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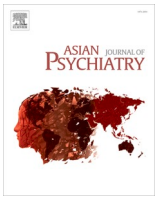

The role of 108 GVK EMRI ambulance services in the management of behavioral emergencies in the state of Telangana

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ABSTRACT

Mental health is a major public health issue that calls for immediate steps by individuals and societies around the globe. Talking about mental health issues has always been considered a taboo, especially in lower-middle income countries. This paper assesses the role of GVK Emergency Management Research Institute (GVK EMRI) 108 Ambulance Services in the management of behavioral emergencies in the state of Telangana, India. Primary data collection was carried out in Devaryamjal village of Medchal District with people from both rural and urban setting. The use of management services for behavioral emergencies are described, and knowledge attitude and practices in communities regarding the use of these services are identified. The impact of the Covid-19 pandemic on the mental health of individuals is considered as well, and recommendations to strengthen 108 services for managing behavioral emergencies are suggested. As GVK EMRI is a first responder organization, understanding its role in the field of behavioral emergencies can fundamentally impact several lives. Findings indicate that mental health problems exist in communities, but individuals are reluctant to seek help. People from the urban setting were more open to talk about the topic. The awareness of 108 as an emergency response service was immaculate and a positive view was held about the services and the organization.

1. Introduction

Health encompasses not only physical well-being, but mental well-being as well. A mental illness can be defined as a health condition that changes a person's thinking, feelings, or behavior (or all three) and causes distress and difficulty in functioning (American Psychiatric Association, 2018). According to research by The World Health Organization (2001), around 450 million people currently suffer from such conditions, placing mental disorders among the leading causes of ill-health and disability worldwide. The burden of mental illnesses continues to grow with significant impact on health, major social and human rights, and economic consequences in all countries of the world. It is evident that psychiatric illnesses are often disabling, and expressed in the substantially higher proportion of the overall burden caused by mental illnesses (World Health Organization, 2001). About 80% of people with mental illnesses live in low-income nations, and account for more than 10% of the total burden of disease in those nations (World Health Organization, 2019a).

According to research from Ferrari et al. (2013) among the several causes of years lived with disabilities (YLD), depression is the second leading cause. Anxiety disorders, schizophrenia, bipolar disorders, prescription drug overuse, substance abuse, Alzheimer's disease, alcohol use disorders, and epilepsy are global neuropsychiatric causes of YLD. Additionally, the World Health Organization (WHO) estimates that 7.4% of global disability-adjusted life years (DALY) contribute to each disorder within the mental and behavioral disorder category. Suicide is a major cause for concern worldwide, and the general manifestations of acute behavioral emergencies include suicide attempts, consumption of poisons – such as organophosphate – and burns. In research from the World Health Organization (2021), over 700,000 people die annually from suicide, and there is a staggering one death per 40 s (World Health Organization, 2019a).

The Public Private Partnership GVK Emergency Management Research Institute (GVK EMRI) is the largest emergency response service globally (GVK Emergency Management Research Institute, 2021). Established in 2005, it promptly responds to millions of emergencies of all sorts. The non-profit organization reaches a population of 750 million across 15 states and 2 union territories in India. This model of emergency response services was also replicated in Sri Lanka. It attends to all crisis situations – medical emergency, law and order situation or a fire

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breach – and provides reliable and swift services.

1.1. Background

In research from (World Health Organization, 2019a, 2019b) India has the highest suicide rate in South-East Asia. While disorders like depression and anxiety are becoming more accepted by the public, schizophrenia, personality disorders and psychosis are still poorly understood (Rice-Oxley, 2019). It is important to note that untreated mental illnesses also cause suicide mortality (Carroll, 2018). According to the National Survey of Mental Health Resources carried out by the Directorate General of Health Services between May-July 2002, against the required 11,500 psychiatrists in the country, only 3800 exist (Government of India Ministry of Health and Family Welfare, 2013).

A report from the Deccan Chronicle (2019) highlights that professionals from the Indian Psychiatric Association say that Telangana is experiencing a massive shortage of mental health professionals with merely one hospital and 200 doctors to tend to its population of 3.5 crores. A prospective research study's results show that doctors in Hyderabad often hold a negative attitude towards individuals with psychiatric conditions (Challapallisri and Dempster, 2015). These attitudes have varied across mental disorders. Nevertheless, it was clear that not all mental illnesses were deemed stigmatizing by healthcare professionals in Hyderabad. Female practitioners held major stigmatizing views of individuals with eating disorders compared to male physicians. A few key pointers reported by WHO (World Health Organization, 2020a, 2020b) further showcase the severity of mental health issues:

- Mental health conditions account for 16% of the global burden of disease and injury in people aged 10–19 years.
- Globally, depression is one of the leading causes of illness and disability among adolescents.
- Suicide is the fourth leading cause of death in 15–19-year-olds.
- The consequences of not addressing adolescent mental health conditions extend to adulthood, impairing both physical and mental health and limiting opportunities to lead fulfilling lives as adults.

1.2. The importance of emergency response services in behavioral emergencies in India

Behavioral emergencies are an essential component of mental health, an overlooked field of clinical and public health care primarily due to the stigma attached to it. Behavioral emergencies in India surface as an extreme challenge for emergency response providers due to the rapid growth of multiple psychiatric conditions. A report from the Deccan Chronicle on the number of mental health doctors in Hyderabad states that psychiatrists claim that over the past 16 years, the number of psychiatric patients in India has increased threefold (K, 2019).

The GVK EMRI organization was launched with the aim of delivering comprehensive, swift, reliable, and quality emergency care services. This service has approximately touched 100 million lives, saved over 3.2 million lives; it touches 40,000 lives every day, and on average saves 668 lives per day. 108 emergency response service is holistic and attends to behavioral emergencies. The fundamental operational principles of Sense, Reach and Care allows for timely response to emergencies.

- **Sense:** Emergency victim/attendant dial 108/102. Emergency Response Officer' Screen helps facilitate and scope emergency, assign strategically located ambulances (Ambulance/ Police/ Fire).
- **Reach:** Ambulance(s) to reach the site/scene.
- **Care:** Emergency Medical Technician (EMT) to provide passionate pre-hospital care while transporting patient/victim to the appropriate hospital for stabilization. Emergency Response Centre Physician (ERCP) advises patient care with the support of ERO, EMT to ensure optimal pre-hospital care. Since GVK EMRI is a first responder organization, understanding their role in the field of behavioral emergencies can crucially change several lives.

1.3. Objectives

The goal of this paper is to assess the role of GVK EMRI 108 Ambulance Services in the management of behavioral emergencies in the state of Telangana, India. Furthermore, the findings of this study can also be used to implement practical changes which can improve the management of behavioral emergencies across the country. The paper aims to achieve the following objectives:

- To describe the utilization of GVK EMRI 108 services for behavioral emergencies in the state of Telangana.
- To identify the Knowledge Attitudes and Practices (KAP) in communities in use of GVK EMRI's 108 services for behavioral emergencies.
- To recommend ways to strengthen 108 services in the management of behavioral emergencies.

With the rise in cases of the coronavirus and emergence of Covid-19 as a global pandemic, this paper also aims:

- To understand the impact of the Covid-19 pandemic on the mental health of individuals in communities.

There is limited literature available regarding mental health and behavioral emergencies in India. The results of this study can be used for the purpose of future research on the same topic; optimistically, this will pave the way to strengthen management across all facets of behavioral emergencies.

2. Materials and methods

This research was conducted in a mixed method format, combining methods of both a qualitative study and a quantitative study. This method of research was chosen in order to gain additional insights from the findings, which could otherwise not have been achieved with solely qualitative or quantitative methods of study. A retrospective study was conducted to describe the utilization of GVK EMRI 108 ambulance services in behavioral emergencies in the state of Telangana for the year 2017. The number of calls received specifically for behavioral emergencies were identified and categorized according to critical demographic variables.

Following this, a cross sectional study with emphasis on knowledge, attitudes and practices (KAP) of communities was carried out. To assess this, a questionnaire of 62 questions and 7 sections – informed consent, demographics, introduction to mental health issues, community and family data, individual data, Covid-19 related questions, and 108 ambulatory services satisfactory levels – was formulated. The questionnaire was administered to 60 individuals (30 from a rural setting and 30 from an urban setting). For the rural setting, the questionnaire was translated into Telugu (the vernacular language of the region) to make the administering process easier. Informed consent was taken from all the participants administering that they could refrain from answering any question at any point. The objectives of the study, nature of the research, their rights, and handling of the data were profoundly explained to all participants. The data of the participants has been dealt with confidentially.

In addition, a qualitative research method of administering interviews and focused group discussions was held to seek pointers for strengthening 108 services. The responses and interviewer observations were noted in a Google Forms document and later converted to Microsoft Excel format. Triangulation was exercised to increase the credibility and validity of the results. This helped in producing innovative ways to comprehend the phenomenon, disclose unique observations, challenges, and incorporate theories whilst providing a clearer view of the problem.

2.1. Data collection method

For primary collection of data, Medchal district of Telangana was identified as the area of interest. A total of 28 villages were initially identified for the study, and the village of Devaryamjal (for the rural setting) was selected based on distance, population, demographic and number of houses. This information was gathered from the official Government website of Medchal, Malkajgiri (Government of Telangana, 2017). Devaryamjal village is situated about 5.4 km from the GVK EMRI campus. Due to the constraints following the imposition of COVID-19 lockdowns, the study was conducted at the EMRI campus and participants were offered transport services. The urban interviews were administered either in person at Suchitra Academy (mutually convenient study location), or over the phone, or directly sending the survey link. Necessary COVID precautions were taken. Interviewers and respondents wore masks, maintained social distancing, and regularly sanitized the study instruments.

Prior to administering the questionnaire, a pilot test was conducted at the GVK EMRI campus. Further changes were made to the questionnaire based on the results of the pilot test to improve validity. A transect walk was done to get a better understanding of the village and overall quality of life in the village. Fig. 1. shows a few photographs taken during the transect walk. Figure a shows a grocery store in the village, Figure b shows a shop in the village where two girls and a boy are seen purchasing clothes and eggs, Figure c shows two men sitting under a tree in front of the houses in the village and Figure d shows the different types of houses in the village.

2.2. Data analysis method

The data obtained from the questionnaire was noted, analyzed and categorized for variables in addition with KAP and in relation to GVK EMRI 108 Behavioral Emergencies. The collected data was cleaned and sorted for it to be error free. Duplicate records, faults and misinterpretations were addressed and rectified. The cross-sectional data was analyzed using appropriate statistical methodologies. The software Jamovi, along with Microsoft Excel was used to help interpret the results and derive conclusions. Microsoft Excel was used for data cleaning purposes and Jamovi was used for creating graphs and tables. All data is expressed in words, with the help of graphs, tables, and figures. The results have been triangulated and integrated in order to measure and interpret the key findings. The focused group discussion (FGD) was expected to give indicators to strengthen GVK EMRI 108 emergency response services.

3. Results and discussion

The results of the retrospective study indicate that a mere 13% of the 132,155 calls received to 108 were related to behavioral emergencies. Of this percentage, only 0.1% of individuals called specifically for behavioral emergencies. Table 1 presents the results of the study.

The results of the qualitative study based on specific questions from the questionnaire show recurrent themes of stigmatization towards mental health related problems and behavioral emergencies. Of the 60 participants, 24 individuals reported having no knowledge about mental health problem (7 from and urban setting and 17 from the rural setting). This indicates that individuals from the urban setting were more aware of the problem at hand. Table 2 shows the findings of the study.

When asked about opinions towards mental health related problems, most people displayed a negative view. Individuals presented different responses showing that they were not confined with their responses and had multiple views to this question. It was also noted that most individuals from the rural setting were uncomfortable with this question. The same was not true for the urban setting, as predicted, due to higher educational qualifications and knowledge about such problems, therefore, the sense of uneasiness when this question was asked was visibly lower. Table 3 displays the frequencies of responses when asked about mental health illnesses.

Fig. 1. Images captured while taking a transect walk in the village. (a) A grocery store in the village. (b) A shop in the village where two girls and a boy are seen purchasing clothes and eggs. (c) Two men seen sitting under a tree. (d) The types of houses in the village.

Table 1
A tabulated report of call classification from the 2017 retrospective study.

Mental Health Project-Primary Objective-108 data 2017-Tables from Telangana		
Year 2017	**Count**	**Percentage share (%)**
Total 108 Availed/used	132,155	100%
Total Admitted to Hospital	116,920	88%
Total Admitted Cases Under Behavioral/Mental Health	15,174	13%
Mental health related emergencies reported to 108 in 2017		
Call Types	**Count**	**Percent (%)**
Emergency Call	12,526	83%
Inter Facility Transfer	2648	17%
Grand Total	15,174	100%
Type of Emergency	**Count**	**Percent (%)**
Poisoning	790	5.20%
Behavioral	11	0.10%
Fire/Burns	299	2.00%
Suicide Attempt (all types)	14,074	92.80%
Grand Total	15,174	100.00%

Table 2
The responses of participants to the question: are you aware of mental health problems?.

Levels	Counts	% of Total	Cumulative %
Do not know	1	1.7%	1.7%
No	23	38.3%	40.0%
Yes	36	60.0%	100.0%

When asked if people suffering from mental health problems were dangerous, a total of 51.7% agreed with it, accounting to 31 individuals. 48.3% of individuals saying those who suffered from mental health problems were not dangerous, accounts for a total count of 29 individuals, majority from the urban setting. This shows a lack of knowledge regarding these problems. However, even despite the lack of knowledge, 51 participants (85%) said that it can be treated or sometimes treated. Only 5% said no and 10% were unsure or reported saying it depended on the situation. Fig. 2 presents these findings.

A majority of participants (85.7%) believed that either seeing a mental health practitioner or resorting to religious methods was the ideal mode of treatment, combined with other modes of treatment. Several options were presented, and most individuals chose a combination of these responses. A number of different responses were noted with emphasis on the ideal mode of treatment being faith healers, religious practices, and consulting health practitioners. Interestingly, even counseling was said to be an ideal mode of treatment by many participants. The responses are listed in Table 4 below.

When asked if individuals from their communities suffered from mental health related problems, 28.3% said yes; 70.5% accounting for the rural sample. However, when asked about further details, most refrained from going in depth and stated that they preferred not to get involved. Fig. 3 shows the responses of participants when asked if they noticed anyone from the community being a threat. The findings indicate that despite lack of profound knowledge, a large majority chose to refrain from using violence.

When it came to family or people they knew, however, the responses were strikingly different with a major drop in number of people calling the police and no individuals indicating that they would not engage if it were a family member. A natural prejudice is bound to exist, and the findings show that hypothetically, people hold right attitudes about this issue. Fig. 4 show the findings and the changes.

Interestingly, of the 13.3% individuals (50% male and 50% female) who stated that they personally suffered from mental health illnesses, only a mere 5% sought help despite several modes of treatment being

Table 3
The frequency of responses about people's attitudes towards individuals suffering from mental health illnesses.

Levels	Counts	% of Total	Cumulative %
Dismissive of them	2	3.4%	3.4%
Dismissive of them, Long-term or life-lasting	1	1.7%	5.1%
Dismissive of them, Needs treatment	1	1.7%	6.8%
Dismissive of them, Relatively short-term (just a phase, it will pass), Needs treatment	1	1.7%	8.5%
Long-term or life-lasting	1	1.7%	10.2%
Needs treatment	8	13.6%	23.7%
Out of a person's control	1	1.7%	25.4%
Out of a person's control, Long-term or life-lasting, Relatively short-term (just a phase, it will pass)	1	1.7%	27.1%
Out of a person's control, Needs treatment	1	1.7%	28.8%
Related to specific life events (unemployment, relationships, exam stress, troubles with family)	7	11.9%	40.7%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Needs treatment	1	1.7%	42.4%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Out of a person's control	2	3.4%	45.8%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Out of a person's control, Long-term or life-lasting, Needs treatment	1	1.7%	47.5%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Out of a person's control, Needs treatment	1	1.7%	49.2%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Out of a person's control, Relatively short-term (just a phase, it will pass), Needs treatment	2	3.4%	52.5%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Relatively short-term (just a phase, it will pass)	1	1.7%	54.2%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Relatively short-term (just a phase, it will pass), Needs treatment	3	5.1%	59.3%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Within a person's control, Long-term or life-lasting, Relatively short-term (just a phase, it will pass), Needs treatment	1	1.7%	61.0%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Within a person's control, Relatively short-term (just a phase, it will pass)	1	1.7%	62.7%
Related to specific life events (unemployment, relationships, exam stress, troubles with family), Within a person's control, Relatively short-term (just a phase, it will pass), Needs treatment	3	5.1%	67.8%
Relatively short-term (just a phase, it will pass)	2	3.4%	71.2%
Relatively short-term (just a phase, it will pass), Needs treatment	3	5.1%	76.3%
Stigmatized	3	5.1%	81.4%
Stigmatized, Dismissive of them	1	1.7%	83.1%

(*continued on next page*)

Table 3 (*continued*)

Levels	Counts	% of Total	Cumulative %
Stigmatized, Dismissive of them, Needs treatment	2	3.4%	86.4%
Stigmatized, Dismissive of them, Out of a person's control, Relatively short-term (just a phase, it will pass), Needs treatment	1	1.7%	88.1%
Stigmatized, Dismissive of them, Related to specific life events (unemployment, relationships, exam stress, troubles with family), Out of a person's control, Long-term or life-lasting, Relatively short-term (just a phase, it will pass), Needs treatment	1	1.7%	89.8%
Stigmatized, Dismissive of them, Related to specific life events (unemployment, relationships, exam stress, troubles with family), Out of a person's control, Relatively short-term (just a phase, it will pass)	1	1.7%	91.5%
Stigmatized, Dismissive of them, Related to specific life events (unemployment, relationships, exam stress, troubles with family), Within a person's control, Out of a person's control, Long-term or life-lasting, Relatively short-term (just a phase, it will pass), Needs treatment	1	1.7%	93.2%
Within a person's control	3	5.1%	98.3%
Within a person's control, Out of a person's control, Long-term or life-lasting, Needs treatment	1	1.7%	100.0%

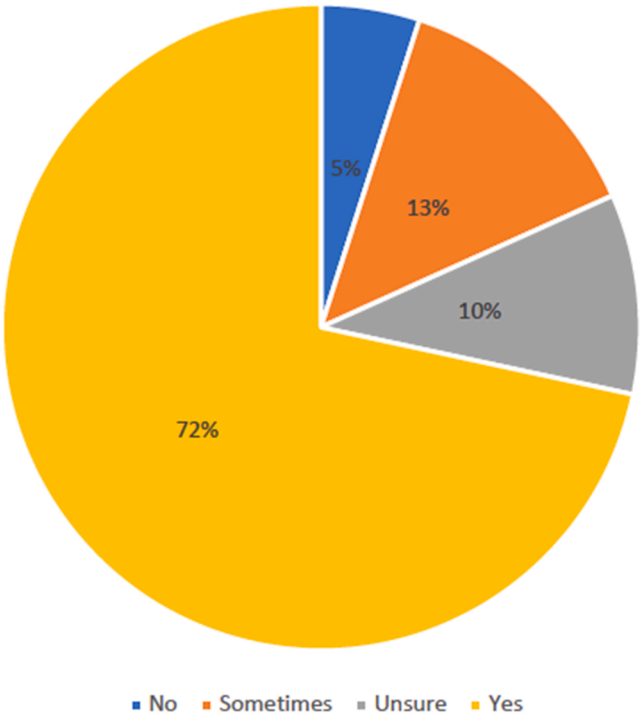

Fig. 2. Are mental illnesses treatable?.

indicated. The fear of getting judged and thinking that it was not necessary were the major reasons cited. This indicates that they possibly held a stigmatized attitude. The most opted form of treatment was from a general practitioner. Additional forms of treatment such as yoga, meditation and exercise were given more importance. Even pharmacotherapy was opted, but everyone who opted for any treatment did so as an outpatient. In conclusion, despite suffering from mental health

Table 4
According to you, what is the ideal mode of treatment for individuals suffering from mental health problems?.

Levels	Counts	% of Total	Cumulative %
Cannot be treated	1	1.7%	1.7%
Counseling	8	13.3%	15.0%
Don't know	2	3.3%	18.3%
Faith healer/Religious Methods	5	8.3%	26.7%
Faith healer/Religious Methods, Counseling	3	5.0%	31.7%
Faith healer/Religious Methods, Mental Health Practitioner	3	5.0%	36.7%
Faith healer/Religious Methods, Mental Health Practitioner, Counseling	1	1.7%	38.3%
General Physician	1	1.7%	40.0%
General Physician, Mental Health Practitioner	1	1.7%	41.7%
Isolation, Don't know	1	1.7%	43.3%
Isolation, Mental Health Practitioner, Counseling	1	1.7%	45.0%
Mental Health Practitioner	16	26.7%	71.7%
Mental Health Practitioner, Counseling	17	28.3%	100.0%

related problems, individuals still considered it a taboo and did not reach out for help. 26.7% of the people reported one or more of the following: loss of jobs and salary cuts. These were the responses of mainly individuals from the urban setting with higher educational qualifications (Bachelor's degree and above). Table 5 and Table 6 indicates these responses.

With regards to 108 as an emergency response service, 96.7% of all participants were aware of 108 as an emergency response number that can be used for various services. However, a large majority of participants were unaware that the service could be used for behavioral emergencies, as supported by the findings of the retrospective data. Many even reported suggesting it to others to use for emergencies which shows a strong sense of awareness and outreach about the service. It was most used for medical emergencies and road accidents, and used for various traumas and pregnancy related problems. The satisfaction level was very high and only 1.7% reported that they were not satisfied because of a delayed response time.

4. Impact of Covid-19 on mental health issues

The findings indicate an increase in stress levels because of the pandemic. 25% of individuals reported deterioration in their mental health status (equally divided among the rural and urban setting). These findings support results from a survey conducted by the Indian Psychiatric Society which shows a twenty percent increase in mental illnesses since the coronavirus outbreak in India (Loiwal, 2020). A study by Abramson et al. also supports this and further reports that lockdowns around the world have led to an increase in domestic violence cases where women and children have no escape from their abusers during the quarantine (Chandra, 2020). Participants from both settings were able to differentiate between mere stress and mental health problems since there was a difference in the responses for the questions. Fear of contracting the virus, lockdown restrictions, increased household responsibilities and effect on job status were the most reported worries. However, only a small number of participants from the rural setting were worried about their job status since they held jobs of daily wage workers, which didn't seem to have much impact. New research from the World Health Organization (2020b) reports that self-isolation and quarantine have affected usual activities, routines, and livelihoods of people that may lead to an increase in loneliness, anxiety, depression, insomnia, harmful alcohol, and drug use, and self-harm or suicidal behavior. Similarly, an increase in stress was reported by everyone, regardless of other factors. It is evident that the pandemic has caused increased stress levels for a majority of people, but the extent to which it

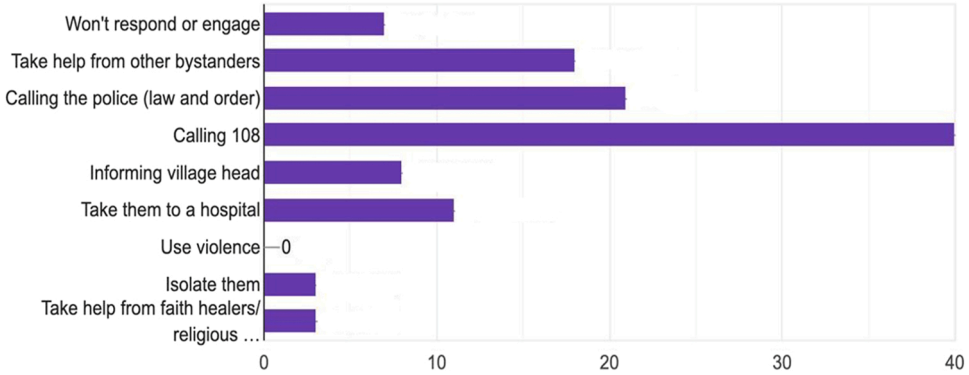

Fig. 3. If you notice any abnormal behavior, or notice a person being a threat or danger to themselves or others, what would you do?.

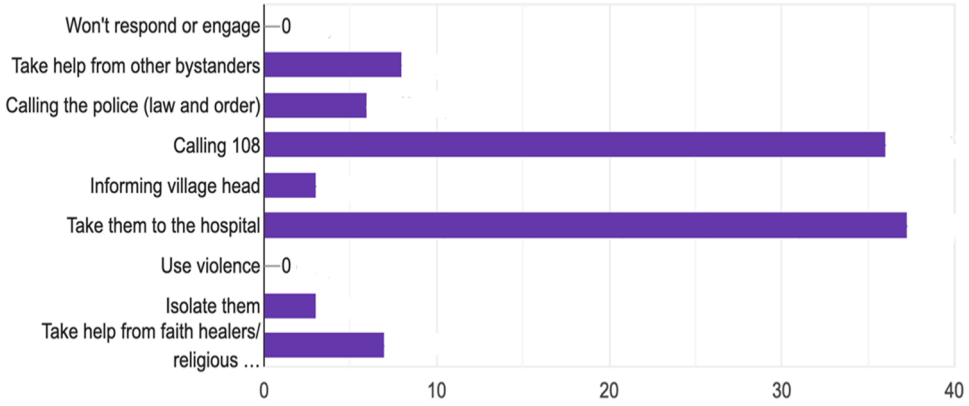

Fig. 4. If you notice any abnormal behavior in a family member, being a threat or danger to themselves or others, what would you do?.

Table 5
Have you experienced increased stress levels due to the pandemic?.

Levels	Counts	% of Total	Cumulative %
Agree	23	38.3%	38.3%
Disagree	14	23.3%	61.7%
Strongly Agree	13	21.7%	83.3%
Strongly Disagree	7	11.7%	95.0%
Undecided	3	5.0%	100.0%

Table 6
Have you had experiences like loss of jobs and/or salary cuts?.

Levels	Counts	% of Total	Cumulative %
Loss of jobs	6	10.0%	10.0%
Loss of jobs, Salary cuts	1	1.7%	11.7%
No	31	51.7%	63.3%
Not applicable	13	21.7%	85.0%
Salary cuts	9	15.0%	100.0%

has impacted their lives differed. The urban sample suffered from greatest stress levels having an impact on various factors of their life. Coincidentally, higher educational qualifications indicated more extreme responses in this dimension.

5. Conclusion

This study has limitations. The retrospective study was confined to one year only (2017). And the cross-sectional study was confined to one rural unit and one urban ward in Medchal District. The results of the study indicate that mental health related problems exist in communities, but there is still a great amount of stigma that is attached to this topic. Individuals from the urban setting were more open to talk about them probably as a result of higher education and knowledge about this topic. All the people were aware about the problems at hand. With regards to attitudes, despite having slightly negative views about mental health issues, a compassionate attitude was the commonality. However, as expected, individuals were reluctant to seek help and reach out to others when they needed help. Additionally, Covid-19 caused increased stress levels and mental health/well-being to a great extent. The awareness of 108 as an emergency response service was immaculate and a positive view was held about the services and organizations. A few recommendations to make the services even better are:

- Increasing the number of ambulances to achieve faster response times
- Having advanced equipment in all the ambulances
- Stationing vehicles in prime locations to ensure reaching the destination faster
- Using advanced technology to identify the caller location more swiftly so that asking multiple questions about the location can be reduced.

6. Future research

It is recommended that future research focuses on collecting retrospective data over multiple years to establish a comparison in the rate of change for knowledge, attitudes and practices. Additionally, mental health surveys should be conducted in all the states in India and status of mental health should be assessed soon. It is evident that the Covid-19 pandemic has increased stress levels and hence, assessments of its impact on mental health should be carried out in representative

demographic groups and vulnerable groups like youth, women and elderly. Furthermore, long-term prospective studies on the impact of mental health due to Covid-19 should be conducted.

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There are no financial conflicts of interests to disclose.

Declaration of Competing Interest

The authors report no declarations of interest.

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