Original Article

Social Distancing In Rural Andhra Pradesh – Practice Among Healthcare Workers And Their Perception About General Public: A Mixed-Method Study

Running title: Social Distancing in Rural Andhra Pradesh

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Abstract

Introduction: India has been affected by COVID – 19 pandemic and Andhra Pradesh is one of the badly affected states. Social distancing is a key non-pharmacological intervention advised to contain the pandemic. The onus of sensitizing the rural population about it lies on health workers. *Objectives*: To study the voluntary practice of social distancing among health workers in rural areas. To understand their perception of how the general public is following it during various stages of pandemic. *Settings and Design*: This is a mixed-methods cross-sectional study conducted in the rural areas of Krishna District, Andhra Pradesh. *Material and Methods*: The participants included teachers, ASHAs, village volunteers and doctors, from rural areas of Krishna District, Andhra Pradesh. The quantitative component involves a scale designed and validated to assess the practice of participants. The perception of participants regarding general public was observed by In-Depth Interviews. The interviews were conducted under four domains. Statistical *Analysis used*: Analysis of Variance (ANOVA) was used to see the difference in social distancing scores between different groups of study participants. *Results*: The scores of social distancing indicate the participants have voluntarily reduced going out during the pre-lockdown period. It was observed that the general public did not follow social distancing before imposition of lockdown. Good compliance was reported during lockdown period, but more due to fear of police. *Conclusion*: This experience should teach us to ensure financial stability for unorganized classes during crises, and educate the youth about importance of infection transmission. **Key messages:** The rural health workers understand well the magnitude of the pandemic and importance of social distancing. The social distancing among rural public was unsatisfactory until the imposition of lockdown. Due to sufficient sensitization and stringent enforcement, the lockdown has served its purpose, with some lapses. This pandemic has given hopes and lessons for our nation to ready itself for similar battles in future.

Key Words: Covid, Lockdown, India, Andhra Pradesh, Social Distancing, Rural, Grasrrots Health Worker

Introduction

The Government of India declared COVID – 19 a notified disaster on March 14th.[1] Since then it has been strongly promoting social distancing and respiratory hygiene as a means to interrupt the chain of transmission of the infection. All educational institutions, shopping malls, theatres, gyms were closed and offices were asked to function with reduced staff from March 16th. Following this, a nation-wide lockdown was imposed on 25th March 2020 [2, 3]

The intentions behind the government's aggressive advocacy of social distancing was well-placed. Social distancing was found to be an effective measure to contain pandemics. Like the influenza pandemic of 1918-19 (Spanish flu),[4] Systematic reviews on previous pandemics and World Health Organization (WHO) have also endorsed social distancing as a useful strategy for containing pandemic in overpopulated, resource-poor countries.[5, 6]
A key issue here is how successfully this social distancing can be implemented and sustained in India. This is much more relevant in rural areas where low level of awareness and poor access to healthcare indicated towards need for more containment measures. The public healthcare system is heavily reliant on grass root workers like village volunteers, Accredited Social Health Activists (ASHA), teachers to educate and motivate the public, provided they themselves are thoroughly sensitized. Hence, an attempt was made to understand the healthcare worker's view point that how they have practiced social distancing in the pre-lockdown period, and what was their perception about the way general public practicing the same.

Objectives:

1. To assess the degree of social distancing practiced by different healthcare personnel before the imposition of lockdown (March 15th – March 24th 2020).
2. To know their perception of how the general public is following social distancing during different stages of COVID-19 pandemic
3. To understand barriers of social distancing in general public, and its feasibility in post-lockdown period

Methodology

Study Design: This is a mixed-method cross-sectional study. The practice of social distancing was assessed by a self-administered questionnaire. The perception of social distancing was understood by In-Depth Interviews (IDIs). Study subjects included doctors, medical students, ASHAs, village volunteers and teachers, since they had direct interface with the public during the pandemic.
Sampling size and frame: Since there was no data available in literature regarding compliance to social distancing among health workers, a compliance of 50% was assumed for sample size calculation. With an allowable error in relative precision of 10%, a sample size of 240 was obtained, at an alpha error upto 5%. From each group, 60 subjects were planned to be included. They were drawn from the rural field practice area and other villages in Krishna District, where our Department was involved in sensitization activities.

Study Instrument

Preparation and Validation: In a pilot study on 20 participants, a list was made of all the possible places visited by the study population. Then the participants were asked to grade these places into three categories – very essential, essential and non-essential. Each place was assigned to the category which was marked by highest number of participants. These categories and scoring pattern used were listed in Table1.

Table 1. Grading of places and scoring for each place

Very Essential	Essential	Non-essential
Grocery store	Supermarket	Movies
Medical store	Restaurant	Bar
Public transport	Gym	Religious place
Physician	Wedding	Long Travel
Bank / ATM	Visiting friends / relatives	Malls / Showrooms
Scoring for each place: Based on frequency of visit per week: 1 (< 3 times), 2 (3 – 5 times), 3 (> 5 times).		

This scale was validated by asking another 30 participants to fill it up and checking for reliability of the scale with Cronbach's alpha. The total scores for each category were compared between different groups for each category to see for any significant difference between different groups, using Analysis of Variance (ANOVA) on SPSS Trial Version 20.

In-Depth Interview (IDI): The perception of the healthcare workers about practice of social distancing among general public was assessed by In-Depth Interviews. There was no fixed sample for conducting IDIs. IDIs were conducted as long as new inputs were received. The subjects were asked to express their views about social distancing among general public under five domains:

1. Social distancing in the week prior to lockdown
2. Social distancing during lockdown
3. Feasibility of social distancing once the lockdown is removed
4. Knowledge gaps among public that influence social distancing.

Since the lockdown came into place, all IDIs were conducted on telephone.

The subjects were informed prior about the interview, and the call was made at a time of their choosing. Calls were recorded if consent was given. Otherwise the interview was conducted with phone on speaker mode the transcripts were written down in full. They were then translated into English from Telugu, and the contributing information was extracted under each domain.

Results

Due to imposition of lockdown a few days into the study, the target sample size could not be achieved. Hence a total of 167 participants were surveyed. Some participants took part in the study through Google Forms.

Majority of the study subjects limited going out during the pre-lockdown period. They maintained social distancing satisfactorily. The most commonly visited were religious gatherings, friend's/relative's home, using public transport, restaurant, and travelling. The scores were highest in school teachers, followed by doctors and medical students. The scores were least in village volunteers and health workers. However, the differences between the groups were not found to be statistically significant. The comparison was described in Table 2

Table 2: Comparison of Groups of Healthcare Workers based on Social Distancing Scores

	Very essential	Essential	Non-essential	Total
Teachers	5.8 ± 1.5	5.2 ± 1.0	5.6 ± 1.7	16.7 ± 3.9
Volunteers	5.2 ± 0.9	5.2 ± 0.5	5.1 ± 0.3	15.6 ± 1.4
ASHAs	5.2 ± 0.6	5.1 ± 0.3	5.1 ± 0.3	15.4 ± 0.8
Doctors & Medical students	5.3 ± 0.7	5.4 ± 0.8	5.1 ± 0.3	15.9 ± 1.4
p-value	0.14	0.63	0.18	0.60

In-depth Interviews were conducted on a total of 14 subjects. Two each of teachers, ANMs, ASHAs, doctors and undergraduate medical students and four village volunteer. The interview duration ranged from 8 to 15 minutes. Participants agreed that lockdown was necessary to control corona virus disease. Some villages have barricaded them even before the imposition of lockdown itself. Health workers are working to educate the people. However, several barriers and lapses were reported.

<u>Summary of In-Depth Interview</u>

In-depth Interviews were conducted on a total of 14 subjects. Two each of teachers, ANMs, ASHAs, doctors and undergraduate medical students and four village volunteers. Average duration of IDI was 7 min 20 sec.

Theme 1: Social Distancing in Pre-lockdown period

1. It was observed that most people did not follow social distancing in the days preceding the lockdown.
   "*Nothing changed in our village till police came*"
   "People thought it was a hoax, simply to scare us"
   "Only after janata curfew people started thinking about this"
2. Though people were aware of the issue, they did not find it important enough
   "There are not many cases on our side. No need to worry"
   "First stop the people coming from United States. You don't say anything to them but shout on us"
3. Daily wagers refused to stay home as they need wages, and ignored health workers advice
   -*"...you people are going to work and getting salary; but what about us – we should also go to work"*
4. Marriages and functions took place as usual.
   "*Once fixed, we can't postpone it no. And it won't be nice we don't attend our relatives' functions*"
5. People still travelled but slightly less
6. Some people were worried but still didn't do much
7. Many people started using kerchief, but did not maintain enough distance
8. Agricultural workers had go as it is harvest season

Theme 2: Social Distancing in Lockdown period

It was observed that health workers felt the lockdown was complied well by general public

1. *We have sensitized the people very well, and they are following it*
2. *In our village the general awareness is high, so people are taking all precautions*
3. *First few days they didn't take seriously, but from April 1st – 2nd they started following well*

However, some lapses were also observed during the lockdown time. The study participants asking people to go inside were met with mixed response.

4. *Do you understand how difficult it is to stay home all day, when we are accustomed to work outside everyday*
5. *People are coming out in small streets. If I shout on them they will go in, but again come out later* - ANM
6. *If I tell them not to gather, they say, "look little doctor is coming and scaring us, nothing will happen* - Medical student 1

The participants have also raised concerns that though they were following norms, others were not.

7. *I stand in queue and maintain distance, but others simply rush in. If anyone tells them to maintain distance, they argue* – Doctor 1
8. *People are riding double and triple even if there is no need. Also taking kids* – Teacher
9. *In our country, people are very curious to know what is happening outside. So they want to roam on streets* – Teacher 2
   In bigger villages also they are keeping only one outlet for vegetables, there crowding happens definitely.

Theme 3: Feasibility of Social Distancing after Lockdown is Relaxed

It was observed that respondents were skeptical about general public maintaining social distancing after the lockdown was lifted.

1. *People will think the problem is over. They will not take it seriously. They will come out with some excuse*
2. *The kids were forced to stay at home all these days, now they will pester the parents tot take them out*
3. *Though people may not go to bigger public places, they will gather on roadside and tea shops*
4. *People will rush out just like all the kids run out once the school bell is given*
5. *Police will be exhausted, so they also will not bother*

It was also raised that those who follow news regularly, start taking less seriously, even if the new cases in a day reduced by 2 or 3

Theme 4: Knowledge gaps

It was observed that some knowledge gaps led to people ignoring the severity of the situation

1. "*The disease is caused by eating chicken and eggs*"
2. "*Standing in sun will protect from disease*"
3. "*Only children and older people will get the disease*"
4. "*Teenagers and adults have good resistance so they will not get the disease*"
   It was observed that lack of clarity on some issues led to further distress
5. *"A whole truckload of vegetables were burnt because someone had contact with a suspected case. Nobody knows what to do"*
6. *"People started cleaning vegetables with antiseptics and also wiping currency notes. Not willing to keep them in pocket also".*
   Regarding the role of village volunteers in sensitization of public, it was observed that many

participants appreciated their role, while some were skeptical.

7. *"We can't find fault with village volunteers anywhere. They were patient in educating people and reassuring them while screening and contact-tracing"*
8. "*Village volunteers not taking sensitization seriously...they already have so many jobs, they just want to finish this for namesake"*.

Discussion

Practice

The present study has found that the healthcare workers were practicing social distancing satisfactorily during the pre-lockdown. Higher movement and travel was seen in teachers, doctors and medical students, though not significant. These scores were high due to higher use of public transport. The reason could be that many commute for work daily from another village or city. The village volunteers and ASHA workers are usually from the same village, so they did not have to travel. This may explain the lower scores in them.

Higher scores were seen in all groups for "very essential" places, compared to "essential" and "non-essential" places. Thus the study participants appeared to have reduced going out for non-essential work, even before the imposition of lockdown.

Perception

The study participants felt that the general public did not take the government's advice seriously before the lockdown was imposed. This is a matter of concern, since pre- emptive social distancing was found to be effective in containing the spread of pandemics.[7]

The study participants felt that after the imposition of lock-down, people started following distancing. The non-compliance was attributed mainly to ignorance and some myths. However, the respondents felt that lockdown was a good step in controlling the disease. But various concerns were raised about income and employment. The cash transfer and food distribution by the government was found to be insufficient. Overall, the lockdown seemed to have had its desired effect. This is a positive public health development since similar experiences in other parts of the world showed such closures have drastically flattened the infection curves.[8]

One matter of concern expressed by the participants was the lack of compliance of social distancing among adolescents and young adults. This was also attributed to misinformation that they are healthy, so immune to the disease. However this trend is not unique to India. Other studies during various pandemics have raised their issue. There is a need for more effort to sensitize the adolescents and young adults about how they can be the backbone of pandemic transmission.[9, 10]

The study participants felt that social distancing will be very difficult to follow after the official relaxation of lockdown. It reinforces their perception that public compliance of lockdown was more of political will and law enforcement, than community participation. Once the lockdown is lifted, there is a high chance of overcrowding in all public places, especially due to holiday season. It is important to avoid this, since there is high risk of a second wave of infection if distancing was not adequately followed.[10]

It has already been suggested to sustain this lockdown for a longer period with periodic breaks, though a review of news reporting on lockdown has stated that it has not materialized well in India.[11, 12]

Limitations

The adequate sample size could not be reached as lockdown restrictions were imposed during the study. Most of the

study was conducted during lockdown period, so there might be recall bias among respondents while reporting about pre-lockdown period.
Since the responsibility of motivating people for distancing was entrusted to village volunteers and ASHAs, they might be biased in reporting the social distancing by general public in their villages.

Conclusion

The practice of social distancing among healthcare workers was adequate. However, they felt the general public was not taking it seriously. It is important to learn lessons from this pandemic and sensitize the general public for future.
The policymakers should adopt a two-pronged strategy in the long term. One is to focus on non-pharmacological measures for infectious diseases and health education to clear the myths. Second is to ensure financial stability for the population during such episodes, which will secure the people in complying with such advices.

But the overall situation is a welcome sign, as the general public are believed to have realized the importance of prioritizing health. This gives hope that our system can cope up well with future challenges involving a combination of law enforcement and widespread public participation.

Ethical Approvals

The study has been conducted after obtaining provisional clearance from the Institutional Ethical Committee. Informed consent was taken from all the participants for questionnaire as well as In-Depth Interview.

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