000), Convenience (F=4.585, p=0.000) and Emergency (F=5.033, p=0.000) differs based on the frequency of their visits to a doctor. Hence, it can be concluded that there is a significant difference between health profile variables namely Vaccination, Body Mass Index (BMI), General Medical Condition, Specific Medical Condition, First Point of Contact During Medical Emergency, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits to a Doctor and the challenges of rural people in using 108 Emergency Ambulance Services.

7.7. Influence of Socio-Demographic Profile on the Needs of Rural People in 108 Emergency Ambulance Services

The influence of socio-demographic profile variables viz. Age, Gender, Educational Qualification, Marital Status, No. of Children, Family Type, No. of Family Members, Occupation and Monthly Income on the needs of rural people in 108 emergency ambulance services are analysed using one-way analysis of variance (ANOVA). The results of the ANOVA test are presented in table 7.4.

The perception of rural people on their needs in 108 emergency ambulance services significantly differs with regard to age and occupation at a 5% level. Table 7.5 revealed that the perception on Commitment (F=3.985, p=0.004) was influenced by age of the respondents whereas the occupation of the respondents influences Consultation (F=2.466, p=0.032), Coverage (F=2.337, p=0.042) and Control (F=2.351, p=0.04). Hence, it can be concluded that there is a significant difference between the socio-demographic variables namely age and occupation and the needs of rural people in using 108 Emergency Ambulance Services. The results further infer that the perception of rural people towards their needs in 108 emergency ambulance services do not differ for majority of the socio-demographic profile variables which signifies that all the rural people have strong needs which are common in 108 emergency ambulance services.

Table: 7.5

ANOVA on the Socio-Demographic Profile and the Needs of Rural People in 108 Emergency Ambulance Services

Needs of Rural People in 108 Emergency Ambulance Services	Age		Gender		Educational Qualification		Marital Status		No. of Children		Family Type		No. of Family Members		Occupation		Monthly Income	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Care	0.737	0.567	0.134	0.714	0.830	0.529	0.763	0.383	0.554	0.697	0.607	0.436	1.259	0.288	1.306	0.261	1.234	0.297
Consultation	0.858	0.489	0.642	0.423	1.027	0.401	0.011	0.917	0.336	0.854	0.995	0.319	0.018	0.997	2.466	0.032	0.780	0.506
Commitment	3.985	0.004	0.004	0.952	0.688	0.633	1.887	0.170	0.615	0.652	0.103	0.748	0.401	0.753	1.004	0.415	2.100	0.100
Coverage	0.456	0.768	3.520	0.061	0.760	0.579	1.221	0.270	1.231	0.297	0.281	0.597	1.002	0.392	2.337	0.042	0.646	0.586
Control	1.747	0.139	0.005	0.944	0.166	0.975	0.044	0.834	0.396	0.812	1.747	0.187	0.482	0.695	2.351	0.040	1.122	0.340

Highlighted Sig. value is <0.05 at 5% Level of Significance
Source: Computed Data

Table: 7.6

ANOVA on the Health Profile and the Needs of Rural People in 108 Emergency Ambulance Services

Needs of Rural People in 108 Emergency Ambulance Services	Vaccination		BMI		General Medical Condition		Specific Medical Condition		First Point of Contact During Medical Emergency		Mode of Transport During Medical Emergency		Usage of 108 Emergency Ambulance		Preference of Hospital		Frequency of Visits to a Doctor	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	Sig.			F	Sig.
Care	0.289	0.591	0.101	0.960	0.236	0.627	0.010	0.922	0.015	0.985	2.979	0.019	0.679	0.410	1.872	0.155	0.910	0.537
Consultation	3.827	0.051	1.815	0.144	1.357	0.245	0.948	0.331	0.447	0.640	0.737	0.567	7.173	0.008	0.263	0.769	0.596	0.846
Commitment	2.325	0.128	3.162	0.025	2.611	0.107	0.290	0.591	1.091	0.337	0.366	0.833	0.582	0.446	0.699	0.498	1.621	0.084
Coverage	0.033	0.856	2.365	0.071	8.649	0.003	0.233	0.630	0.666	0.514	0.624	0.646	4.883	0.028	1.335	0.265	1.527	0.112
Control	2.618	0.107	2.404	0.067	1.340	0.248	0.379	0.539	1.696	0.185	2.783	0.027	4.276	0.039	3.935	0.020	2.265	0.009

Highlighted Sig. value is <0.05 at 5% Level of Significance
Source: Computed Data

7.8. Influence of Health Profile on the Needs of Rural People in 108 Emergency Ambulance Services

The influence of health profile variables viz. Vaccination, Body Mass Index (BMI), General Medical Condition, Specific Medical Condition, First Point of Contact During Medical Emergency, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits to a Doctor on the needs of rural people in 108 emergency ambulance services are analysed using one-way analysis of variance (ANOVA). The results of the ANOVA test are presented in table 7.5.

The perception of rural people on their needs in 108 emergency ambulance services significantly differs with regard to Body Mass Index (BMI), General Medical Condition, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits to a Doctor at a 5% level. The body mass index (BMI) of the rural people influences their perception on Commitment ($F=3.162$, $p=0.025$) whereas the general medical condition of the respondents influences Coverage ($F=8.649$, $p=0.003$). Subsequently, the perception of people on Care ($F=2.979$, $p=0.019$) and Control ($F=2.783$, $p=0.027$) differs with the mode of transport used by the respondents during a medical emergency. The usage of 108 emergency ambulance influences Consultation ($F=7.173$, $p=0.008$), Coverage ($F=4.883$, $p=0.028$) and Control ($F=4.276$, $p=0.039$). Consequently, preference of hospital influences Control ($F=3.935$, $p=0.02$) and frequency of visits to a doctor by the respondents influence Control ($F=2.265$, $p=0.009$).

Hence, it can be concluded that there is a significant difference between the health profile variables namely Vaccination, Body Mass Index (BMI), General Medical Condition, Specific Medical Condition, First Point of Contact During Medical Emergency, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits to a Doctor and the needs of rural people in using 108 Emergency Ambulance Services. The results further infer that the perception of rural people towards their needs in 108 emergency ambulance services do not differ for majority of the health profile variables which signifies that all the rural people have strong needs which are common in 108 emergency ambulance services.

7.9. Relationship amongst the Challenges and Needs of Rural People in Using 108 Emergency Ambulance Services

The relationship amongst the challenges and needs of rural people in using 108 emergency ambulance services are analysed using a bivariate correlation matrix and the results are presented in Table 7.7.

Table: 7.7

Bi-Variate Correlation Matrix on the Challenges and Needs of Rural People in Using 108 Emergency Ambulance Services

Correlations															
Challenges and Needs of Rural People		**C-1**	**C-2**	**C-3**	**C-4**	**C-5**	**C-6**	**C-7**	**C-8**	**C-9**	**N-1**	**N-2**	**N-3**	**N-4**	**N-5**
C-1	Awareness	1													
C-2	Medical Service	.475**	1												
C-3	Behaviour	.176**	.222**	1											
C-4	Utility	-0.097	.296**	.195**	1										
C-5	Location	.476**	.151**	0.078	-0.074	1									
C-6	Access	.469**	.398**	.149**	0.069	.674**	1								
C-7	Network	.641**	.374**	.238**	-0.039	.372**	.503**	1							
C-8	Convenience	.621**	.431**	.147**	0.031	.432**	.554**	.671**	1						
C-9	Emergency	.467**	.162**	.169**	-0.046	.507**	.411**	.426**	.497**	1					
N-1	Care	-0.056	-0.073	0.043	0.022	0.020	0.072	0.001	0.047	.105*	1				
N-2	Consultation	-0.085	0.009	-0.058	0.024	0.036	0.081	-0.080	0.001	0.018	-.145**	1			
N-3	Commitment	0.001	0.009	0.056	0.022	.162**	.130*	0.011	0.024	.116*	.182**	.150**	1		
N-4	Coverage	.145**	.178**	0.079	0.054	.196**	.163**	0.027	.124*	.233**	-0.013	.232**	.157**	1	
N-5	Control	0.043	0.042	0.083	0.001	.171**	.111*	0.012	0.090	.161**	.120*	.240**	.287**	.268**	1

*Highlighted **. Correlation is significant at the 0.01 level (2-tailed).*
*Highlighted *. Correlation is significant at the 0.05 level (2-tailed).*
Source: Computed Data

Table 7.7 reveal that there is a strong interrelationship that exists among the factors contributing to the challenges of rural people in using 108 emergency ambulance services viz. Awareness, Medical Service, Behaviour, Utility, Location, Access, Network, Convenience and Emergency and statistically significant at 1% and 5% level as the p-values are less than 0.001 and 0.05. It is further inferred that there is a strong interrelationship that exists among the factors contributing to the needs of rural people in 108 emergency ambulance services viz. Care, Consultation, Commitment, Coverage and Control and statistically significant at 1% and 5% level as the p-values are less than 0.001 and 0.05. Hence, it can be concluded that there is a strong interrelationship that exist among the factors contributing to the challenges and needs of rural people in using 108 emergency ambulance services separately.

However, the bivariate correlation matrix also exhibits the relationship between the challenges and needs of rural people. Table 7.7 depicts that the challenges related to the awareness factor correlated with Coverage (r=0.145, p=<0.01), medical service factor correlated with Coverage (r=0.178, p=<0.01), location factor correlated with Commitment (r=0.162, p=<0.01), Coverage (r=0.196, p=<0.01) and Control (r=0.171, p=<0.01), access factor correlated with Commitment (r=0.130, p=<0.05), Coverage (r=0.163, p=<0.01) and Control (r=0.111, p=<0.05), convenience factor correlated with Coverage (r=0.124, p=<0.05) and emergency factor correlated with Care (r=0.105, p=<0.05), Commitment (r=0.116, p=<0.05), Coverage (r=0.233, p=<0.01) and Control (r=0.161, p=<0.01). Hence, it can be concluded that there is a significant relationship between the challenges and needs of rural people with regard to awareness, medical service, location, access, convenience and emergency which correlate with the selected factors contributing to the needs of rural people in 108 emergency ambulance services.

7.10. Influence of the Challenges of Rural People in Using 108 Emergency Ambulance Services on their Needs (5 C's Model Approach)

The influence of the challenges of rural people in using 108 emergency ambulance services on their needs is assessed using multiple linear regression analysis (MLRA). The factors contributing to the challenges include awareness, medical service, behaviour, utility, location, access, network, convenience and emergency. The factors contributing to the needs of rural people include care, consultation, commitment, coverage and control (5 C's model approach). The tolerance values (0.405 - 0.881) and variance inflation factor (VIF) values (1.135 - 2.472) assure that the variables are freed from multicollinearity issues. The results of multiple linear regression analysis between the challenges and needs of rural people in using 108 emergency ambulance services are presented in Table 7.8.

Table: 7.8

Multiple Linear Regression Analysis on the Challenges and Needs of Rural People in Using 108 Emergency Ambulance Services

Challenges and Needs of Rural People	Care		Consultation		Commitment		Coverage		Control	
	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.	Beta	Sig.
Awareness	-0.114	0.157	-0.146	0.072	-0.108	0.183	0.030	0.703	-0.092	0.254
Medical Service	-0.123	0.070	0.048	0.486	0.014	0.834	0.172	0.009	0.050	0.459
Behaviour	0.046	0.408	-0.051	0.357	0.047	0.390	0.036	0.502	0.080	0.143
Utility	0.023	0.692	-0.010	0.867	0.008	0.888	0.008	0.880	-0.027	0.637
Location	-0.102	0.193	-0.007	0.931	0.143	0.069	0.113	0.136	0.159	0.042
Access	0.154	0.057	0.156	0.056	0.078	0.336	0.014	0.863	-0.013	0.875
Network	-0.043	0.584	-0.127	0.105	-0.033	0.671	-0.204	0.007	-0.123	0.114
Convenience	0.083	0.301	0.054	0.500	-0.051	0.526	0.002	0.976	0.076	0.342
Emergency	0.137	0.038	0.053	0.419	0.092	0.163	0.208	0.001	0.121	0.065
R Square	0.045		0.198		0.212		0.325		0.235	
Adjusted R Square	0.021		0.039		0.045		0.106		0.055	
F	1.885		1.628		1.890		4.739		2.344	
Sig.	0.053		0.106		0.052		0.000		0.014	
n	370		370		370		370		370	
Tolerance	0.405 - 0.881		0.405 - 0.881		0.405 - 0.881		0.405 - 0.881		0.405 - 0.881	
VIF	1.135 - 2.472		1.135 - 2.472		1.135 - 2.472		1.135 - 2.472		1.135 - 2.472	

Highlighted Sig. value is <0.05 at 5% Level of Significance
Source: Computed Data

Table 7.8 reveal that the challenges of rural people in using 108 emergency ambulance services significantly influences the needs of rural people in regard to Coverage (R Square=0.325, F=4.739, p=0.000) and Control (R Square=0.235, F=2.344, p=0.014) at a 5% level. It is further inferred that the Medical Service (Beta=0.172, p=0.009), Network (Beta=-0.204, p=0.007) and Emergency (Beta==0.208, p=0.001) influences Coverage factor whereas Location (Beta=0.159, p=0.042) influences Control factor pertaining to the needs of rural people in 108 emergency ambulance services. Therefore, it can be concluded that there is a significant influence between the challenges and needs of rural people in using 108 emergency ambulance services with regards to coverage and control factors.

7.11. Derived Model on Effective Utilisation of 108 Emergency Ambulance Services by Rural People (5 C's Model Approach)

The proposed model on Effective Utilisation of 108 Emergency Ambulance Services by Rural People (5 C's Model Approach) was developed based on two constructs namely the challenges and needs of rural people in using 108 emergency ambulance services. The construct 'challenges' include awareness, medical service, behaviour, utility, location, access, network, convenience and emergency. The construct 'needs' include care, consultation, commitment, coverage and control (5 C's model approach). The model developed with the significant constructs were derived using the structural equation modelling (SEM) and the results are presented in figure 7.53.

Table: 7.9

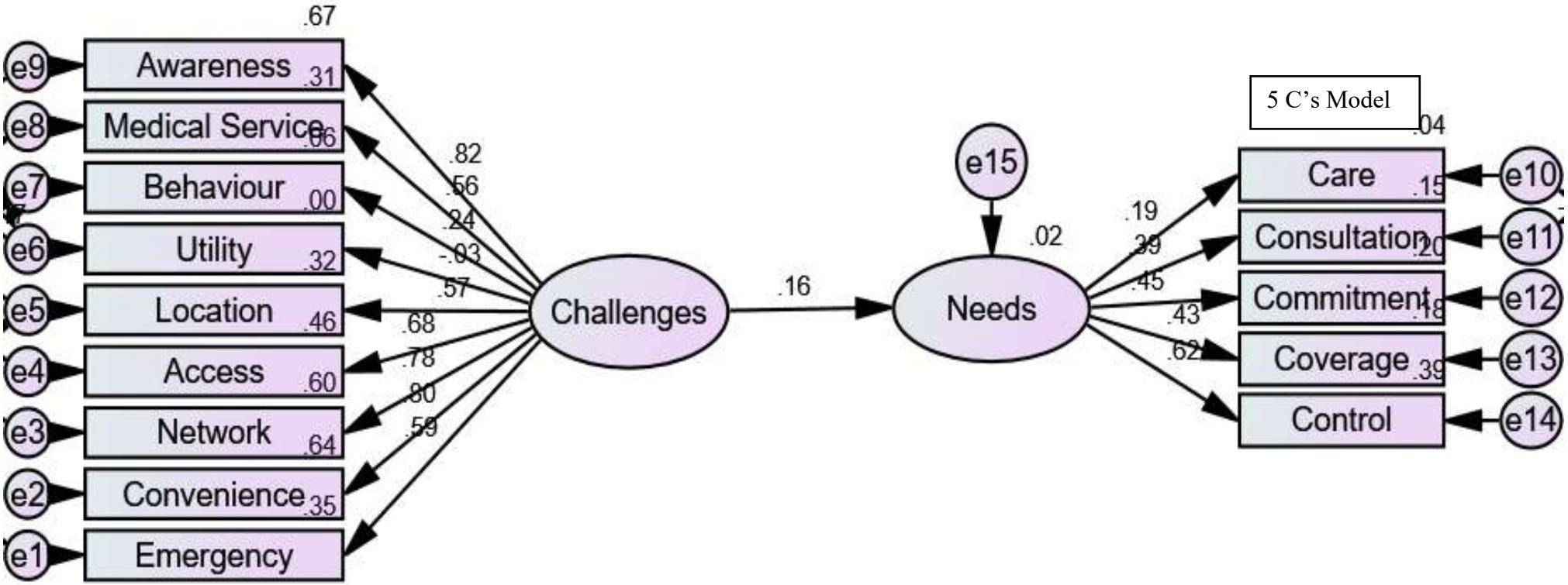
Model Fit Summary of Derived Model on Effective Utilisation of 108 Emergency Ambulance Services by Rural People

Model Fit Indices	Value
Chi-Square	160.593
P - value	0.000
Chi-Square/DF	2.397
Goodness of Fit Index (GFI)	0.942
Normed Fit Index (NFI)	0.900
Incremental Fit Index (IFI)	0.936
Comparative Fit Index (CFI)	0.935
Root Mean square Residuals (RMR)	0.022
Root Mean Square Error of Approximation (RMSEA)	0.062

Source: Computed Data

Figure: 7.53

Derived Model on Effective Utilisation of 108 Emergency Ambulance Services by Rural People (5 C's Model Approach)



Source: Computed Data

The results of the structural equation modelling reveals that the challenges of rural people in using 108 emergency ambulance services have a direct effect on their needs (5 C's model approach) to a certain extent. Table 7.9 depicts the model fit indices (chi-square= 160.593; P = 0.000; chi-square/DF = 2.397; GFI = 0.942; NFI = 0.900; IFI = 0.936; CFI = 0.935; RMR = 0.022; and RMSEA = 0.062) that evidence the good fit of the model, as all the values are within the threshold limit (Shi, Lee and Maydeu, 2019). Hence, it can be concluded that there is a significant intrinsic relationship that exists between the challenges and needs of the rural people pertaining to the effective utilisation of 108 emergency ambulance services in rural areas. It is further inferred that the rural people have limited challenges in using 108 emergency ambulance services with regard to selected factors. However, the needs of rural people in 108 emergency ambulance services are common among all the people in spite of limited challenges.

7.12. Testing of Hypotheses

The present study includes five null hypotheses based on the research objectives of the study. In order to test the proposed hypotheses, the researcher has used appropriate statistical tools and techniques and the results are presented as follows:

H_0 – There is no significant difference between the socio-demographic profile and the health profile of the respondents and the challenges of rural people in using 108 Emergency Ambulance Services.

The one-way analysis of variance analysis reveals that there is a significant difference between the socio-demographic variables namely Age, Gender, Educational Qualification, Marital Status, Occupation and Monthly Income and the challenges of rural people in using 108 Emergency Ambulance Services. The one-way analysis of variance analysis also reveals that there is a significant difference between the health profile variables namely Vaccination, Body Mass Index (BMI), General Medical Condition, Specific Medical Condition, First Point of Contact During Medical Emergency, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits to a Doctor and the challenges of rural people in using 108 Emergency Ambulance Services. Hence, the null hypothesis was rejected (Refer Table 7.3 & 7.4).

H_0 – There is no significant difference between the socio-demographic profile and the health profile of the respondents and the needs of rural people in 108 Emergency Ambulance Services.

The one-way analysis of variance analysis reveals that there is a significant difference between the socio-demographic variables namely age and occupation and the needs of rural

people in using 108 Emergency Ambulance Services. The one-way analysis of variance analysis also reveals that there is a significant difference between the health profile variables namely Vaccination, Body Mass Index (BMI), General Medical Condition, Specific Medical Condition, First Point of Contact During Medical Emergency, Mode of Transport During Medical Emergency, Usage of 108 Emergency Ambulance, Preference of Hospital and Frequency of Visits to a Doctor and the needs of rural people in using 108 Emergency Ambulance Services. Hence, the null hypothesis was rejected (Refer Table 7.5 & 7.6).

H_0 – There is no significant relationship amongst the challenges and needs of rural people in using 108 Emergency Ambulance Services.

The bivariate correlation matrix reveals that there is a significant relationship between the challenges and needs of rural people with regard to awareness, medical service, location, access, convenience and emergency which correlate with the selected factors contributing to the needs of rural people in 108 emergency ambulance services. The analysis further reveals that there is a strong interrelationship that exists among the factors contributing to the challenges and needs of rural people in using 108 emergency ambulance services. Hence, the null hypothesis was rejected (Refer Table 7.7).

H_0 – There is no significant influence of the challenges of rural people in using 108 Emergency Ambulance Services on their needs (5 C's Model Approach).

The multiple linear regression analysis reveals that there is a significant influence of challenges of rural people in using 108 emergency ambulance services on their needs in 108 emergency ambulance services concerning Coverage and Control factors. Hence, the null hypothesis was rejected (Refer Table 7.8).

H_0 – There is no intrinsic relationship between the challenges and needs of rural people in using 108 Emergency Ambulance Services.

The structural equation modelling reveals that there is a significant intrinsic relationship that exists between the challenges and needs of the rural people pertaining to the effective utilisation of 108 emergency ambulance services in rural areas.

CHAPTER - VIII

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

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The present study concerning challenges of rural people in the effective utilisation of 108 emergency ambulance services in Tamil Nadu was conceived with both primary and secondary data to achieve its research objectives. The data procured from rural people of selected rural sub-districts of Kancheepuram district and 108 ambulance pilots and emergency medical technicians are analysed with the help of suitable statistical tools and techniques. The results regarding the data analysis are consolidated and presented in this chapter. Subsequently, based on the research findings the researchers have provided operational recommendations to facilitate the effective utilisation of 108 emergency ambulance services by rural people in the state of Tamil Nadu. The summary of research findings, operational recommendations and conclusion provides an overall view of the current study and its outcomes.

8.1. Research Findings

The research findings related to socio-demographic profile and health profile of rural respondents, challenges and needs of rural people in using 108 emergency ambulance services, brief profile of pilots and emergency medical technicians, challenges and expectations of 108 emergency ambulance pilots and emergency medical technicians are consolidated and presented as follows.

8.1.1. Socio-Demographic Profile of Rural People

The socio-demographic profile of rural people is represented as: 26.8% of the respondents are in the age group of 26 -35 years, 55.7% of the respondents are female, 26.5% respondents are with middle school level education, 83.8% of the respondents are arried, 41.1% of the sample have two children, 80.0% people belong to nuclear families, 37.0% of the respondents have 4 members in their family, 27.0% of the respondents are homemakers, 60.8% of rural people have one working member in their family, almost 35.1% of the sample possess an income of INR 7,501 to 15,000 every month and 50.0% (185) of their monthly family income is INR 10,001 to 20,000 as a monthly income.

8.1.1.1. Rural People's Access to Basic Facilities

The access to basic facilities of the rural people revealed that 99.5% of the respondents use LPG stoves and 98.9% of the sample unit have access to electricity and educational institutions, 98.6% of the respondents have access to financial institutions, 98.4% of the respondents have a market facility. 98.1% of rural people have access to drinking water and health care facility. The respondents constituting 97.6% have access to transportation facilities, 97.0% of the rural people have sanitation or toilet facilities and only 88.1% of the respondents

use proper roads. Therefore, it can be inferred that the majority of the rural population have better access to basic facilities. However, access to roads still seems to be a concern for the rural population to a certain extent.

8.1.1.2. Rural People's Status of Assets

The status of assets possessed by rural people exposed that 95.4% respondents possess their own house, 59.7% of the respondents have a self-owned land (Farming/Non-Farming). 23.8% of rural people have vehicles and 19.5% of the respondents have cattle of their own. 3.8% of the respondents have gold jewellery, 1.6% of the respondents have deposits and 1.1% (4) of the sample receive pension funds. Only 0.8% of rural people hold investments and 0.3% of the respondents were covered with life/term insurance. Hence, it is understood that the majority of the rural respondents possess their own house, and own land. Further, vehicles and cattle are possessed by the respondents to an extent of 19 to 24 percent. The rural people have limited assets which evidence their marginal economic condition.

8.1.2. Health Profile of Rural People

The health profile of the rural people has been studied through selected factors namely Status of Vaccination, General Health Information, Daily Habits, General Medical Condition, Specific Medical Condition, Experience in Medical Emergency, Status of Usage of 108 Emergency Ambulance Services, Details on Health Insurance, Frequency of Visits and Distance to Health Centres. The health profile of the selected sample from rural areas is presented as follows:

8.1.2.1. Status of Vaccination

98.4% of the respondents have taken general vaccination and 87.3% of the rural people have taken COVID-19 vaccination. However, 9.2% of the respondents are hesitant or afraid to take the COVID-19 vaccination.

8.1.2.2. General Health Information

The general health information of the rural people disclosed that 66.2% of the respondents' heights range from 160 – 170 centimetres, 64.1% of the respondents' weight range from 65 - 75 kg, 60.3% of the sample are under the overweight category, 98.4% (364) of the respondents are abled people, 69.5% of rural people sleep for 7-8 hours per day, 93.5% (346) of the respondents are non-vegetarians, 60.8% of the respondents have a water consumption of 4 litres per day and 53.5% of the sample drink tea or coffee 2 times per day.

8.1.2.3. Daily Habits

The daily habits of the rural sample revealed that 93.0% of the respondents have a habit of doing physical activities, 92.2% of the sample intake a balanced diet daily, 4.6% of the

respondents have a habit of chewing gutka or tobacco, 4.3% of the rural people have smoking habits and 3.5% of the respondents have a habit of drinking alcohol.

8.1.2.4. General Medical Condition

The general medical condition of rural people exposed that 13.8% of the respondents suffer from cold or cough, 11.4% of the respondents have fevers regularly or frequently, 5.7% of the sample have headaches, 4.1% of the respondents experience stress and 3.5% of the rural people have body pain, 2.4% of the respondents have suffered with diarrhoea and 2.2% of the respondents have giddiness or dizziness.

8.1.2.5. Specific Medical Condition

The specific medical condition of rural people explored that 10.8% of the respondents have blood pressure or hypertension, 7.3% of the respondents have diabetes, 4.6% of the respondents have respiratory problems or lungs malfunction, 2.7% of the respondents had eyesight problems and endocrine malfunction, 2.2% of the sample have a neural malfunction, 1.9% have kidney problems, 1.6% of the sample have skin related problems, 1.4% respondents suffer from obesity, allergies and digestive problems, 0.8% of the sampe have mental health issues, 0.5% respondents suffer from liver malfunction, ear infections and hearing problems and only Only, 0.3% of the respondent have anaemia, dental problems, excretion malfunction and infertility or reproductive health concerns. No respondents in the selected sample are affected by cancer and cardiovascular malfunction.

8.1.2.6. Experience in Medical Emergency

The medical emergencies experienced by rural people exposed that 17.2% of the respondents experienced pregnancy related emergencies, 11.0% (44) of the respondents have had fevers, 7.2% faced a vehicular accident, 5.6% of the sample had allergies or infections, 5.4% of the respondents suffered from COVID-19, 4.9% of the respondents had high or low blood pressure, 4.4% of the sample had respiratory problems and other related medical emergencies, 4.1% of the respondents have body pain and diabetes, 3.8% of the sample faced stomach related problems, 3.1% of the respondents have had neuro and orthopaedic problems, 2.6% of the sample have eye/ear/dental problems and also have suffered from an injury. Further, 2.3% of the respondents experienced uterus related problems, 2.1% of the sample suffered from cold, thyroid-related problems and also faced hospital transportation or surgery emergencies. 1.8% of the respondents have kidney related problems, 1.3% of the rural people suffered from snake bites, cardiac problems and headaches, 1.0 % of the respondents experienced chest pain and 0.8% (3) of the respondents suffered from old age problems and poisoning. Subsequently, 81.6% of the respondents have their family as the first point of

contact during medical emergencies and 61.4% of the respondents used motorbikes to visit the hospital during medical emergencies.

8.1.2.7. Usage of 108 Emergency Ambulance Services During Medical Emergency

The status of usage of 108 emergency ambulance services by rural people revealed that only 27.8% of the respondents availed 108 ambulance services during medical emergencies, 26.8% of the respondents have one member from their family who availed the 108 ambulance services and 26.5% of the sample availed the 108 emergency ambulance services only once.

35.2% of the respondents used 108 emergency ambulance services during pregnancy related emergencies, 15.7% of the respondents used the services during vehicular accidents and 9.3% of the sample used while being affected by COVID-19. 6.5% of the respondents used during respiratory problems whereas 5.6% used 108 emergency ambulances for hospital transportation or surgeries and 4.6% of the respondents used 108 ambulances while suffering with a fever. An equal per cent 3.7% of the sample used the services when experiencing medical emergencies due to poisoning and chest pain and 2.8% of the respondents used when 108 emergency ambulance when they suffered from orthopaedic and neuro problems. 1.9% of the rural people used 108 emergency ambulance for medical emergencies such as old age health issues, high or low blood pressure, cardiac problems, injuries and kidney-related problems and only 0.9% respondents used for stomach related problems. Thus, the majority of rural people considered for the study used 108 emergency ambulance services for pregnancy and vehicular accident-related emergencies when compared to other health issues.

58.3% of the rural respondents who availed 108 ambulances during medical emergency have experienced 10 – 20 minutes as an average response time, 99.5% of the respondents did not face any issue of money demanded by the driver or medical attendant, 99.2% of the respondents did not experience any expectation of gratuity in cash by the driver or medical attendant, 50.5% of the respondents were recommended by doctors to use the 108 ambulance services, 98.4% of the respondents had awareness of 108 emergency ambulance services and 74.3% of the respondents were self-aware of 108 emergency ambulance services

8.1.2.8. Health Insurance

The health insurance status of the rural people revealed that only 0.5% of the respondents have taken health insurance apart from the Chief Minister's Comprehensive Health Insurance Scheme (CMCHIS).

8.1.2.9. Preference, Visits and Travel Distance to Health Care Centres

The study regarding access, visits and travel distance to health care centres were done and the results reveled that 0.3% of the respondents have family doctors, 49.5% of the rural

people have private hospitals nearer to their residence, 40.0% (148) of the respondents prefer government hospitals for their medical emergency, 42.2% respondents visit the doctor 2 times in a year, 68.4% respondents visit medical shops 1 or 2 times in a year, 4.1% (15) of the respondents visit the laboratory or Scan or X-Ray centre 2 times in a year, 62.1% of the sample travel 2 to 5 km to reach the nearest government primary health centre, 44.6% of the respondents experience a travel distance of 2 – 6 km to reach the nearest private medical clinic from their residence, 40.8% of the respondents' travel distance to the nearest government hospital is 10 - 19 km from their residence, 48.6% of the sample travel 0.5 - 5 km of distance to reach the nearest private hospital, 46.5% of the respondents' travel distance covered 9 - 13 km from their residence to the nearest medical laboratory or scan or x-ray centre and 50.5% of the respondents covered the short distance of 0.25 - 1 km to reach the nearest medical shop or pharmacy from their residence.

8.1.3. Challenges of Rural People in Using 108 Emergency Ambulance Services

The challenges of rural people in using 108 emergency ambulance services are ranked based on their mean values. Therefore, it is found that Medical Service, Emergency, Access and Location ranked as the top 4 major challenges with a moderate level of agreement. The outcome of the study evidenced that the limited medical services at 108 ambulances, service rendered by the medical attendants not being equivalent to doctors and lack of service for non-medical emergencies constitute as challenges pertaining to the medical service factor. The delayed response of 108 ambulances during a medical emergency, dependence on indigenous medical treatments during a medical emergency and lack of knowledge in differentiating emergency medical conditions from non-emergency conditions constitute as challenges pertaining to the Emergency factor. Lack of access to 108 ambulances and easier access to private ambulances constitute as challenges pertaining to the Access factor. Subsequently, the limited availability of 108 ambulances in rural areas, poor road conditions and time-consuming experience to reach 108 ambulances constitute to as challenges pertaining to the Location factor. Hence, addressing the medical service, emergency, access and location-related challenges may facilitate effective utilisation of 108 emergency ambulance services by rural people during medical emergencies.

8.1.4. Needs of Rural People in 108 Emergency Ambulance Services

The factors contributing to the needs of rural people are ranked based on their mean values. Hence, it is found that Care, Control and Consultation ranked as the top three needs in 108 emergency ambulance services. Handling of all types of medical emergencies by 108 ambulances, Medical attendants’ care for patients should be on par with the doctors and support

from the 108 ambulance drivers and medical attendants during medical emergencies constitute as needs pertaining to the Care factor. Ensuring better location tracking technology to serve rural people during medical emergencies by 108 ambulances, rendering quality medical service through a well maintained 108 ambulances and incorporation of proper feedback and grievance redressal system to provide better service constitute as needs pertaining to the Control factor. Consequently, provision of telemedical consultation to the patient while waiting for 108 ambulances, arrangement of a live video consultation with doctors in the 108 ambulances and extension of counselling services to the patient and their attenders to manage the trauma during medical emergency constitute as needs pertaining to the Consultation factor. Hence, managing the care, control and consultation needs of rural people may help them to avail 108 emergency ambulance services effectively during medical emergencies.

8.1.5. Influence of Socio-Demographic Profile on the Challenges of Rural People in Using 108 Emergency Ambulance Services

The socio-demographic variables namely age, gender, educational qualification, marital status, occupation and monthly income have a significant influence on the challenges of rural people in using 108 Emergency Ambulance Services.

8.1.6. Influence of Health Profile on the Challenges of Rural People in Using 108 Emergency Ambulance Services

The health profile variables namely vaccination, body mass index (BMI), general medical condition, specific medical condition, first point of contact during medical emergency, mode of transport during medical emergency, usage of 108 emergency ambulance, preference of hospital and frequency of visits to a doctor have a significant influence on the challenges of rural people in using 108 Emergency Ambulance Services.

8.1.7. Influence of Socio-Demographic Profile on the Needs of Rural People in 108 Emergency Ambulance Services

The socio-demographic variables namely age and occupation have a significant influence on the needs of rural people in using 108 Emergency Ambulance Services. However, it is found that all the rural people have strong needs in 108 emergency ambulance services irrespective of their socio-demographic profile.

8.1.8. Influence of Health Profile on the Needs of Rural People in 108 Emergency Ambulance Services

The health profile variables namely vaccination, body mass index (bmi), general medical condition, specific medical condition, first point of contact during medical emergency, mode of transport during medical emergency, usage of 108 emergency ambulance, preference

of hospital and frequency of visits to a doctor have a significant influence on the needs of rural people in using 108 emergency ambulance services. However, it is found that all the rural people have strong needs in 108 emergency ambulance services irrespective of their health profile.

8.1.9. Relationship amongst the Challenges and Needs of Rural People in Using 108 Emergency Ambulance Services

The findings of the study revealed that there is a strong interrelationship that exists among the factors contributing to the challenges and needs of rural people in using 108 emergency ambulance services separately. However, the challenges of rural people in using 108 emergency ambulance services with regard to awareness, medical service, location, access, convenience and emergency factors correlate with the selected factors contributing to the needs of rural people in 108 emergency ambulance services.

8.1.10. Influence of the Challenges of Rural People in Using 108 Emergency Ambulance Services on their Needs (5 C's Model Approach)

The factors contributing to the challenges of rural people in using 108 emergency ambulance services viz. medical service, network, emergency and location have a significant influence on the needs of rural people with regards to coverage and control factors.

8.1.11. Derived Model on Effective Utilisation of 108 Emergency Ambulance Services by Rural People (5 C's Model Approach)

The derived model of the study revealed that there is a significant intrinsic relationship that exists between the challenges and needs of the rural people pertaining to the effective utilisation of 108 emergency ambulance services in rural areas. It is further inferred that the rural people have limited challenges in using 108 emergency ambulance services with regard to selected factors. However, the needs of rural people in 108 emergency ambulance services are common among all the people in spite of limited challenges.

8.1.12. Overall Comments of Rural Respondents on the Challenges and the Needs in Using 108 Emergency Ambulance Services

The rural respondents are concerned about the response time and the availability of the 108 ambulances during medical emergencies in the rural areas. Rural inhabitants from the selected districts strongly suggest for the increase in number of 108 ambulances in their villages to avail the same during medical emergencies without any delay. The data results further explained that the awareness on the medical services rendered by the 108 ambulances should be provided to the rural people as they are unaware about the medical services and the available medical equipment in the ambulance to avail the same during medical emergencies. The

respondents have firmly commented on the poor road conditions prevailing in the rural geography which further delays the arrival of 108 ambulances and transporting the patients to the hospitals during medical emergencies. Therefore, the rural people chiefly insisted on the timely medical service, awareness on 108 ambulance and good road conditions to effectively avail the 108 emergency ambulance services.

8.1.13. Testing of Hypotheses

The statistical analysis revealed that there is a significant difference between the socio-demographic profile and the health profile of the respondents and the challenges of rural people in using 108 Emergency Ambulance Services.

The outcome of the study ensured that there is a significant difference between the socio-demographic profile and the health profile of the respondents and the needs of rural people in 108 Emergency Ambulance Services.

The data analysis evidenced that there is a significant relationship amongst the challenges and needs of rural people in using 108 Emergency Ambulance Services.

The results of the study revealed that there is a significant influence of challenges of rural people in using 108 emergency ambulance services on their needs in 108 emergency ambulance services concerning Coverage and Control factors.

The statistical analysis evidenced that there is a significant intrinsic relationship that exists between the challenges and needs of the rural people pertaining to the effective utilisation of 108 emergency ambulance services in rural areas.

8.1.14. Challenges and Expectations of 108 Emergency Ambulance Pilots and Emergency Medical Technicians

The findings related to the profile, challenges and expectations of the 108 emergency ambulance pilots and emergency medical technicians are presented as follows:

8.1.14.1. Profile of the Emergency 108 Ambulance Pilots

The average age of the 108 ambulance pilots is from 29 to 37 years with an educational qualification of SSLC or HSE. The working experience of the pilots range from 1.5 to 9 years, and they currently work in the rural areas of the Kancheepuram District in the state of Tamil Nadu. The majority of the pilots drive BLS type ambulances followed by ALS type ambulances. The pilots majorly attend around 119 to 198 cases per month and 3 to 5 cases per day. Most of the pilots serving in the rural area experience an average response time of 3 to 5 minutes to provide emergency medical care to the victim. The majority of the 108 ambulance pilots maintain a success rate of 86% to 100% in providing emergency medical services to rural people.

Road Traffic Accidents (RTA), Labour related emergencies, Poisoning, Snake Bites, Abdominal Pain and Chest Pain are considered to be the regular medical emergencies experienced in rural areas. The average distance covered by most of the pilots in rural areas is from 150 kms to 200 kms. In regard to the conditions of the 108 ambulances, most of the pilots have provided higher ratings from 4 to 5 points. The age of the ambulances driven by the pilots ranges from 1 year to 5.5 years. The majority of the ambulances consume 1 litre of fuel to travel from 11 kms to 12 kms.

8.1.14.2. Challenges of 108 Emergency Ambulance Pilots

The 108 ambulance pilots felt that the ambulance should be replaced promptly once it has travelled the optimum distance. The usage of a stretcher for boarding patients and changing of tyres during punctures by a single person is difficult in the new model BS6 ambulance. The people, attenders and patients do not seem to be co-operative enough while attending medical emergencies by the 108 ambulance pilots. Handling alcoholics at emergency scenes is quite challenging for the pilots. People involve in physical violence and verbal abuse in case of a delayed arrival of the ambulance to the emergency scene. Poor road conditions, lack of response from callers, poor address details and location information increases the response time to attend the emergency cases in rural areas. People's preference for selective hospitals and private hospitals becomes challenging for the drivers to work according to their protocol.

People at emergency scenes interrupt the EMTs first aid to the patient and pressure the pilots and EMTS to immediately transport the patients to the hospital. Fake calls, assault cases, pressure to increase speed while transporting are considered to be significant challenges experienced by the pilots in rural areas. Parking issues, traffic issues and delayed response at hospitals are the prominent challenges experienced at the hospitals while admitting the emergency cases at casualty. Poor road conditions, poor location information, assigning ambulances to a long-distance emergency scene, network connectivity problems and GPS issues are some of the notable problems experienced by the pilots oriented with the rural locations.

8.1.14.3. Expectations of 108 Emergency Ambulance Pilots

Installing a best GPS technology to track the callers' locations and assigning the cases to the nearby ambulance is the foremost expectation of the 108 ambulance pilots. Inbuilt location tracking with LCD device for a call with better network connectivity will facilitate quick reach to the emergency scene. Easy access to stepney at ambulance, introducing 108 airlifting for emergency transportation may help the cases to quickly reach a long-distance hospital. Adding more facilities to the existing 108 ambulances ensures effective services to

the rural people during their medical emergencies. Therefore, the pilots are expecting and insisting on installing a best GPS technology, better network connectivity, improving caller's location tracking and additional facilities in the 108 ambulances to serve better in rural areas.

8.1.14.4. Profile of the Emergency 108 Ambulance Emergency Medical Technicians

The average age of EMTs who participated in the study range from 22 to 31 years. Most of them are science graduates and possess diplomas or degrees in nursing. The work experience of the EMTs ranges from 1 year to 13 years and serve in the rural areas of the Kancheepuram district. Most of the EMTs assist in the BLS type ambulances followed by ALS type ambulances. EMTs are handling 100 to 122 emergency cases per month and 4 to 7 cases per day. The average response time of the 108 ambulances to reach the emergency scene ranges from 5 to 12 minutes in most cases. The average success rate of the EMTs in delivering medical services during emergencies ranges from 90 to 100 percent.

The regular medical emergency cases handled by the 108 EMTs cover road traffic accidents (RTAs), pregnancy-related emergencies, seizure, hypoglycaemia, poisoning, chest and abdominal pain and also breathing difficulties. The medical services rendered at 108 ambulances include first aid, wound care and dressing, vitals monitoring, managing labour using pregnancy kit, management of O2 supply and breathing, management of bleeding and splint for fractures, managing IV fluids and related medications after consulting with the Emergency Care Centre (ECC) and Doctors.

The ratings provided by the EMTs for the quality of training in handling emergency cases, level of confidence in handling emergency cases, availability of medical drugs and other requirements at ambulance, availability of medical equipment and condition of the medical equipment range from 4 to 5 points. The ratings evidence the efficient function of 108 emergency ambulances in serving rural communities during medical emergencies. The EMTs feel that the intervention of doctors may help when they come across emergencies like mass accidents, handling covid-19 cases, RTA with amputation, critical head injury, cardiac arrest, unconscious cases, hypertension cum pregnancy, preterm labour, post cardiopulmonary resuscitation (CPR) for critical cases and during network problem while taking advice from doctors to provide critical care.

8.1.14.5. Challenges of 108 Emergency Ambulance Emergency Medical Technicians

Lack of co-operation while performing first aid and expecting an immediate transportation of the case to hospitals is the primary problem faced by EMTs in rural scenarios. Problems arising due to alcoholics is common in the rural scenario, especially managing alcoholics while administering medical care during an emergency is a tedious task. Fake calls,

calls for a non-emergency medical condition, verbal abuse, harsh behaviour with the EMTs and wrong primary information to the call centres are the major issues caused by the alcoholics. Poor communication of rural people in providing address details and location information is a huge hindrance and leads to increased response time to reach the emergency scene in rural areas. Lack of awareness about the 108 emergency ambulance services and treating the medical emergencies with indigenous or traditional methods of medicine among the rural and tribal population is quite challenging. Preference of private hospitals or selective GHs or Medical Colleges is one of the problems caused by rural people.

Managing assault cases in rural scenario sometimes becomes a threat for the EMTs of 108 ambulances. Whenever two parties get into fights and it leads to physical assaults, immediately they call and approach 108 ambulances. However, administering medical care to these cases are challenging as the opposite party will prevent EMTs from treating the cases. In certain cases, the people pressure for admission at Medical Colleges for a basic assault case in order to strengthen the legal proceedings against the opposite parties. Concerning hospitals, the EMTs of 108 ambulances experience challenges like lack of response to the emergency cases at selective GHs, parking issues before the casualty building, waiting time at hospitals, delay in receiving Inter Facility Transfer (IFT) cases and GHs transferring the cases to Medical Colleges without admissions. Poor road conditions in rural areas, confusions in similar names for villages are the prominent challenges faced by the EMTs pertaining to the rural locations.

8.1.14.6. Expectations of 108 Emergency Ambulance Emergency Medical Technicians

The EMTs of 108 emergency ambulances strongly insist the provision of awareness to the rural people about the usage of 108 ambulances during medical emergencies. Self-transportation during accident cases and handling emergency cases with indigenous medical practices or traditional medications should be avoided. Call centres should procure accurate information on the medical emergency and the location of the emergency scene. Providing assistants to the EMTs while attending RTA cases will be helpful to manage the emergency cases better when the ambulance is on road. Increased number of ambulances in the accident-prone zones, live video conferencing with doctors, periodical replacement of medical equipment, improved GPS technology, adding more medical facilities for the 108 ambulances are the expectations of EMTs to render better service to rural people. The GHs should take utmost care of the emergency cases and should transfer the cases to medical colleges only during critical situations. The EMTs also insist that the 3-shift system with 8 hours each and weekly counselling will improve their mental health. This will enable the EMTs to serve the people effectively and efficiently. Table 5.19 clearly displays the varied expectations of the

108 ambulance EMTs pertaining to the 108 Emergency Ambulance Services to provide better services to the people in rural area.

8.2. Operational Recommendations

The operational recommendations related to rural people, 108 ambulance, medical services at 108 ambulances, 108 call centres, 108 ambulance pilots and emergency medical technicians, health care centres and the Government of Tamil Nadu are presented as follows:

8.2.1. Awareness Programmes to Rural People

1. Provision of awareness programmes to rural people on the services offered at 108 ambulances is necessary. The awareness should be provided on how to approach the 108 call centres during a medical emergency.
2. Creating awareness on the importance of providing first aid during a medical emergency before transporting the patients to hospitals may increase the co-operation of people while availing 108 emergency ambulance services.
3. Providing a basic outline on the operations and functions of 108 emergency ambulance services may help the rural people to understand the average response time, speed limits, providing first aid and transporting cases to hospitals which will help the pilots and EMTs to handle the cases better during emergencies.
4. Explaining the legal actions and consequences against the fake calls to 108 call centres, problems created by alcoholics, fake assault cases, involvement in verbal abuse and physical assaults against the 108 ambulance pilots and EMTs will help in the control of the above-mentioned issues.
5. Providing knowledge on the differences between emergency and non-emergency medical cases, the importance of providing correct location details, the effect of proper communication of medical emergency details, avoiding preferences in choosing hospitals while availing 108 ambulances, risk of self-transportation of accident cases and problems in relying on indigenous or traditional methods of medicines during medical emergencies will increase the usage of 108 emergency ambulance services effectively in rural areas.

8.2.2. Medical-Camps, Counselling and Rehabilitation Centres in Rural Areas

6. Encouraging regular medical check-ups and conducting periodical medical camps for rural and tribal people will improve their health conditions and may prevent medical emergencies like fever, seizures, etc to a certain extent.
7. Regular health check-ups may help in the management of blood pressure, hypertension, diabetes and respiratory problems which will further impact reduced medical

emergencies. Pregnancy-related medical emergencies can be considerably reduced if they undergo medical check-ups regularly and manage their admissions at hospitals on fixed or nearest due dates.

8. Opening rehabilitation centres for alcoholics and providing proper treatments may control the medical emergencies caused due to alcohol addiction.
9. Proving psychological counselling services to the rural people may help to reduce medical emergencies due to suicide cases by poisoning, hanging, self-immolation etc.
10. Counselling services are essential for the patients and their attenders who undergo medical emergency or trauma post-recovery to ensure good mental health.

8.2.3. 108 Ambulance

11. Accessibility and availability of well-equipped 108 ambulances in the nearest location of villages will ensure the effective usage by rural people.
12. Maintenance of 108 ambulances, good running condition and periodical replacement of the vehicle that has travelled maximum distance with a new model vehicle, installing power steering will help in efficient attention and reach to medical emergencies.
13. Number of ambulances in accident-prone zones should be increased to handle road traffic accidents and mass accidents effectively.
14. Average response time can be improved in rural areas by allotting a nearby parking area in the villages for 108 ambulances. Subsequently, access to the callers' locations and tracking through an inbuilt LCD screen may assist the 108 pilots to reduce the average response time.
15. Introduction of 108 Air Ambulances to airlift critical patients from long-distances will save many lives during medical emergencies.

8.2.4. Medical Services at 108 Ambulance

16. 108 ambulances should be well-equipped to handle all the types of medical emergencies within a short period.
17. Introducing ECG facility, sutures facility, access to oxygen cylinders by EMTs without Pilot's intervention and providing water facility at 108 ambulances will be helpful to handle emergency medical cases better.
18. Conditions of varied medical equipment, availability of medical drugs and provision of video calling facility with doctors will help to treat the emergency cases effectively.
19. A track record of location wise medical emergencies can be used to equip the 108 ambulances with the appropriate and specific case oriented medical facilities for particular areas. Example: a high prone zone for snake bites or vehicular accidents.

8.2.5. 108 Call Centres

20. Procuring accurate information about rural callers' location and medical emergencies will help the 108 Pilots and EMTs to reach the emergency scene on time with all the necessary preparations.
21. 108 call centres should be enhanced with a high-end GPS tracking technology to trace the callers' locations to assign the nearby 108 ambulances by considering their routes and traffic conditions to attend the medical emergencies with a less average response time.
22. 108 call centres can engage the rural callers with tele-medical consultation to manage medical emergency cases with basic first aid while waiting for 108 ambulances.
23. Incorporating strong and effective feedback and grievance redressal system for rural people who availed 108 emergency ambulance services will help to identify and address the deficiencies or areas of improvement to provide better medical services during medical emergencies.

8.2.6. Primary Health Centres, Hospitals and Medical Colleges

24. The Primary Health Centres functioning in the villages should be equipped enough to handle medical emergencies like snake bites, poisoning and respiratory problems.
25. Addressing the traffic issues and vehicular obstructions in the hospital zone and their parking areas in front of the casualty blocks or buildings at the Government General Hospitals and Medical Colleges will ensure quick access by 108 ambulances to admit the emergency cases in the respective hospitals in a lesser time.
26. Timely treatment to the emergency cases admitted through 108 ambulances should be ensured by Primary Health Centres, Government General Hospitals and Medical Colleges without any delay.
27. Primary Health Centres and Government General Hospitals should try and take utmost efforts to treat the emergency cases admitted through 108 ambulances before referring them to Medical Colleges as this will enhance the confidence of rural people in preferring government health care centres.
28. Special consideration for emergency cases related to fire accidents should be provided at Government General Hospitals and Medical Colleges.
29. Periodical inspections and regular audits should be conducted at the Primary Health Centres, Government General Hospitals and Medical Colleges by the medical authorities to ensure timely response for the emergency cases admitted through 108 ambulances.

8.2.7. 108 Ambulance Pilots and Emergency Medical Technicians

30. Regular training and workshops should be conducted for 108 ambulance pilots and emergency medical technicians to enrich their performances in emergency medical service delivery in rural and tribal areas.
31. Special training for EMTs to handle mass accidents, treat unconscious patients, manage head injuries and critical pregnancy cases on par with the medical doctors will be helpful to limit doctors' interventions and increase their level of confidence to render medical services during emergencies.
32. Providing weekly or regular counselling and conducting regular feedback sessions to 108 pilots and EMTs may help them to manage their stress and mental health as they witness traumas and deal with varied medical emergencies frequently.
33. Provision of hygienic parking places with basic amenities including waiting rooms and restroom facilities will be helpful for 108 pilots and EMTs.
34. A three-shift system with 8 hours for each shift may ensure a better work-life balance of 108 ambulance pilots and EMTs and improve their work efficiency.

8.2.8. Health & Family Welfare Department and the Government of Tamil Nadu

35. The effective utility of 108 emergency ambulance services is possible only when the rural areas are connected with quality roads and good network connectivity.
36. The Government of Tamil Nadu should take strategic measures to reduce vehicular accidents by taking stringent actions against the people violating traffic rules. Subsequently, awareness programmes on traffic rules, road safety and its impact on vehicular accidents will reduce related medical emergencies.
37. The Government of Tamil Nadu should take stringent legal actions against the people involved in assault cases and hinder the services of 108 emergency ambulance services in rural areas.
38. Periodic inspections and audits in the PHCs, GHs and Medical Colleges will ensure quality in medical treatments and timely response for the emergency cases admitted through 108 ambulances.
39. Rehabilitation centres and counselling centres should be constituted to ensure better mental health care services to rural people, especially for alcoholics, drug addicts and other mental health issues such as suicidal thoughts.
40. The government of Tamil Nadu should take suitable policy measures to ensure accessibility, availability and affordability of quality health care services for the rural and tribal people.

41. Report on Rural Medical Emergency Statistics can be constituted by the Health & Family Welfare Department of Tamil Nadu to understand and improve the emergency medical care and services in rural areas.
42. The Health & Family Welfare Department of Tamil Nadu can develop a "State Rural Health Index – SRHI" to track the health status and address the health care facilities in rural geography by computing the village-wise health index.
43. Rural Development can be achieved through effective programmes that will improve the standard of living, quality of life and empowerment of rural people with better access to basic facilities and improved status of assets.

8.3. Conclusion

Delivering quality health care services to rural people is one of the predominant goals of any welfare state as it impacts the quality of life and sustainability of its citizens. Ensuring the accessibility, availability and affordability of health care services in rural areas will lead to a healthy human resource that will thrive the growth and development of a nation. In regard to health care services, the provision of emergency medical services to people plays a significant role, especially in rural geography. The primary objective of the current study is to understand the challenges and needs of rural people in the effective utilisation of 108 emergency ambulance services. The research work was undertaken with proper methodological approach scientifically and systematically. The study utilised both the primary and secondary data retrieved from rural people, 108 ambulance pilots and emergency medical technicians to achieve its research objectives. The proposed hypotheses were tested using suitable statistical tools and techniques. The outcome of the study evidences the existence of notable challenges and significant needs pertaining to the usage of 108 emergency ambulance services. The researchers have enumerated operational recommendations to address the challenges in rural people and also to manage the needs of rural users in the 108 emergency ambulance services. The outcome of the study helps the management of 108 Emergency Ambulance Services, and aid the Health & Family Welfare Department and the Government of Tamil Nadu to make suitable policy decisions to ensure the effective utilisation of 108 emergency ambulance services among the rural people of Tamil Nadu.

8.4. Scope for Future Research

Researchers can conduct similar studies can be performed among the people of urban and tribal areas to understand their problems and expectation in the usage of 108 emergency ambulance services. A comparative study on the performance of 108 emergency ambulance services in varied states of India can be undertaken. A study related to the problems of GPS

and location tracking and its impact on average response time to reach the emergency scene can be performed. Further, a study can be undertaken by tracking the historical record of medical emergencies based on specific locations to determine emergency zones viz. vehicular accidents, snake bites, poisoning etc to address the medical emergency cases strategically.

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ANNEXURE - I

CONSENT FORM AND INTERVIEW SCHEDULE

INFORMED CONSENT FORM

Date: _____

Greetings!

You are invited to participate in the study titled **"Challenges of Rural People in Effective Utilisation of 108 Emergency Ambulance Services in Tamil Nadu – An Empirical Study"** funded by the Operational Research Programme - Tamil Nadu Health System Reform Programme (ORP-TNHSRP).

Details of the Investigators:

1. **Dr. B. Chinna Muthu**, Principal Investigator.
   Assistant Professor of Commerce, Madras Christian College, Chennai.
2. **Dr. S. Kalyani**, Co-Principal Investigator.
   Assistant Professor of Public Administration, Madras Christian College, Chennai.
3. **Dr. V. Vijay Devanesan**, Co-Principal Investigator.
   Assistant Professor of Public Administration, Madras Christian College, Chennai.

INFORMATION SHEET

The study seeks to investigate the challenges of rural people in the effective utilisation of 108 emergency ambulance services. In this regard, an interview schedule has been prepared to procure information related to your personal profile and health profile. The study further records your percention on selective factors like awareness, medical service, behaviour, utility, location, access, network, convenience and emergency that are contributing to the challenges in availing the 108 emergency ambulance services. The research works intends to collect data on factors on your expectation viz. care, consultation, commitment, coverage and control in 108 emergency ambulance services. The interviewer will also record your suggestions to improve the services rendered through the 108 emergency ambulance services.

The researchers believe that your participation in this study will assist them to understand the challenges of rural people in availing the emergency services through 108 ambulances. The data procured from the study will be kept confidential and will be utilized for the research purpose only. The outcome of the study helps the Government of Tamil Nadu to frame policy guidelines to provide enhanced medical services to rural people through the 108 emergency ambulance services.

The researcher would like to assure you that participation in this study is voluntary. You are free to withdraw your participation from the study at any point if you do not feel comfortable. You are also guaranteed that your responses in this interview will be treated with confidentiality and anonymity. Where appropriate, the researcher will use code or disguised names of the respondent to maintain a high level of confidentiality.

Participation in this study will take 15 – 20 minutes of your time. There are no anticipated rewards for participating in this study. By consenting to participate in this study, you also permit the researcher to record the conversation if required. You are also assured that the researcher will report the findings in such a manner that respect the right to dignity of each participant.

I am going to give you adequate information and invite you to be part of this research. There may be some words that you do not understand. In such a case, please ask me to stop as we go through the information and I will take time to explain.

(Field investigator explains the rationale and need of the project)

Procedures for the interview: This interview schedule will take about 15-20 minutes. No names will be required for the study; however, I will use a code for the interview schedule and interview guide just for research benefits.

Benefits: There are no immediate and direct benefits to you as a person that will accrue from your participation in the study. However, this study will help in designing interventions and recommendations to improve the 108 Emergency Ambulance Services in the rural areas of Tamil Nadu.

Confidentiality: Any information given will remain confidential and will be used for this study only. The answers will be treated in confidence and the findings of the study will be generalized and not attributed to a single individual. Codes will be used instead of names to enhance the confidentiality of the information provided.

Voluntary consent: You are free to choose whether to take part in this study or not, and you are free to withdraw at any time at your discretion. Feel free to ask any questions before or after the interview.

Potential risks- There are no potential risks in the study.

Who to Contact:

If you have any questions you may ask me now or later, even after the study has started. If you wish to ask questions later, you may contact the following person:

Dr. B. Chinna Muthu, Principal Investigator

Email Address: b.chinamuthu@gmail.com

CERTIFICATE OF CONSENT

I have read the foregoing information/ it has been read to me. I understand the purpose and procedures of the study. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I hereby provide consent to voluntarily participate as a respondent in this research.

Name of Participant_____

Signature/ Left thumb impression of Participant _____

Signature of Witness (If Applicable) _____

Date _____

INTERVIEW SCHEDULE

Challenges of Rural People in Effective Utilisation of 108 Emergency Ambulance Services in Tamil Nadu – An Empirical Study

Name of the District: Kancheepuram

Name of the Sub-Rural District: _____

Name of the Village: _____

Ward Number (Optional): _____

Name: (Optional): _____

CMCHIS Card Number: _____

PART I - SOCIO-DEMOGRAPHIC PROFILE

1. Age (In Years): Please Specify _____

2. Gender
   - Male
   - Female
   - Third Gender

3. Educational Qualification
   - No Formal Education
   - School Level, Please Specify Class/STD_____
   - Certification/Diploma
   - Undergraduate
   - Postgraduate
   - Professional
   - Others, Please Specify

4. Marital Status
   - Single/Unmarried
   - Married
   - Separated/Divorced/Widow

5. No. of Children: Please Specify _____
   - No Children
   - Not Applicable (Unmarried)

6. Type of Family
   - Nuclear
   - Joint/Extended

7. No. of Members in Family, Please Specify _____

8. Occupation
   - Agricultural Labour
   - Non-Agricultural Labour
   - Salaried Employee
   - Self-Employed or Business
   - Homemaker
   - Unemployed

9. No. of Working Members in Family: _____

10. Monthly Income (In INR): _____

11. Monthly Income of Family (In INR): _____

12. Access to Basic Facilities	Yes	No
i. Drinking Water		
ii. Electricity		
iii. LPG Stove		
iv. Sanitation/Toilet		
v. Health Care		
vi. Roads		
vii. Transportation Service		
viii. Market		
ix. Educational Institutions		
x. Financial Institutions		

13. Status of Assets	Yes	No
i. Own House		
ii. Own Land (Farming/Non-Farming)		
iii. Cattle		
iv. Gold Jewellery		
v. Vehicle		
vi. Deposits		
vii. Investments		
viii. Life/Term Insurance		
ix. Pension Fund		
x. Any other, Please specify		

PART II – HEALTH PROFILE

14. Status of Vaccination	Yes	No	Not Interested
i. General Vaccination			
ii. Covid-19 Vaccination			
iii. Are you hesitant or have fears in taking the Covid-19 vaccination?			

	15. General Health Information:	Details
i.	Height (cms)	
ii.	Weight (kgs)	
iii.	Differently-abled? If yes, provide details	
iv.	Hours of Sleep per Day	
v.	Vegetarian or Non-Vegetarian	
vi.	Water Consumption per day (In litres)	
vii.	Frequency of Tea or Coffee per day	

	16. Daily Habits	Yes	No
i.	Physical Activity		
ii.	Balanced Diet		
iii.	Chewing Gutka/Tobacco		
iv.	Smoking		
v.	Drinking Alcohol		

	17. General Medical Condition (Regular/Frequent)	Yes	No
i.	Fever		
ii.	Cold/Cough		
iii.	Headache		
iv.	Diarrhoea		
v.	Body Pain		
vi.	Giddiness/Dizziness		
vii.	Stress		

	18. Specific Medical Condition	Yes	No
i.	Obesity		
ii.	Blood Pressure / Hypertension		
iii.	Diabetes		
iv.	Allergies		
v.	Anaemia		
vi.	Eyesight problems		
vii.	Ear infections and Hearing problems		
viii.	Dental problems		
ix.	Respiratory problems or Lungs malfunction		
x.	Cardiovascular malfunction		
xi.	Kidney malfunction		
xii.	Liver malfunction		
xiii.	Digestive problems		
xiv.	Endocrine malfunction (Thyroid etc)		
xv.	Skin related problems		
xvi.	Neural malfunction		
xvii.	Excretion malfunction		
xviii.	Cancer		
xix.	Infertility or Reproductive health concerns		
xx.	Mental Health Issues		
xxi.	Any other, please specify		

	19. Experience in Medical Emergency	Details
i.	Have you experienced any medical emergency in your life? (Yes/No)	
	If yes, please specify the details of medical emergency 1. 2. 3. 4. 5.	
ii.	First Point of Contact during a medical emergency?	
iii.	Mode of Transport used to visit health centre/hospital during a medical emergency?	

	20. Status of Usage of 108 Emergency Ambulance Services	Details
i.	Have you used the 108 Emergency Ambulance Services for any medical emergency? (Yes/No)	
	If yes, please specify the number of people from your family who have availed the 108 Emergency Ambulance Services?	
	How many times you have availed the 108 Emergency Ambulance services so far?	
	Please specify the details of medical emergency of the family members who have availed the 108 Emergency Ambulance Services. 1. 2. 3. 4. 5.	
	Please specify the Average Response Time of the 108 Emergency Ambulance Services during medical emergencies (In Hrs/Mins)	
ii.	Did the medical attendant or driver demand money to use the 108 Emergency Ambulance Service? (Yes/No)	
iii.	Did the medical attendant or driver expect a gratuity (tip) in cash for availing the 108 Emergency Ambulance Service? (Yes/No)	
iv.	Has anyone recommended using the 108 Emergency Ambulance Services during a medical emergency? (Yes/No)	
	If yes, please specify	
v.	Are you aware about 108 Emergency Ambulance Services?	
	If yes, specify the source	

	21. Health Insurance, Preference and Frequency of Visits to Health Centres	Details
i.	Do you have any other Health Insurance Policies apart from CMCHIS? (Yes/No)	
	If Yes, please specify, Name of the Insurance Company	
	Premium Per Annum	
	Amount of Coverage	
	No. of Persons Covered under Insurance	
ii.	Do you have a family doctor? (Yes/No)	
	If yes, please specify	
iii.	Nearest Health care centre? Please specify.	
iv.	Preference of Hospital? (Government/Private)	
v.	Frequency of Visits to a Doctor in a year?	
vi.	Frequency of Visit to a Medical shop/Pharmacy in a year?	
vii.	Frequency of Visit to a laboratory/Scan/X-Ray centre in a year?	

	22. Travel Distance (In Kms) from your residence	Details
i.	How far is the nearest Government Primary Health Centre?	
ii.	How far is the nearest Private Medical Clinic?	
iii.	How far is the nearest Government General Hospital?	
iv.	How far is the nearest Private Hospital?	
v.	How far is the nearest Medical Laboratory/Scan/X-Ray Centre?	
vi.	How far is the nearest Medical Shop/Pharmacy?	

PART III - CHALLENGES IN USING 108 EMERGENCY AMBULANCE SERVICES (PERCEPTION ON FACTORS)

(Strongly Agree – SA, Agree – A, Neutral – N, Disagree – DA, Strongly Disagree - SD)

Awareness	SA	A	N	DA	SD
Lack of awareness on the usage of 108 emergency ambulance services					
Don't know how to call and approach 108 services during a medical emergency					
Lack of knowledge about the types of medical service provided by 108 ambulances					
Medical Service	**SA**	**A**	**N**	**DA**	**SD**
108 emergency ambulances provide limited medical services only					
Medical services rendered by the attendant at 108 ambulances is not equivalent to the services of a doctor.					
108 emergency ambulances do not provide services for non-emergency medical conditions					

Behaviour	**SA**	**A**	**N**	**DA**	**SD**
The medical attendants at 108 ambulances are not caring, supportive and helpful					
The 108 ambulance drivers are not amicable with patients and their attenders					
The 108 ambulance call centres are not responsive during medical emergencies					
Utility	**SA**	**A**	**N**	**DA**	**SD**
108 ambulances are not useful and helpful during a medical emergency					
Rural people do not prioritise to utilise the 108 emergency ambulance services during a medical emergency					
108 ambulances are not suitable for all medical emergencies					
Location	**SA**	**A**	**N**	**DA**	**SD**
Limited availability of 108 ambulances in rural areas					
Lack of proper roads to connect my location by 108 ambulances during a medical emergency					
Reaching a 108 ambulance is time-consuming from my location					
Access	**SA**	**A**	**N**	**DA**	**SD**
Lack of access to 108 ambulances during a medical emergency					
108 ambulances find it difficult to access rural areas to provide emergency medical services.					
Access to a private ambulance is easier than 108 emergency ambulance during a medical emergency					
Network	**SA**	**A**	**N**	**DA**	**SD**
Poor network connectivity to reach 108 call centres during a medical emergency					
108 ambulances find it difficult to connect to patient calls due to poor network					
Lack of networking between hospitals and 108 ambulances make it challenging to patients to decide on hospital admissions					
Convenience	**SA**	**A**	**N**	**DA**	**SD**
108 ambulances are not convenient to use during a medical emergency in rural areas					
Difficulty to use 108 call centres during a medical emergency					
108 ambulances are not equipped for all types of medical emergencies					
Emergency	**SA**	**A**	**N**	**DA**	**SD**
During medical emergencies 108 ambulances take long time to attend the patients in rural areas					
Depending on local/indigenous methods of treatment during medical emergencies without reaching to108 ambulance services					
Lack of knowledge to differentiate between emergency and non-emergency medical condition					

PART IV - NEEDS OF RURAL PEOPLE IN 108 EMERGENCY AMBULANCE SERVICES (PERCEPTION ON 5 C'S MODEL APPROACH)

(Strongly Agree – SA, Agree – A, Neutral – N, Disagree – DA, Strongly Disagree - SD)

Care	**SA**	**A**	**N**	**DA**	**SD**
108 ambulances must handle all types of medical emergencies					
The medical attendants should provide better care for the patients on par with the doctors					
The medical attendant and the driver should be supportive to the patient and their attenders to handle a medical emergency situation					
Consultation	**SA**	**A**	**N**	**DA**	**SD**
Tele-medical consultation should be provided to the patient experiencing a medical emergency while waiting for a 108 ambulance					
Arrangement for a live video consultation with doctors in the 108 ambulances, after the patient is picked up for a medical emergency can be implemented.					
Counselling services can be extended to the patients and their attenders in the 108 ambulances to manage their trauma due to the medical emergencies.					
Commitment	**SA**	**A**	**N**	**DA**	**SD**
The medical attendant and the driver should support the patient until admission during a medical emergency.					
The 108 ambulance services should assist the patient for further transportation to other hospitals if there is a lack of appropriate medical facilities to handle a medical emergency at the currently admitted hospital					
The 108 ambulance call centres should follow up on the status of the patient's health condition after hospital admission.					
Coverage	**SA**	**A**	**N**	**DA**	**SD**
The 108 emergency ambulance services should be extended to all the rural areas					
The network connectivity should be made better in rural areas to access the 108 ambulance services during a medical emergency					
Necessary medical equipment should be included in the 108 ambulance to serve rural people better					
Control	**SA**	**A**	**N**	**DA**	**SD**
The 108 ambulances should ensure better location tracking technology to serve rural people during a medical emergency					
Periodical evaluation and maintenance check of 108 ambulances are required to ensure quality medical service					
108 ambulances should incorporate a feedback and grievance redressal system to provide better service during a medical emergency					

PART V - SUGGESTIONS (IF ANY)

_____
_____
_____
_____

****

ANNEXURE - II

CONSENT FORM AND INTERVIEW SCHEDULE

(TRANSLATED INTO TAMIL LANGUAGE)

தகவலாளியின் ஒப்புதல் படிவம்

தேதி: _____

வணக்கம்!

"தமிழ்நாட்டில் உள்ள 108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்துவதில் கிராமப்புற மக்கள் எதிர்கொள்ளும் சிக்கல்கள் – ஓர் அனுபவ ஆய்வு" என்னும் தலைப்பிலான ORP-TNHSRPயின் நிதியுதவியோடு நடைபெறும் ஆய்வில் பங்கேற்க அழைக்கப்படுகிறீர்கள்.

ஆய்வாளர்களின் விவரங்கள்:

1. **முனைவர் பா.சின்னமுத்து,** முதன்மை ஆய்வாளர்
   உதவிப் பேராசிரியர், வணிகவியல் துறை, சென்னைக் கிறித்தவக் கல்லூரி, சென்னை.
2. **முனைவர் கு. கல்யாணி,** இணை முதன்மை ஆய்வாளர்
   உதவிப் பேராசிரியர், பொது நிர்வாகத் துறை, சென்னைக் கிறித்தவக் கல்லூரி, சென்னை.
3. **முனைவர் வி.விஜய் தேவநேசன்,** இணை முதன்மை ஆய்வாளர்.
   உதவிப் பேராசிரியர், பொது நிர்வாகத் துறை, சென்னைக் கிறித்தவக் கல்லூரி, சென்னை.

தகவல் படிவம்

கிராமப்புற மக்கள் 108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்துவதில் உள்ள சிக்கல்களை ஆராய்வது ஆய்வின் நோக்கமாகும். இதற்காக தங்கள் தனிப்பட்ட மற்றும் உடல்நிலை குறித்த தகவல்களைப் பெறும் நோக்கில் ஒரு நேர்காணல் படிவம் தயாரிக்கப்பட்டுள்ளது. விழிப்புணர்வு, மருத்துவ சேவை, நடத்தை, பயன்பாடு, இடம், வசதி (வாய்ப்பு), கூட்டமைவு, வாய்ப்பு போன்ற காரணிகள் 108 அவசர மருத்துவ ஊர்தி சேவையைப் பெறுவதில் ஏற்படுத்தும் சிக்கல்களைக் குறித்த தங்கள் கருத்துகள் ஆய்வில் பதிவு செய்து கொள்ளப்படும். 108 அவசர மருத்துவ ஊர்தி சேவையில் உள்ள கவனிப்பு, மருத்துவ ஆலோசனை, அர்ப்பணிப்பு, பயன்பாட்டு எல்லை மற்றும் கட்டுப்பாடுகள் போன்ற தங்கள் எதிர்பார்ப்புகள் சார்ந்த காரணிகள் குறித்த தகவல்களையும் இவ்வாய்வு சேகரித்துக்கொள்ளும். 108 அவசர மருத்துவ ஊர்தி சேவைகளை மேம்படுத்த தாங்கள் தரும் ஆலோசனைகளையும் ஆய்வாளர் பதிவு செய்துகொள்வார்.

கிராமப்புற மக்கள் 108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்துவதில் உள்ள சிக்கல்களை ஆய்வாளர்கள் புரிந்துகொள்ள உதவும் என அவர்கள் நம்புகிறார்கள். ஆய்வின்வழி பெறப்பட்ட தகவல்கள் இரகசியமாகப் பாதுகாக்கப்படுவதுடன், ஆய்வு நோக்கத்திற்காக மட்டுமே பயன்படுத்தப்படும். தமிழ்நாடு அரசு கிராமப்புற மக்களுக்கு மேம்பட்ட மருத்துவ சேவையை வழங்கும் நோக்கில் கொள்கை வழிகாட்டுதல்களை உருவாக்க ஆய்வில் பெறப்படும் முடிவுகள் உதவும்.

இவ்வாய்வில் தங்களின் பங்கேற்பு தன்னார்வ அடிப்படையில் இருப்பதை ஆய்வாளர் உறுதிபடுத்திக்கொள்ள விரும்புகிறார். நீங்கள் அசௌகரியமாக உணர்ந்தால், எந்நேரத்திலும் நீங்கள் ஆய்வில் பங்கேற்காமல் விலகிக்கொள்ளலாம். தங்களின் பதில்கள் இரகசியமாகவும் அடையாளமற்றதாகவும் இருக்கும் என உறுதியளிக்கப்படுகிறீர்கள். தேவை இருப்பின், ஆய்வாளர்

தகவலாளியின் பெயர்களை இரகசியமாகக் காக்கும் நோக்கில் குறியீடுகளாகவோ, மாற்றப்பட்ட பெயர்களாகவோ பயன்படுத்துவார்.

இவ்வாய்வில் பங்கேற்க தங்களுக்கு 10 – 15 நிமிடங்கள் எடுக்கும். இதில் பங்கேற்பதற்குப் பணமோ பரிசுகளோ அளிக்கப்படாது. இவ்வாய்வில் பங்கேற்க ஒப்புக்கொள்வதன் மூலம், ஆய்வாளர் தம் தேவை கருதி, தங்களது உரையாடலைப் பதிவு செய்துகொள்ளவும் அனுமதியளிக்கிறீர்கள். பங்கேற்பாளருக்குக் கண்ணியக்குறைவு ஏற்படாத வகையில் ஆய்வாளர் தம் முடிவுகளை அறிவிப்பார் என உறுதியளிக்கப்படுகிறீர்கள்.

நான் தங்களுக்கு இவ்வாய்வு குறித்த போதுமான தகவல்களை வழங்கி, பங்கெடுத்துக்கொள்ள அழைக்கிறேன். இதில், சில சொற்கள் உங்களுக்குப் புரியாமல் இருக்கலாம். அப்போது, என்னை நிறுத்தச் சொல்லி, மேலும் விளக்கமாகக் கேட்டுக்கொள்ளவும்.

(என ஆய்வாளர் இட்டத்தின் அடிப்படையையும் தேவையையும் விளக்குவார்)

நேர்காணல் நடைமுறைகள்: இந்த நேர்காணல் படிவத்தை முடிக்க/ நிறைவு செய்ய/ பூர்த்தி செய்ய 15-20 நிமிடங்கள் ஆகும். ஆய்விற்குப் பெயர்கள் தேவையற்றன: இருப்பினும் நான் ஆய்வுத் தேவைக்காக நேர்காணல் படிவம் மற்றும் நேர்காணல் வழிகாட்டி ஆகியவற்றில் குறியீட்டைப் பயன்படுத்துவேன்.

நன்மைகள்/ பலன்கள்: ஆய்வில் பங்கெடுப்பதன் மூலம் ஒரு தனி மனிதராக உங்களுக்கு உடனடி மற்றும் நேரடி பலன்கள் எதுவும் கிடைக்காது. இருப்பினும், இவ்வாய்வு தமிழ்நாட்டின் கிராமப்புற பகுதிகளிலுள்ள 108 அவசர மருத்துவ ஊர்தி சேவையை மேம்படுத்த ஆலோசனைகள் வழங்கவும் செயல்திட்டங்களை உருவாக்கவும் உதவும்.

இரகசியத்தன்மை: கொடுக்கப்பட்ட எந்த தகவல்களும் இரகசியமாக இருப்பதுடன், ஆய்வு நோக்கத்திற்காக மட்டுமே பயன்படுத்தப்படும். விடைகள் இரகசியமாகக் கையாளப்படுவதுடன் ஆய்வு முடிவுகள் தனிமனிதருக்குரியதாக இல்லாமல், பொதுவானதாக இருக்கும். கொடுக்கப்பட்ட தகவல்களின் இரகசியத்தன்மையை மேம்படுத்த பெயர்களுக்குப் பதிலாகக் குறியீடுகள் பயன்படுத்தப்படும்.

தன்னார்வ ஒப்புதல்: இந்த ஆய்வில் பங்கேற்பதற்கும் பங்கேற்காமல் இருப்பதற்கும், பங்கேற்றபின் எந்நேரத்தில் விலகுவதற்கும் தங்களுக்கு முழு சுதந்திரம் உள்ளது. நேர்காணலுக்கு முன்போ பின்போ எந்த விளக்கங்களைக் கேட்கவும் தயக்கம் வேண்டாம்.

ஆபத்திற்கான சாத்தியக்கூறுகள்: ஆய்வில் எவ்வித ஆபத்தும் இல்லை.

யாரைத் தொடர்பு கொள்ள வேண்டும்

உங்களுக்கு ஏதேனும் விளக்கங்கள் இருந்தால், இப்போதோ பின்னரோ ஆய்வுத் தொடங்கிய பிறகோ என்னிடம் கேட்கலாம். நீங்கள் பின்னர் வினாக்கள் கேட்க விரும்பினால், கீழே கொடுக்கப்பட்டுள்ள நபரிடம் கேட்கலாம்.

முனைவர் பா.சின்னமுத்து, முதன்மை ஆய்வாளர்
மின்னஞ்சல் முகவரி: b.chinamuthu@gmail.com

ஒப்புதல் சான்றிதழ்

மேற்கூறிய தகவல்களை நான் படித்தேன்/ எனக்கு படித்துக்காட்டப்பட்டன. நான் ஆய்வின் நோக்கத்தையும் நடைமுறைகளையும் புரிந்துக்கொள்கிறேன். ஆய்வு குறித்த எந்த வினாக்களையும் எழுப்ப எனக்கு வாய்ப்பு இருந்ததோடு, அதற்கான மனநிறைவான வகையில் விடைகளும் அளிக்கப்பட்டன. இந்த ஆராய்ச்சியில் தகவலாளியாகப் பங்கேற்க என் முழுவிருப்பத்தோடு ஒப்புக்கொள்கிறேன்.

பங்கேற்பாளரின் பெயர்_____

பங்கேற்பாளரின் கையொப்பம்/ இடது கட்டைவிரல் _____

சாட்சியின் கையொப்பம் (பொருந்தினால்)

தேதி _____

நேர்காணல் படிவம்

தமிழ்நாட்டில் உள்ள 108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்துவதில் கிராமப்புற மக்கள் எதிர்கொள்ளும் சிக்கல்கள் – ஓர் அனுபவ ஆய்வு

மாவட்டம்: காஞ்சிபுரம்

வட்டம்: _____

கிராமம்: _____

வார்டு எண் (கட்டாயமற்றது): _____

பெயர் (கட்டாயமற்றது): _____

முதலமைச்சரின் விரிவான மருத்துவக் காப்பீட்டுத் திட்ட அட்டை எண்: _____

பிரிவு - I சமூக மக்கள்தொகை குறிப்பு

1. வயது (ஆண்டுகளில்): குறிப்பிடுக _____

2. பாலினம்
   - ☐ ஆண்
   - ☐ பெண்
   - ☐ மூன்றாம் பாலினத்தவர்

3. கல்வித் தகுதி
   - ☐ முறையான கல்வியில்லை
   - ☐ பள்ளிப் படிப்பு, வகுப்பைக் குறிப்பிடுக _____
   - ☐ சான்றிதழ்/பட்டயப் படிப்பு
   - ☐ இளநிலை பட்டப் படிப்பு
   - ☐ முதுநிலை பட்டப் படிப்பு
   - ☐ தொழிற்கல்வி
   - ☐ மற்றவை, குறிப்பிடுக

4. திருமண நிலை
   - ☐ திருமணமாகாதவர்
   - ☐ திருமணமானவர்
   - ☐ பிரிந்திருப்பவர்/விவாகரத்தானவர்/துணை இழந்தவர்

5. குழந்தைகளின் எண்ணிக்கை: குறிப்பிடுக _____
   - ☐ குழந்தைகள் இல்லை
   - ☐ பொருந்தாது (திருமணமாகாதவர்)

6. குடும்ப வகை
   - ☐ தனிக்குடும்பம்
   - ☐ கூட்டுக்குடும்பம்/ விரிந்த குடும்பம்

7. குடும்ப உறுப்பினர்களின் எண்ணிக்கை, குறிப்பிடுக _____

8. தொழில்

- ☐ வேளாண் தொழிலாளர்
- ☐ வேளாண் அல்லாத தொழிலாளர்
- ☐ அரசு / தனியார் பணியாளர்
- ☐ சுய தொழில் / வாணிகம்
- ☐ வீட்டை நிர்வகிப்பவர்/ இல்லதரசி
- ☐ வேலை இல்லை

9. குடும்பத்தில் வேலை செய்யும் உறுப்பினர்களின் எண்ணிக்கை: _____

10. மாத வருமானம் (ரூபாய்களில்): _____

11. மாத குடும்ப வருமானம் (ரூபாய்களில்): _____

	12. அடிப்படை வசதிகள்	ஆம்	இல்லை
i.	குடிநீர்		
ii.	மின்சாரம்		
iii.	எரிவாயு அடுப்பு		
iv.	சுகாதாரம்/ கழிவறை		
v.	மருத்துவ வசதி		
vi.	சாலைகள்		
vii.	போக்குவரத்து சேவை		
viii.	அங்காடி/ சந்தை		
ix.	கல்வி நிறுவனங்கள்		
x.	நிதி நிறுவனங்கள்		

	13. சொத்துகளின் நிலை	ஆம்	இல்லை
i.	சொந்த வீடு		
ii.	சொந்த நிலம் (விவசாய/ விவசாயம் செய்யாத)		
iii.	கால்நடைகள்		
iv.	தங்க நகைகள்		
v.	வாகனங்கள்		
vi.	வைப்பு நிதிகள்		
vii.	முதலீடுகள்		
viii.	ஆயுள் காப்பீடு		
ix.	ஓய்வூதிய நிதி		
x.	வேறு. குறிப்பிடுக		

பிரிவு - 2 –உடல்நிலைக் குறிப்பு

	14. தடுப்பூசி செலுத்திய நிலை	ஆம்	இல்லை	விருப்பமில்லை
i.	பொது தடுப்பூசி			
ii.	கோவிட் – 19 தடுப்பூசி			
iii.	கோவிட் – 19 தடுப்பூசி செலுத்திக்கொள்வதில் தங்களுக்குப் பயமோ தயக்கமோ உள்ளதா?			

	15. பொது மருத்துவத் தகவல்கள்:	விவரங்கள்
i.	உயரம் (செமீ)	
ii.	எடை (கிலோ)	
iii.	மாற்றுத்திறனாளியா? ஆம் என்றால் விவரங்கள் தருக	
iv.	ஒரு நாளைக்கு எத்தனை மணிநேரம் தூங்குவீர்கள்?	
v.	சைவம் உண்பவரா அல்லது அசைவம் உண்பவரா?	
vi.	ஒரு நாளைக்கு எவ்வளவு தண்ணீர் குடிப்பீர்கள்? (லிட்டர்களில்)	
vii.	ஒரு நாளைக்கு (தோராயமாக) எத்தனை முறை டீ அல்லது காப்பி குடிப்பீர்கள்?	

	16. இணசரி பழக்க வழக்கங்கள்	ஆம்	இல்லை
i.	உடற்பயிற்சி		
ii.	சீரான உணவுமுறை		
iii.	குட்கா/ புகையிலைப் பழக்கம்		
iv.	புகைப்பழக்கம்		
v.	மதுப்பழக்கம்		

	17. பொது மருத்துவ நிலை தகவல்கள் (முறையாக/அடிக்கடி)	ஆம்	இல்லை
i.	காய்ச்சல்		
ii.	சளி/ இருமல்		
iii.	தலைவலி		
iv.	வயிற்றுப்போக்கு		
v.	உடல் வலி		
vi.	மயக்கம்/ தலைச்சுற்றல்		
vii.	மன அழுத்தம்		

	18. தனிப்பட்ட மருத்துவ நிலை தகவல்கள்	ஆம்	இல்லை
i.	உடல் பருமன்		
ii.	இரத்த அழுத்தம்/ உயர் இரத்த அழுத்தம்		
iii.	நீரிழிவு நோய்		
iv.	ஒவ்வாமை		
v.	இரத்தச்சோகை		
vi.	கண்பார்வை பிரச்சனைகள்		
vii.	காது மற்றும் கேட்டல் பிரச்சனைகள்		
viii.	பல் பிரச்சனைகள்		
ix.	மூச்சு பிரச்சனைகள் அல்லது நுரையீரல் கோளாறு		
x.	இதயக் கோளாறு		
xi.	சிறுநீரகக் கோளாறு		
xii.	கல்லீரல் கோளாறு		
xiii.	செரிமான பிரச்சனைகள்		
xiv.	நாளமில்லாச் சுரப்பி கோளாறு (தைராய்டு)		
xv.	தோல் சார்ந்த பிரச்சனைகள்		
xvi.	நரம்புமண்டல கோளாறு		
xvii.	கழிவு மண்டலக் கோளாறு		
xviii.	புற்று நோய்		
xix.	மலட்டுத்தன்மை அல்லது இனப்பெருக்கப் பிரச்சனைகள்		
xx.	மனநல பிரச்சனைகள்		
xxi.	வேறு. குறிப்பிடுக		

	19. மருத்துவ அவசரநிலை அனுபவம்	விவரங்கள்
i.	நீங்கள் மருத்துவ அவசர காலத்தை அனுபவித்துள்ளீர்களா? (ஆம்/இல்லை)	
	ஆம் என்றால், மருத்துவ அவசர கால விவரங்களைக் குறிப்பிடுக. 1. 2. 3. 4. 5.	
ii.	மருத்துவ அவசர காலத்தில் முதலில் யாரைத் தொடர்புகொள்வீர்கள்?	
iii.	மருத்துவ அவசர காலத்தில் மருத்துவமனைக்குச் செல்ல பயன்படுத்தும் போக்குவரத்து முறை?	

	20. 108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்தும் நிலை	விவரங்கள்
i.	ஏதேனும் மருத்துவ அவசர காலத்தில் 108 அவசர மருத்துவ ஊர்தி சேவையைப் பயன்படுத்தியுள்ளீர்களா? (ஆம்/இல்லை)	
	ஆம் என்றால், உங்கள் குடும்பத்தில் எத்தனைப் பேர் 108 அவசர மருத்துவ ஊர்தி சேவையைப் பயன்படுத்தியுள்ளனர் என்பதைக் குறிப்பிடுக.	
	இதுவரை நீங்கள் எத்தனை முறை 108 அவசர மருத்துவ ஊர்தி சேவையைப் பெற்றுள்ளீர்கள்/ பயன்படுத்தியுள்ளீர்கள்?	
	108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பெற்ற/ பயன்படுத்திய குடும்ப உறுப்பினர்களின் மருத்துவ அவசர கால சூழ்நிலை குறித்த விவரங்களைக் குறிப்பிடுக. 1. 2. 3. 4. 5.	
	மருத்துவ அவசர காலங்களில் 108 அவசர மருத்துவ ஊர்தி சேவைகளின் சராசரி பதிலளிக்கும் நேரத்தைக் குறிப்பிடுக (மணிநேரங்கள்/நிமிடங்கள்)	
ii.	108 அவசரகால மருத்துவ ஊர்தி சேவையைப் பயன்படுத்த மருத்துவ உதவியாளர் அல்லது ஓட்டுநர் பணம் கேட்டாரா? (ஆம்/இல்லை)	
iii.	108 அவசர மருத்துவ ஊர்தி சேவையைப் பயன்படுத்த மருத்துவ உதவியாளர் அல்லது ஓட்டுநர் நன்கொடையாகப் பணத்தை எதிர்பார்த்தனரா? (ஆம்/இல்லை)	
iv.	மருத்துவ அவசரநிலையின் போது 108 அவசர மருத்துவ ஊர்தி சேவையைப் பயன்படுத்த யாராவது பரிந்துரைத்துள்ளார்களா? (ஆம்/இல்லை)	
	ஆம் என்றால், பரிந்துரைத்தவர் பற்றிக் குறிப்பிடுக.	
v.	108 அவசர மருத்துவ ஊர்தி சேவை பற்றி உங்களுக்கு எப்படி தெரியும்?	
	ஆம் என்றால், மூலத்தைக் குறிப்பிடுக	

	21. மருத்துவக் காப்பீடு, சுகாதார நிலையம் தேர்வு செய்தல் மற்றும் செல்லுதல்	விவரங்கள்
i.	உங்களிடம் முதலமைச்சரின் விரிவான மருத்துவக் காப்பீட்டுத் திட்டம் தவிர வேறு ஏதேனும் மருத்துவக் காப்பீட்டுத் திட்டம் உள்ளதா? (ஆம்/இல்லை)	
	ஆம் என்றால் குறிப்பிடுக. காப்பீட்டு நிறுவனத்தின் பெயர்	
	ஆண்டுக்கான ப்ரீமியம்/சந்தாத்தொகை	
	காப்பீடுத்தொகை	
	மருத்துவக் காப்பீட்டின் கீழ் உள்ள நபர்களின் எண்ணிக்கை	

ii.	உங்களுக்குக் குடும்ப மருத்துவர் உள்ளாரா? (ஆம்/இல்லை)	
	ஆம் என்றால், குறிப்பிடுக	
iii.	அருகிலுள்ள சுகாதார நிலையம், குறிப்பிடுக.	
iv.	விரும்பமான மருத்துவமனை எது? (அரசு/தனியார்)	
v.	ஓர் ஆண்டில் எத்தனை முறை மருத்துவரைச் சந்திப்பீர்கள்?	
vi.	ஓர் ஆண்டில் எத்தனை முறை மருந்தகத்திற்குச் செல்வீர்கள்?	
vii.	ஓர் ஆண்டில் எத்தனை முறை உடல் பரிசோதனை மையம்/ ஆய்வகத்திற்குச் செல்வீர்கள்?	

22. தங்குமிடத்திலிருந்து பயணிக்கும் தூரம் (கி.மீ.)		விவரங்கள்
i.	அருகிலுள்ள அரசு ஆரம்ப சுகாதார நிலையம் எவ்வளவு தூரம்?	
ii.	அருகிலுள்ள தனியார் மருத்துவகம் எவ்வளவு தூரம்?	
iii.	அருகிலுள்ள அரசு பொது மருத்துவமனை எவ்வளவு தூரம்?	
iv.	அருகிலுள்ள தனியார் மருத்துவமனை எவ்வளவு தூரம்?	
v.	அருகிலுள்ள உடல் பரிசோதனை மையம்/ ஆய்வகம் எவ்வளவு தூரம்?	
vi.	அருகிலுள்ள மருந்தகம் எவ்வளவு தூரம்?	

பிரிவு – 3 – 108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்துவதில் உள்ள சிக்கல்கள் (காரணிகள் குறித்த எண்ணங்கள்)

(பொருத்தமான பதிலுக்கு (✓) குறி இடவும்)

(உறுதியாக ஏற்கிறேன் - உ.ஏ. ஏற்கிறேன் - ஏ ஏற்பும்மில்லை மறுப்புமில்லை – ஏ.ம. மறுக்கிறேன் - ம உறுதியாக மறுக்கிறேன் - உ.ம.)

விழிப்புணர்வு	உ.ஏ.	ஏ	ஏ.ம.	ம	உ.ம.
108 அவசர மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்துவது குறித்த போதிய விழிப்புணர்வு இல்லை					
மருத்துவ அவசர காலத்தில் 108 சேவை எவ்வாறு அழைத்து அணுக வேண்டும் என தெரியவில்லை					
மருத்துவ ஊர்தியால் வழங்கப்படும் மருத்துவ சேவை வகைகளைப் பற்றிய அறிவின்மை					
மருத்துவ சேவை	**உ.ஏ.**	**ஏ**	**ஏ.ம.**	**ம**	**உ.ம.**
108 அவசர மருத்துவ ஊர்திகள் குறைந்த அளவிலேயே மருத்துவ சேவைகளை வழங்குகின்றன					
108 மருத்துவ ஊர்திகளில் உள்ள மருத்துவ உதவியாளர் வழங்கும் மருத்துவ சேவைகள் மருத்துவருக்கு இணையாக இல்லை					
108 அவசர ஊர்திகள் மருத்துவ அவசரமில்லா சூழல்களில் சேவைகளை வழங்குவதில்லை					
நடத்தை	**உ.ஏ.**	**ஏ**	**ஏ.ம.**	**ம**	**உ.ம.**
108 மருத்துவ ஊர்திகளில் உள்ள மருத்துவ உதவியாளர்கள் அன்பாக, துணையாக, உதவிகரமாக இல்லை					
அவசர ஊர்தி ஓட்டுநர்கள் நோயாளிகள் மற்றும் அவர்களுக்குத் துணையாக வருபவர்களிடம் நட்பாக இருப்பதில்லை					
மருத்துவ அவசர காலங்களில் 108 மருத்துவ ஊர்தி தொடர்பு மையம் முறையாகப் பதிலளிக்கும் வகையில் இல்லை					

பயன்பாடு	உ.எ.	எ	எ.ம.	ம	உ.ம.
மருத்துவ அவசர காலத்தில் 108 மருத்துவ ஊர்திகள் பயனுள்ளதாகவோ உதவிகரமாகவோ இல்லை					
கிராம மக்கள் மருத்துவ அவசர காலத்தில் 108 மருத்துவ ஊர்தி சேவைகளைப் பயன்படுத்துவதற்கு முன்னுரிமை அளிப்பதில்லை					
எல்லா மருத்துவ அவசர காலங்களுக்கும் பொருத்தமானதாக 108 மருத்துவ ஊர்திகள் இல்லை					
இடம்	உ.எ.	எ	எ.ம.	ம	உ.ம.
கிராமப்புறங்களில் 108 மருத்துவ ஊர்திகள் குறைந்த அளவில் இருக்கிறது					
மருத்துவ அவசர காலத்தில் 108 மருத்துவ ஊர்திகள் எள் இருப்பிடத்தை அடைய முறையான சாலைகள் இல்லை					
எள் இருப்பிடத்தில் இருந்து 108 ஊர்தியைப் பெற நீண்ட நேரமாகிறது					
அணுகல்	உ.எ.	எ	எ.ம.	ம	உ.ம.
மருத்துவ அவசர காலத்தில் 108 மருத்துவ ஊர்திகளை அணுக முடியவில்லை					
108 மருத்துவ ஊர்திகள் அவசர மருத்துவ சேவைகளை வழங்க கிராமப்புறங்களுக்கு வருவதற்கு சிரமமாக உள்ளது					
மருத்துவ அவசர காலத்தில் 108 அவசர மருத்துவ ஊர்திகளை விட தனியார் மருத்துவ ஊர்திகளை அணுகுவது எளிதாக உள்ளது					
இணைப்பு	உ.எ.	எ	எ.ம.	ம	உ.ம.
மோசமான தொலைத்தொடர்பு வசதிகளால் மருத்துவ அவசர காலத்தில் 108 அழைப்பு மையங்களைத் தொடர்பு கொள்ள முடியவில்லை					
மோசமான தொலைத்தொடர்பு காரணங்களால் 108 மருத்துவ ஊர்திகள் நோயாளிகளின் அழைப்புகளுக்குப் பதிலளிக்கச் சிரமப்படுகின்றன					
மருத்துவமனைகள் மற்றும் 108 மருத்துவ ஊர்தி இடையே முறையான தொடர்பு இல்லாததால், நோயாளிகள் மருத்துவமனையில் சேர்வது குறித்து முடிவெடுக்க சிக்கலாக உள்ளது.					
வசதி	உ.எ.	எ	எ.ம.	ம	உ.ம.
கிராமப்புறங்களில் 108 மருத்துவ ஊர்தியை மருத்துவ அவசர காலங்களில் பயன்படுத்த வசதியாக இல்லை					
மருத்துவ அவசர காலத்தில் 108 அழைப்பு மையங்களைப் பயன்படுத்துவது சிரமமாக உள்ளது					
அனைத்து வகையான மருத்துவ அவசர காலங்களிலும் பயன்படுத்த ஏற்றவாறு 108 மருத்துவ ஊர்திகளில் வசதிகள் இல்லை					
அவசர நிலை	உ.எ.	எ	எ.ம.	ம	உ.ம.
மருத்துவ அவசர காலங்களில் கிராமப்புறங்களில் உள்ள நோயாளிகளை அடைய 108 மருத்துவ ஊர்திகள் நீண்ட நேரம் எடுக்கிறது					
மருத்துவ அவசர காலங்களில் 108 மருத்துவ ஊர்தி சேவையை அணுகாமல் உள்ளூர் சிகிச்சை முறைகளைச் சார்ந்திருப்பது					
அவசர மற்றும் அவசரமில்லா மருத்துவ நிலையை வேறுபடுத்துவதற்கான அறிவின்மை					

பிரிவு – 4 - 108 அவசர மருத்துவ ஊர்தி சேவைகளில் கிராமப்புற மக்களின் தேவைகள்
(பொருத்தமான பதிலுக்கு (✓) குறி இடவும்)

(உறுதியாக ஏற்கிறேன் - உ.எ. ஏற்கிறேன் - எ ஏற்புமில்லை மறுப்புமில்லை – எ.ம. மறுக்கிறேன் - ம உறுதியாக மறுக்கிறேன் - உ.ம.)

கவனிப்பு	உ.ஏ.	ஏ	ஏ.ம	ம	உ.ம
108 மருத்துவ ஊர்தி அனைத்து வகையான மருத்துவ அவசரநிலைகளையும் கையாள வேண்டும்					
மருத்துவ உதவியாளர்கள் நோயாளிகளுக்கு மருத்துவர்களுக்கு இணையான அளவு சிறந்த சிகிச்சை அளிக்க வேண்டும்					
மருத்துவ அவசர சூழ்நிலையை நோயாளியும் அவருக்குத் துணையாக வருவோரும் முறையாகக் கையாள மருத்துவ உதவியாளர் மற்றும் ஓட்டுநர் உறுதுணையாக இருக்க வேண்டும்					
ஆலோசனை	உ.ஏ.	ஏ	ஏ.ம	ம	உ.ம
108 மருத்துவ ஊர்திக்காக காத்திருக்கும் அவசர மருத்துவத் தேவை நோயாளிக்குத் தொலைப்பேசி வாயிலாக மருத்துவ ஆலோசனை வழங்கப்பட வேண்டும்.					
அவசர மருத்துவத் தேவை நோயாளிகளுக்கு 108 மருத்துவ ஊர்திகளிலேயே நேரடி காணொளிக் காட்சி மூலம் மருத்துவர்களிடம் ஆலோசனை வழங்க ஏற்பாடு செய்யலாம்.					
மருத்துவ அவசரநிலை காரணமாக ஏற்பட்ட அதிர்ச்சியைச் சமாளிக்க நோயாளிகளுக்கும் அவர்களுக்குத் துணையாக வருபவர்களுக்கும் ஆலோசனை சேவைகளை 108 மருத்துவ ஊர்திகளிலேயே விரிவுபடுத்தி வழங்கலாம்.					
அர்ப்பணிப்பு	உ.ஏ.	ஏ	ஏ.ம	ம	உ.ம
அவசர மருத்துவத் தேவையில் இருக்கும் நோயாளியை மருத்துவமனையில் அனுமதிக்கும் வரை மருத்துவ உதவியாளரும் ஓட்டுநரும் அவருக்கு உறுதுணையாக இருக்க வேண்டும்.					
தற்போது அனுமதிக்கப்பட்டுள்ள மருத்துவமனையில் மருத்துவ அவசரநிலையைக் கையாள்வதற்கு உரிய மருத்துவ வசதிகள் இல்லாத சூழலில் நோயாளியை வேறு மருத்துவமனைகளுக்குக் கொண்டு செல்வதற்கு 108 மருத்துவ ஊர்தி சேவை உதவ வேண்டும்.					
நோயாளியின் உடல்நிலையை மருத்துவமனையில் அனுமதிக்கப்பட்ட பிறகும் 108 மருத்துவ ஊர்தி அழைப்பு மையங்கள் தொடர்ந்து அறிய வேண்டும்.					
செயல் எல்லை	உ.ஏ.	ஏ	ஏ.ம	ம	உ.ம
108 அவசர மருத்துவ ஊர்தி சேவைகளை அனைத்து கிராமப்புறங்களுக்கும் விரிவுபடுத்த வேண்டும்					
மருத்துவ அவசர காலத்தில் 108 மருத்துவ ஊர்தி சேவையை அணுகுவதற்கு கிராமப்புறங்களில் தொலைத்தொடர்பு சேவையை மேம்படுத்த வேண்டும்					
கிராமப்புற மக்களுக்கு சிறப்பாகச் சேவை செய்ய 108 மருத்துவ ஊர்தியில் அத்தியாவசிய மருத்துவ உபகரணங்கள் சேர்க்கப்பட வேண்டும்					
கட்டுப்பாடு	உ.ஏ.	ஏ	ஏ.ம	ம	உ.ம
மருத்துவ அவசர காலத்தில் கிராமப்புற மக்களுக்கு சேவை செய்ய 108 மருத்துவ ஊர்திகளில் இடங்காண் தொழில்நுட்பத்தை மேம்படுத்த வேண்டும்					
108 மருத்துவ ஊர்திகளை முறையான தொடர் மதிப்பீடும் பராமரிப்பு சோதனையும் செய்து தரமான மருத்துவ சேவையை உறுதி செய்ய வேண்டும்					
மருத்துவ அவசர காலத்தின் போது சிறந்த சேவையை வழங்க 108 மருத்துவ ஊர்திகளில் ஒரு பின்னூட்டம் அளிக்கும் மற்றும் குறை தீர்க்கும் அமைப்பை இணைக்க வேண்டும்					

பிரிவு – 5 – பரிந்துரைகள் (ஏதேனும் இருந்தால்)

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ANNEXURE - III

INTERVIEW SCHEDULE OUTLINE - 108 AMBULANCE PILOTS AND EMERGENCY MEDICAL TECHNICIANS

INTERVIEW SCHEDULE OUTLINE

108 AMBULANCE - PILOTS

Challenges of Rural People in Effective Utilisation of 108 Emergency Ambulance Services in Tamil Nadu – An Empirical Study

INTERVIEW SCHEDULE FOR 108 AMBULANCE PILOTS	**Details**
Name:	
Age:	
Educational Qualification:	
Job Designation:	
Work Experience:	
Workplace Coverage:	
Type of Ambulance:	
Average Cases Per Month:	
Average Cases Per Day:	
Average Response Time (In Minutes):	
Least Response Time (In Minutes):	
Highest Response Time (In Minutes):	
Success rate:	
Regular Medical Emergency Cases:	
Average Distance Covered Per Day (In Kms):	
Condition of the Vehicle: (Rate in 5 Point Scale)	
Age of the Vehicle:	
Fuel Consumption:	
Challenges in Attending Medical Emergency in Rural Areas:	
Ambulance:	
Medical Attendants:	
Cases:	
Hospitals:	
Location:	
Any other:	
Expectations:	
Most Challenging Case:	
Comments & Suggestions:	

INTERVIEW SCHEDULE OUTLINE

108 AMBULANCE - EMERGENCY MEDICAL TECHNICIANS

Challenges of Rural People in Effective Utilisation of 108 Emergency Ambulance Services in Tamil Nadu – An Empirical Study

INTERVIEW SCHEDULE FOR MEDICAL ATTENDANTS	**Details**
Name:	
Age:	
Educational Qualification:	
Job Designation:	
Work Experience:	
Workplace Coverage:	
Type of Ambulance:	
Average Cases Per Month:	
Average Cases Per Day/Shift:	
Average Response Time (In Minutes):	
Success rate:	
Regular Medical Emergency Cases:	
Medical Services Provided at Ambulance:	
Quality of Training in Handling Emergency Cases: (Rate in 5 Point Scale)	
Level of Confidence in Handling Emergency Cases: (Rate in 5 Point Scale)	
Availability of Medical Drugs and Other Requirements in the Ambulance: (Rate in 5 Point Scale)	
Availability of Medical Equipment: (Rate in 5 Point Scale)	
Condition of the Medical Equipment: (Rate in 5 Point Scale)	
When Doctor Intervention is Required:	
Challenges in Attending Medical Emergency in Rural Areas:	
Ambulance:	
Drivers:	
Cases:	
Hospitals:	
Location:	
Overall:	
Expectations:	
Most Challenging Case:	
Comments & Suggestions:	

ANNEXURE - IV

DESCRIPTIVE STATISTICS ON THE CHALLENGES AND NEEDS OF RURAL PEOPLE IN USING 108 EMERGENCY AMBULANCE SERVICES

DESCRIPTIVE STATISTICS ON THE CHALLENGES OF RURAL PEOPLE IN USING 108 EMERGENCY AMBULANCE SERVICES

Table: A4.1

AWARENESS	N	Mean	S.D.
Lack of awareness on the usage of 108 emergency ambulance services	370	1.6027	1.21486
Don't know how to call and approach 108 services during a medical emergency	370	2.0865	0.88840
Lack of knowledge about the types of medical service provided by 108 ambulances	370	2.2811	1.43775

Source: Computed Data

Table: A4.2

MEDICAL SERVICE	N	Mean	S.D.
108 emergency ambulances provide limited medical services only	370	1.9216	1.36817
Medical services rendered by the attendant at 108 ambulances is not equivalent to the services of a doctor.	370	3.3378	1.23934
108 emergency ambulances do not provide services for non-emergency medical conditions	370	3.9486	1.24289

Source: Computed Data

Table: A4.3

BEHAVIOUR	N	Mean	S.D.
The medical attendants at 108 ambulances are not caring, supportive and helpful	370	1.3432	0.62341
The 108 ambulance drivers are not amicable with patients and their attenders	370	1.7865	0.53123
The 108 ambulance call centres are not responsive during medical emergencies	370	1.5270	0.64650

Source: Computed Data

Table: A4.4

UTILITY	N	Mean	S.D.
108 ambulances are not useful and helpful during a medical emergency	370	1.3054	0.73342
Rural people do not prioritise to utilise the 108 emergency ambulance services during a medical emergency	370	2.7811	1.46251
108 ambulances are not suitable for all medical emergencies	370	2.0351	1.10253

Source: Computed Data

Table: A4.5

LOCATION	N	Mean	S.D.
Limited availability of 108 ambulances in rural areas	370	2.4946	1.64991
Lack of proper roads to connect my location by 108 ambulances during a medical emergency	370	2.5054	1.42042
Reaching a 108 ambulance is time-consuming from my location	370	2.3108	1.50452

Source: Computed Data

Table: A4.6

ACCESS	N	Mean	S.D.
Lack of access to 108 ambulances during a medical emergency	370	1.9973	1.39783
108 ambulances find it difficult to access rural areas to provide emergency medical services.	370	2.3027	1.27313
Access to a private ambulance is easier than 108 emergency ambulance during a medical emergency	370	3.1027	1.66105

Source: Computed Data

Table: A4.7

NETWORK	N	Mean	S.D.
Poor network connectivity to reach 108 call centres during a medical emergency	370	1.5405	1.08687
108 ambulances find it difficult to connect to patient calls due to poor network	370	1.9730	0.85497
Lack of networking between hospitals and 108 ambulances make it challenging to patients to decide on hospital admissions	370	1.9703	1.16250

Source: Computed Data

Table: A4.8

CONVENIENCE	N	Mean	S.D.
108 ambulances are not convenient to use during a medical emergency in rural areas	370	1.7432	1.21487
Difficulty to use 108 call centres during a medical emergency	370	2.0622	0.98714
108 ambulances are not equipped for all types of medical emergencies	370	1.9946	1.26447

Source: Computed Data

Table: A4.9

EMERGENCY	N	Mean	S.D.
During medical emergencies 108 ambulances take long time to attend the patients in rural areas	370	1.8649	1.38051
Depending on local/indigenous methods of treatment during medical emergencies without reaching to108 ambulance services	370	3.4027	1.42851
Lack of knowledge to differentiate between emergency and non-emergency medical condition	370	2.9568	1.61908

Source: Computed Data

DESCRIPTIVE STATISTICS ON THE NEEDS OF RURAL PEOPLE IN 108 EMERGENCY AMBULANCE SERVICES

Table: A4.10

CARE	N	Mean	S.D.
108 ambulances must handle all types of medical emergencies	370	4.9081	0.28926
The medical attendants should provide better care for the patients on par with the doctors	370	4.5351	0.49944
The medical attendant and the driver should be supportive to the patient and their attenders to handle a medical emergency situation	370	4.4919	0.50061

Source: Computed Data

Table: A4.11

CONSULTATION	N	Mean	S.D.
Tele-medical consultation should be provided to the patient experiencing a medical emergency while waiting for a 108 ambulance	370	4.4135	0.49860
Arrangement for a live video consultation with doctors in the 108 ambulances, after the patient is picked up for a medical emergency can be implemented.	370	4.5568	0.50286
Counselling services can be extended to the patients and their attenders in the 108 ambulances to manage their trauma due to the medical emergencies.	370	4.6054	0.49493

Source: Computed Data

Table: A4.12

COMMITMENT	N	Mean	S.D.
The medical attendant and the driver should support the patient until admission during a medical emergency.	370	4.2784	0.46657
The 108 ambulance services should assist the patient for further transportation to other hospitals if there is a lack of appropriate medical facilities to handle a medical emergency at the currently admitted hospital	370	4.5784	0.49449
The 108 ambulance call centres should follow up on the status of the patient's health condition after hospital admission.	370	4.5919	0.49762

Source: Computed Data

Table: A4.13

COVERAGE	N	Mean	S.D.
The 108 emergency ambulance services should be extended to all the rural areas	370	4.3162	0.47141
The network connectivity should be made better in rural areas to access the 108 ambulance services during a medical emergency	370	4.6324	0.48280
Necessary medical equipment should be included in the 108 ambulance to serve rural people better	370	4.6054	0.49493

Source: Computed Data

Table: A4.14

CONTROL	N	Mean	S.D.
The 108 ambulances should ensure better location tracking technology to serve rural people during a medical emergency	370	4.3000	0.46475
Periodical evaluation and maintenance check of 108 ambulances are required to ensure quality medical service	370	4.7108	0.45993
108 ambulances should incorporate a feedback and grievance redressal system to provide better service during a medical emergency	370	4.7054	0.45648

Source: Computed Data

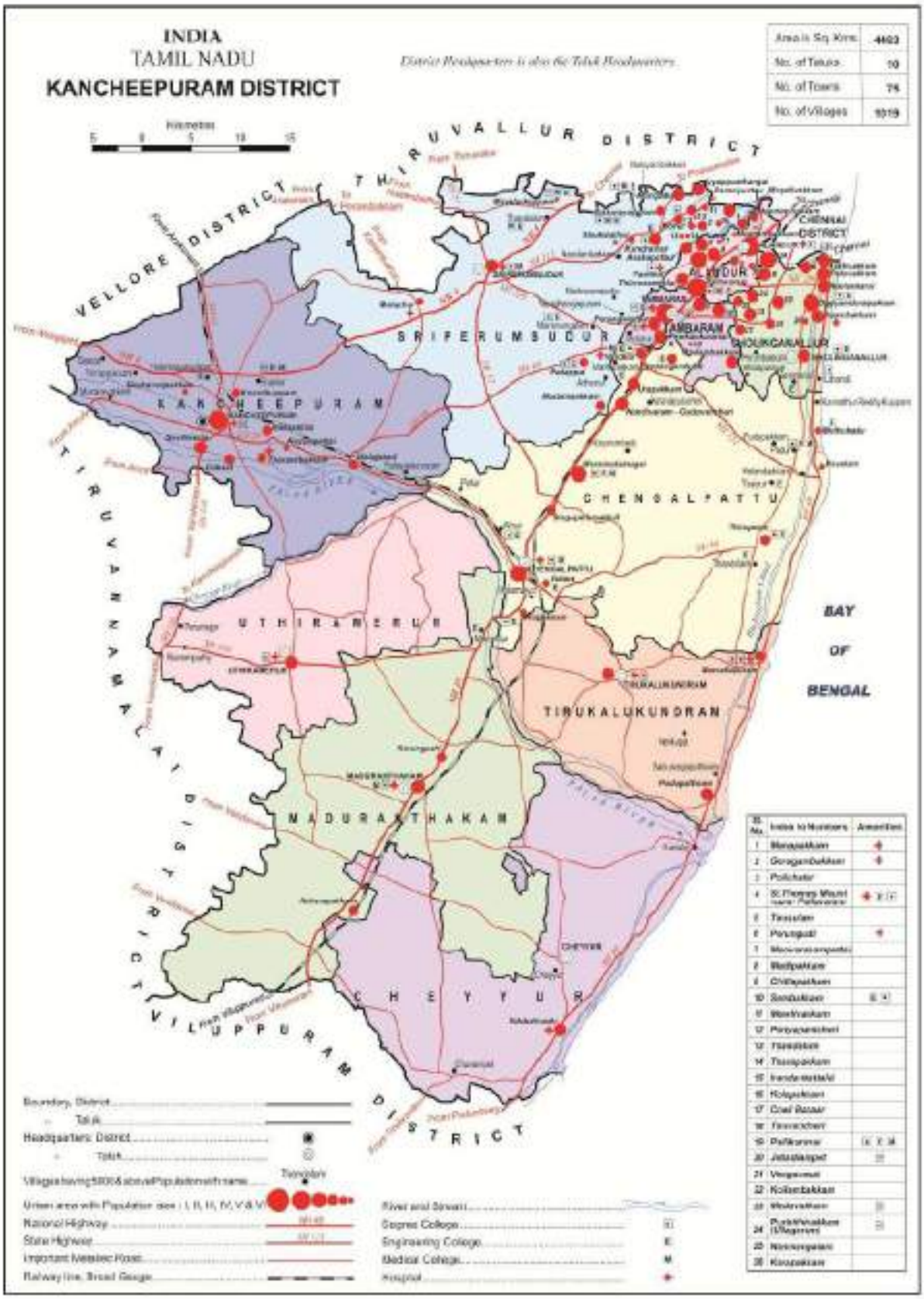
ANNEXURE - V

MAPS OF TAMIL NADU AND KANCHEEPURAM DISTRICT

Figure A5.1

Source: Census of India, 2011.

Figure A5.2



Source: Census of India, 2011.