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Impact of COVID-19 lockdown on mental health status: A questionnaire based cross sectional study in Hyderabad, India

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***Abstract*---**Background In view of the rising concerns about the psychological impact of COVID-19 pandemic and the subsequent lockdown imposed as an emergency safety measure, this study aims to understand the mental health status of the people of Hyderabad, India. The objectives of the study are to find the prevalence of psychological morbidities and its association with factors like environment at home, relationship with others and self-perception of mental health.

***Keywords*---**COVID-19, SRQ-20, lock down

Introduction

The pandemic of coronavirus disease caused by severe acute respiratory syndrome. Coronavirus has emerged in Wuhan, Hubei province, China at the end of 2019. It was declared a pandemic on 11 March 2020 by WHO(1). Due to the rapid and widespread of the disease, the entire world came to a sudden standstill with lock down/self quarantine implemented by the governments across the globe leaving people homebound. The government of India ordered a nationwide lockdown on the 24th March, 2020. A lockdown in an emergency situation like an epidemic or pandemic refers to a temporary condition imposed by governmental authorities in which people are required to stay in their homes and refrain from or limit activities outside the home involving public contact (such as dining out or attending large gatherings). This unique situation brought about apprehension

and fear, as a lot about this virus was yet to be discovered. This could have a detrimental effect on the mental health of people. Mental health is not just the absence of mental disorder. It is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community. This study is an effort to understand the impact of the pandemic and its consequent events on the mental health of the people in Hyderabad, India.

Objectives:

1. To estimate the prevalence of psychiatric morbidities during the lockdown using the SRQ-20 screening test.
2. To study the effect of the environment at home and emotional relationship with people on the mental health status.
3. To find any correlation between self-perception of mental health during the lockdown and the occurrence of psychiatric morbidities.

Method

Instruments

A questionnaire consists of general information like age, gender, occupation and a section of questions in relation to COVID-19 pandemic and lockdown. For the psychological assessment, SRQ-20 screening tool was used

SRQ-20 questionnaire

It is an instrument with 20 items which questions the respondents about the symptoms and problems that are likely to be present in neurotic disorders. This questionnaire was designed specially for developing countries and is coordinated by WHO to screen for psychiatric disturbances for use in both primary care settings and in various research works.(2)

Procedure

The survey was conducted with a questionnaire created on Google forms and the snowball sampling technique was used to circulate the survey among the residents of Hyderabad, India. The link was circulated through emails, WhatsApp and other social media. The link opens up to an introduction of the survey providing the respondants with the necessary information regarding the survey. The questions are framed in a continuous pattern and at the end of the study the respondents were encouraged to share it with their family members and friends in the city. The responses were received for 48 hours between April 15 2:00 PM IST and April 17 2:00 PM IST and following which the link was inactivated.

Statistical analysis

The received data was analysed using the IBM SPSS software version 12 and Microsoft excel. Kruskal-Wallis H test and chi square test were used to find correlations with the variables.

Results

Of the 1242 responses received, 1208 responses(participants) were included in the study after excluding the duplicated submissions(n=34). The mean age of the participants was 26.8 years(SD:11.76) with 69.5% from the 18-25 years age group. The study included 683 (56.5%) female ,512(42.3%) male and 13(1.07%) participants who preferred not to say. The other option was provided along with space to specify in order to make the study more inclusive. The survey was conducted 35 days after the lockdown was imposed.

Results of the screening test SRQ-20
The mean score of the participants was 7.598. When a cut off score of 10 was applied to the survey data, 28.55% of the participants screened positive for the presence of psychological morbidities represented in table 1. Positive screening for SRQ-20 test was associated with psychological disorders like mixed anxiety and depressive disorder, anxiety and dependent disorder and adjustment disorders according to ICD-10 classification of mental and behavioral disorders. A cut off of 11/12 which validated to have good sensitivity and specificity in Indian context was applied for the SRQ-20 screening test. (3)

Table 1: Results of the screening test SRQ-20

	No. of people	Percentage
Screened positive	345	28.55%
Screened negative	863	71.44%

Variation in SRQ-20 test results with different age groups

Among the participants of the age groups of 10-17 years, 18-25 years, 26-40 years, 41-55 years and 55–70 years, 41%, 33.5%, 18.2%, 13.0 percent and 2.6% screened positively to the SRQ-20 screening test respectively as represented in table 2 and figure 2.

Table 2: Variation in SRQ-20 test results with different age grouping

			Age group				
			10-17	18-25	26-40	41-55	56-70
Screening	Positive	Count	16	281	29	17	1

using SRQ		% within Age group	41.0%	33.5%	18.2%	13.0%	2.6%
	Negative	Count	23	559	130	114	38
		% within Age group	59.0%	66.5%	81.8%	87.0%	97.4%
Total			39	840	159	131	39
Total%			3.22%	69.53%	13.16%	10.84%	3.22%

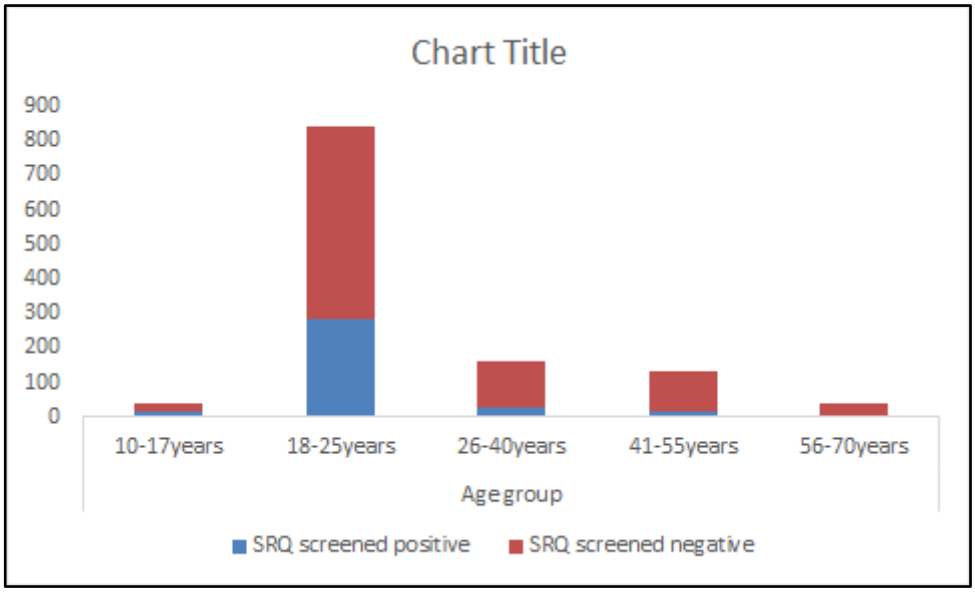

Figure 1: Variation in SRQ-20 test results with different age groups

Variation in SRQ-20 test results with gender

32% of the female subjects screened positive for the presence of psychiatric morbidities as opposed to 21.8% of males as represented in table 3.

Table 3: Variation in SRQ-20 test results with Gender		
Gender	Number of people who screened positive b/ Total	Percentage within gender
Male	125/572	21.8%
Female	219/684	32%
Prefer not to say	1/13	7.6%

Effect of lockdown on environment at home and its relation with the results of SRQ-20 screening test

When the participants were questioned about the environment at home as compared to before the lock down 481(39.81%) responded that it got better/lightened, 589(48.75%) responded that it was the same and 137(11.34%) responded that it got worse/tensed.

The worsened or tensed environment at home showed a positive correlation with screening positive with SRQ-20 (Figure 2 & 5)

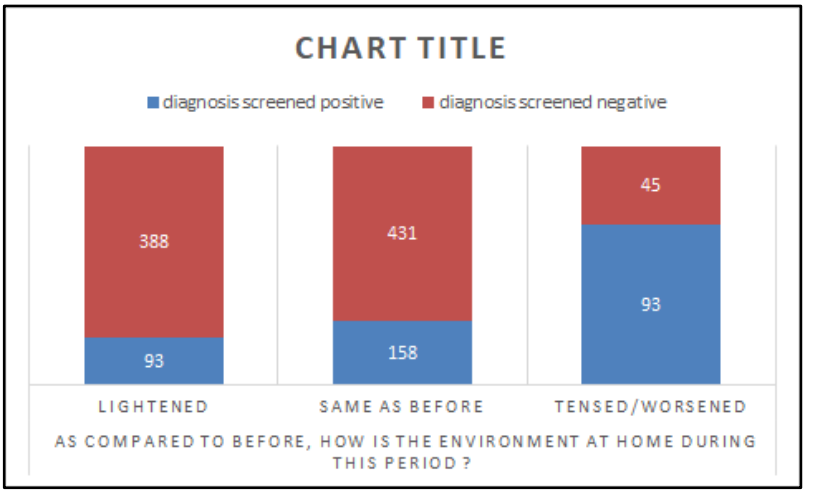

Figure 2: Effect of lockdown on environment at home

Effect of lockdown on relationships with people around and its relation with the results of SRQ-20 screening test

When the participants were questioned about the relationships with people aroundas compared to before the lock down 363(30.04%) responded that it got

better, 751(62.16%) responded that it was the same and 94(7.78%) responded that it got worse.

The worsening of relationships with people around showed a positive correlation with screening positive with SRQ-20. (Figure 3 & 5)

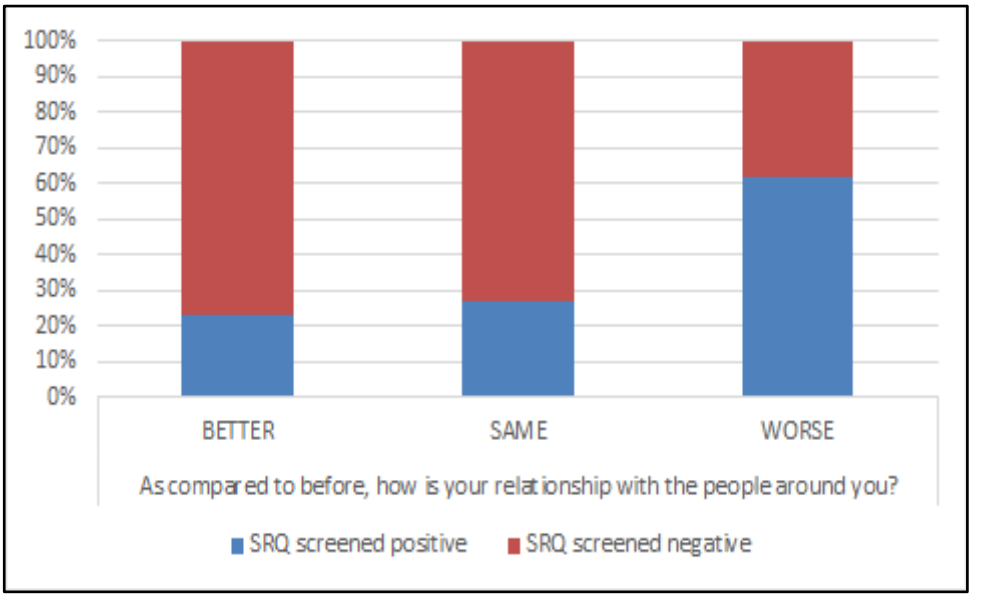

Figure 3: Effect of lockdown on relationships with people around and its relation with the results of SRQ-20 screening test

Effect of staying connected with family, friends and loved ones away from you on the results of SRQ-20 screening test

Staying connected with family, friends and loved ones awayduring the lockdown showed to have no significant correlation with the result of the screening test SRQ-20. (Figure 4 & 5)

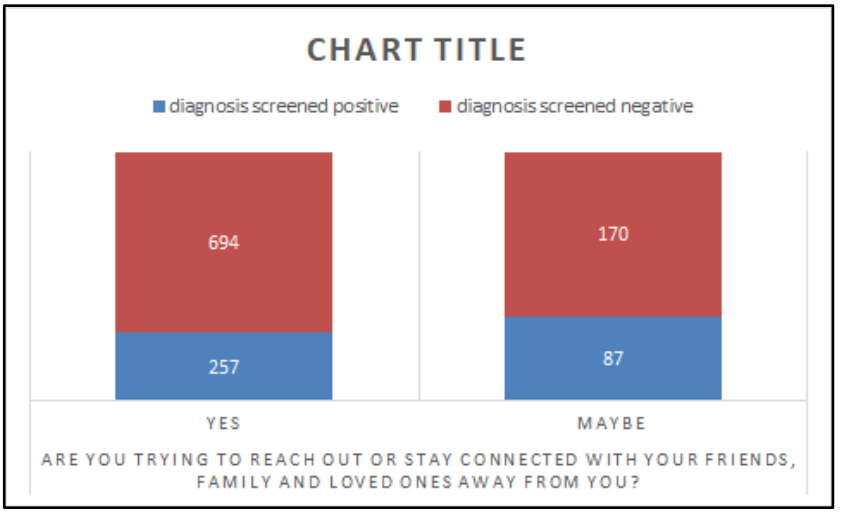

Figure 4: Effect of staying connected with family, friends and loved ones away

Test Statistics[a,b]

	Age group	Are you trying to reach out or stay connected with your friends, family and loved ones away from you?	As compared to before, how is the environment at home during this period?	As compared to before, how is your relationship with the people around you?
Kruskal-Wallis H	47.804	4.627	75.514	27.474
df	1	1	1	1
Asymp. Sig.	0.000	0.031	0.000	0.000

a. Kruskal Wallis Test

b. Grouping Variable: diagnosis

Figure 5 : Kruskal Wallis Test

Relation between catching up on hobbies during lockdown and the results of SRQ-20 screening test

When the participants were questioned if they were catching up on their hobbies, 636(52.64%) answered yes and 572(47.36%) answered no. (Table 4 & Figure 6)
A significant correlation was seen between the results of SRQ-20 screening test and the status of pursuing hobbies.(Table 5)

Table 4: Relation between catching up on hobbies during lockdown and the results of SRQ-20 screening test				
			Are you catching up on your hobbies?	
			yes	no
diagnosis	screened positive	Count	133	211
		% within Are you catching up on your hobbies?	20.9%	36.9%
	screened negative	Count	503	361
		% within Are you catching up on your hobbies?	79.1%	63.1%

Table 5			
Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	37.739[a]	1	0.000
Continuity Correction[b]	36.959	1	0.000
Likelihood Ratio	37.893	1	0.000
Linear-by-Linear Association	37.708	1	0.000

N of Valid Cases	1208		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 162.89.			
b. Computed only for a 2x2 table			

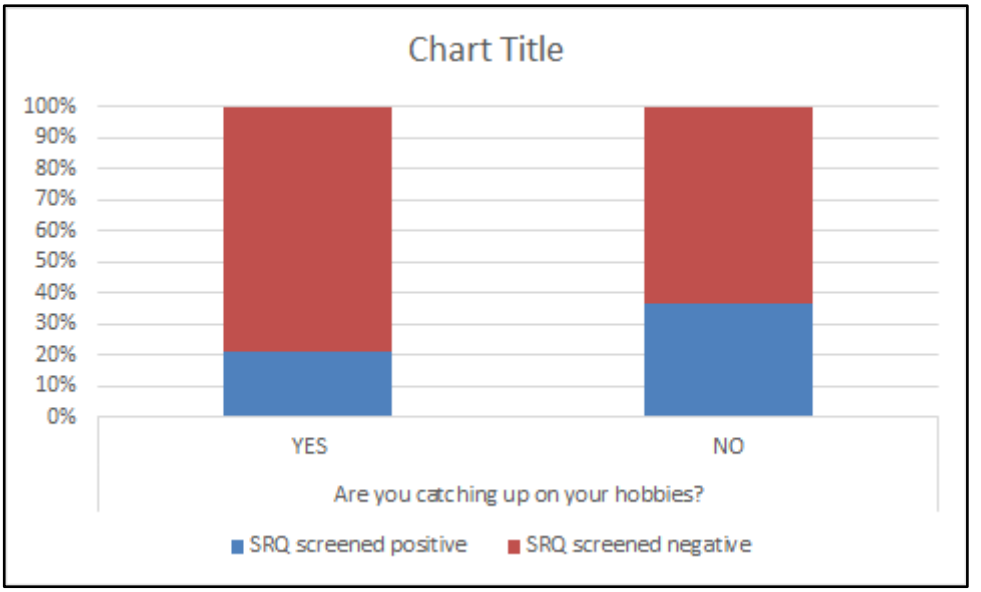

Figure 6 : Relation between catching up on hobbies during lockdown and the results of SRQ-20 screening test

Self harm thoughts/ tendencies during the lockdown

When the participants were questioned about the self harm thoughts/tendencies 115(9.51%) answered yes, 1010(83.60%) answered no and 83(6.87%) preferred not to answer.(Table 5 & Figure 7)

A strong correlation was appreciated between self harm tendencies and SRQ-20 screening test (Table 7 & Figure 7)

Table 6: Self harm thoughts/ tendencies during the lockdown					
Crosstab					
			Have you had any self harm thoughts/ tendencies(even once)?		
			yes	no	prefer not to say
diagnosis	screened positive	Count	66	240	38
		% within Have you had any self harm thoughts/ tendencies(even once)?	57.4%	23.8%	45.8%
	screened negative	Count	49	770	45
		% within Have you had any self harm thoughts/ tendencies(even once)?	42.6%	76.2%	54.2%

Table 7: Association of self harm thoughts/ tendencies with the screening test result

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	70.432[a]	2	0.000
Likelihood Ratio	64.329	2	0.000
Linear-by-Linear Association	8.877	1	0.003
N of Valid Cases	1208		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.64.

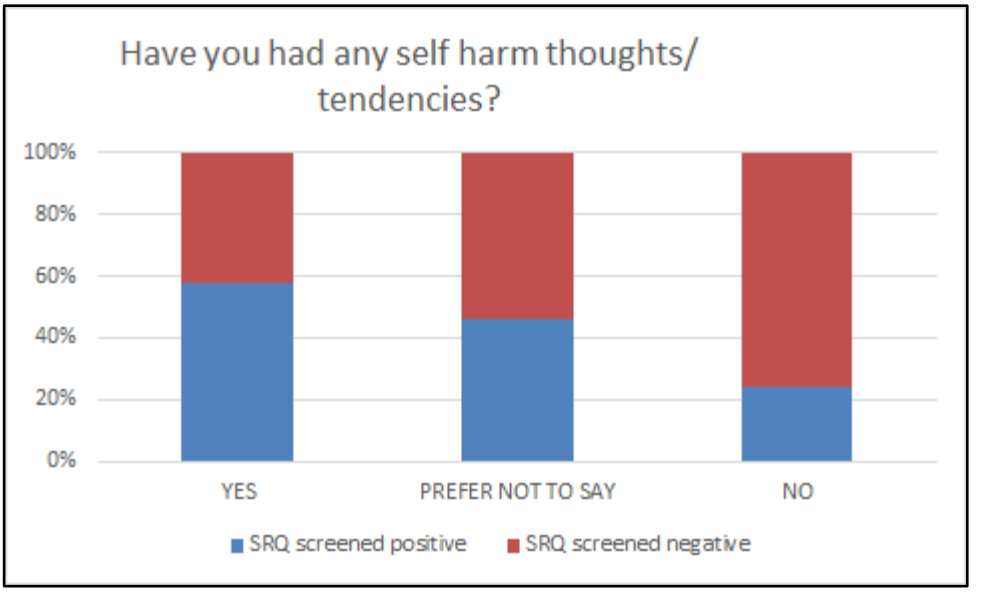

Figure 7:Self harm thoughts/ tendencies during the lockdown and SRQ screening result

Self-perception of mental health and its relation with the results of the SRQ-20 screening test

When the participants were questioned about their self-perception of mental health, 183 reported a worsened mental state, 861 reported that it was the same and 164 reported a better mental state. (Table 8 & Figure 8)

A strong correlation was appreciated between self-perception of mental health and SRQ-20 screening test. (Table 9)

Table 8: Self-perception of mental health and its relation with the results of the SRQ-20 screening test

Self-perception	Count	Screening result & % within self-perception	
		Positive	Negative
Worsened	183	139	44
		75.9%	24.1%
Same	861	174	687
		20.2%	79.8%
Better	164	31	133
		18.9%	81.1%

Table 9

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Chi-Square	238.8237	2	0.000
N of Valid Cases	1208		

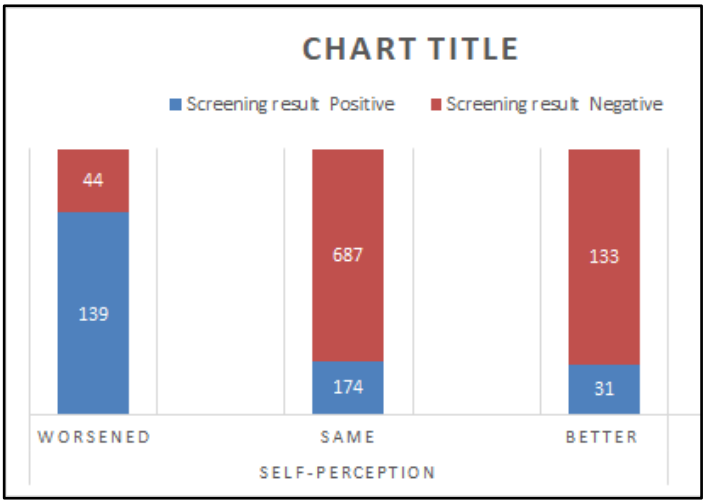

Figure 8: Self-perception of mental health and its relation with the SRQ-20 screening test

Discussion

This cross sectional study conducted in Hyderabad,India evaluates the impact of lockdown on the mental health of the people, various factors affecting it and self perception of the mental health status in the people. The screening test SRQ-20was used to estimate the psychological impact and a cutoff of 11/12, which was found to have a good validation in the Indian context,was applied. The prevalence of psychiatric morbidity was found to be present in 28.55% of the study participants against the national prevalence of mental morbidity of 10.6%.(4) The age groups of 10-17 years and 18-25 years were found to be 41% and 33% respectively, significantly higher than the average 28.55% . The prevalence of positive screening results for psychiatric morbidity was higher in female participants at 32% as opposed to 21.8% in male participants. This result is consistent with the female predominance observed for depressive disorders ,for neurotic and stress-related disorders.(5)

Participants who screened positive for psychological morbidities showed an association with worsened/tensed environment at home and worsening of relationship with people around. While staying connected to friends, family and loved one away during the lockdown didn't show an impact on mental state.
Participants who were indulging in their hobbies showed an association with negative screening results for psychiatric morbidity.

The prevalence of self harm thoughts/tendencies during the lockdown was 9.51% and an association was appreciated with positive screening results for psychiatric morbidities.

An interesting finding of this study is the association found between the self-perception of mental health status with the results of the screening test. Three quarters of participants who perceived their mental health to be worsened screened positive for psychiatric morbidities.

Conclusion

The study shows that nearly one thirds of the people are suffering from psychiatric morbidities during the lockdown. The impact of the lockdown on mental health could be much greater than what was found as the survey was conducted only 36 days into the lockdown and the cut off considered for the screening test could have missed the milder cases of anxiety and depression. A follow up study at the end of the lockdown may be required to achieve the appropriate estimate of the impact. The impact of lockdown on mental health was greater for adolescents and young adults. Women showed higher prevalence of psychiatric morbidities. Deterioration in the home environment and relationship with people around, as compared to before lockdown showed a negative impact on mental health. These findings are an association and do not prove a causal relation. The findings of the study suggest the higher prevalence of psychiatric morbidities in people who have perceived a deterioration in mental health. This could help in conducting targeted screening tests and provide the necessary treatment.

Limitations

- The study only comments on the prevalence of psychiatric disorders, it does not classify them.
- The survey was conducted in the initial phase of the pandemic, the magnitude of the effect might have been underestimated.
- The study is limited to the people who had smartphones, e-mail IDs and the ability to understand English.
- The study mainly reached young adults and thus did not have the anticipated snowballing effect.

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