

Understanding social problems during lockdown and its relationship to perceived stress - An online survey among adult residents of India

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ABSTRACT

Context: Nationwide lock down imposed due to Covid 19 might bring about various social problems, constraints in availing essential services, difficulty in taking care of morbid elderly persons and inaccessibility to health care which can lead to stress. **Aims:** To identify social problems among adult Indian residents during lockdown period, to assess perceived stress among them and to identify the factors associated with it. **Settings and Design:** The study was conducted through the online platform using a google form among adult residents of India. Perceived stress was assessed by Perceived Stress Scale 10. **Statistical Analysis Used:** Data were analysed using SPSS version 16.0., using chi square, Odd's Ratio and binary logistic regression. **Results:** One fourth of the respondents faced economic problem, 11.7% of them had experienced some sort of violence and worsening of familial relationship. The problems encountered in seeking care were chi square test due to non availability of transportation facilities and health services. Overall 80.78% of the respondents were observed to have moderate and high levels of perceived stress. Multivariate analysis revealed single marital status, owing a debt and experiencing violence had 1.62, 1.8 and 9 times higher odds of having moderate to high perceived stress. Violence was identified as its chief correlate. **Conclusions:** The present study found negative economic and social consequences on the Indian population and also posed an enormous psychological stress due to sudden lock down in pandemic situation.

Keywords: Covid 19, lockdown, perceived stress, social problem

Introduction

The outbreak of Corona virus, COVID 19 which originated in Wuhan, China in December 2019 overwhelmed the entire world within a short span of two to three months. Thus this Public health Emergency of International Concern was declared as Pandemic by WHO on March 11th 2020. The disease spectrum varies from mild influenza like illness to

severe acute respiratory illness associated with considerable mortality and morbidity.^[1]

The containment measures comprised frequent hand washing or sanitizing, social distancing and appropriate use of masks, maintenance of cough etiquette. In order to break the chain of infection, movement of people were restricted by imposing Lockdowns in several countries the world.^[2]

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India reported its first case on 29th January 2020, and the rapid spread was observed from 1st week of March 2020. At the wake of the Corona virus outbreak, India went into a nationwide complete lockdown from 25th March 2020 with a view to flatten

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the rising epidemic curve. Social distancing is considered as a crucial strategy to curb the pandemic.^[1]

With imposition of lockdown, people were confined to their homes and movement was restricted.^[1] Only essential services were in place. Educational Institutions, shops, restaurants, cinema and theatres were shut down. The government advised for 'work from home' as far as practicable. Such a situation might lead to various social problems like reduction in income, loss of work, domestic violence, and constraints in availing essential commodities and services, difficulty in taking care of morbid elderly persons due to absence of care givers, inaccessibility to health care which can lead to stress. Plethora of literature published during this period suggested that lockdown and the pandemic resulted in psychological challenges amidst the general population.^[3-7]

A study conducted in Spain noted that nearly one fourth of their subjects (24.7%) had moderate to severe psychological impact during the Covid 19 pandemic.^[6] A review of existing literature by Rajkumar PR revealed that the proportion of symptoms of anxiety and depression varied from 16% to 28% and that of self-reported stress was 8%.^[7] Studies conducted in India reported moderate to high level of perceived stress among adults with increased predisposition to Post traumatic stress Disorder (PTSD).^[8,9] However there is paucity of data on the social consequences of 'Lockdown' due to the Covid 19 pandemic and its relationship to perceived stress among Indian adults.

Thus the current study was contemplated with the following objectives:

- i. To identify social problems among adult Indian residents during lockdown period
- ii. To assess perceived stress among the study subjects during that period
- iii. To determine the factors associated with perceived stress among them

Subjects and Methods

The present study was a descriptive, cross-sectional study conducted through the online platform among adult (18 years and above) residents of India.

A Google form was created including a set of questionnaires, about participant's socio-demographic and economic characteristics. The demographic and social variables included age, gender, residence, education, occupation, income, marital status, type of family, total number of family members, number of elderly members, job and income status during lockdown period, any addiction, addiction behavior during lockdown, history of violence. Variables pertaining to availability and accessibility of healthcare during lockdown were considered as well. Perceived stress was assessed using Perceived Stressed Scale 10.^[10] Perceived stress scale 10 (PSS 10) developed by Sheldon Cohen in 1983 was

used to assess stress. The validated scale comprises of 10 items rated on a 5 point Likert scale with minimum and maximum scores of 0 and 40 respectively. The scale consists of six positively worded questions and four negatively worded questions which were reversely coded. Higher scores indicate higher level of perceived stress. The Cronbach's alpha for PSS 10 in our study was found to be 0.813 indicative of good internal consistency.

A convenience and snowball sampling strategy was applied to recruit the general population through various social media networks including Whatsapp and email id. throughout India in first week of July 2020. All responses were tagged with phone numbers or email id so as to ensure single response by a respondent. The window period for submission of filled questionnaire was 2 weeks. Informed consent was taken prior to the survey though the Google form. Responses of non consenting subjects were automatically terminated. At the end of the window period of 2 weeks 647 responses were obtained. The proposal was cleared by the Institutional Ethics Committee (Memo No. MSD/MCH/PR/2362/2020 dated 21.12.2020).

Data were analysed using SPSS version 16.0. Incomplete questionnaires were discarded and ultimately 614 completely filled questionnaires were considered for analysis. Data were presented by tabulation and charts. Mean, standard deviation, proportions were used to describe the data. Inferential statistics included tests for normality and Chi square tests, accompanied with Odds ratio and 95% Confidence interval. Significant variables were entered in binary logistic regression and Hosmer Lemeshow goodness of fit test was performed.

Results

Within the 2 weeks of window period, a total of 647 adult persons above 18 years participated in the survey, while analysis was performed on 614 subjects who filled up the questionnaire completely. Majority of the study participants were in the age group of 18 to 29 years (51%), male (54.6%), residing in urban area (75.9%), unmarried (51.1%) and belonged to nuclear family (76.9%). Regarding educational qualification, 26.1% each were professional and passed higher secondary followed by Graduates (25.9%) and post graduates (21.7%). By occupation, 40.8% were students, 21.2% were Government service holders and 14.7% were professionals. As far as socioeconomic status was concerned, 72.4% belonged to class I according to B G Prasad scale 2018. About 57.1% participants had 1 to 3 elderly member in their family. [Table 1]

It is evident from Table 2 that out of 614 respondents, 51.4% were working. Nearly 60% went out for work; among them majority were service holders (57.1%) followed by professionals (30.3%). The proportion of subjects working from home was 28.8% most of whom were private service holders (45%) followed by Government employees (26.7%). Students were staying at home due to closure of their institutions.

Table 1: Socio demographic characteristics of the study subjects (n=614)

Variable	Categories	No.	Percentage
Age	18-29	313	51.0
	30-45	144	23.5
	46-59	99	16.1
	>=60	58	9.4
Gender	Male	334	54.6
	Female	280	45.4
Residence	Urban	466	75.9
	Rural	148	24.1
Type of family	Nuclear	472	76.9
	Joint	142	23.1
Level of Education	Professional	160	26.1
	Post graduate	133	21.7
	Graduate	159	25.9
	Higher Secondary	160	26.1
	Secondary and below	2	0.4
Occupation	Professional	90	14.7
	Self employed	31	5.0
	Government Service	130	21.2
	Private Service	64	10.4
	Student	251	40.8
	Home maker	14	2.3
	Unskilled worker	1	0.2
	Retired/At home	33	5.4
Marital status	Married	286	46.6
	Unmarried	314	51.1
	Widow/Widower	5	0.8
	Divorced/Separated	9	1.5
Socioeconomic status (according to B.G. Prasad scale 2019)	Class 1	445	72.4
	Class 2	36	5.9
	Class 3	20	3.3
	Class 4	35	5.7
	Class 5	78	12.7

A little more than a fourth i.e 26.4% of the respondents reported reduction of family income during lock down while a similar proportion of them who owed loan were unable to repay it. Nearly 72.4% of the participants who reported some form of addiction were noted to have a change in their addiction behaviour with decrease in addiction pattern predominating over an increase [Table 2].

More than one tenth of the participants i.e 11.72% (72/614) reported to have experienced some form of violence during the lockdown period. Most of the violence were faced from neighbours (41.67%) followed by family members (30.9%) and spouse (16.67%). The rest reported psychological violence from their workplace. Thus among those who experienced violence during the lockdown period, domestic violence was the commonest form of violence with 47.6% of them encountering the same. Nearly 11.6% of the subjects positively responded to the statement, 'Familial relationships have worsened during lockdown'. This figure is very close to the proportion of violence during this period. Interestingly the proportion of violence was four times higher among those who perceived that familial relationships have worsened compared to those who did not

with the association being highly significant (28.2% vs 7.5% respectively; $P < 0.001$).

Out of 614 respondents 29.9% of the respondents reported to have sought care either for themselves or their family members. The commonest problem encountered in seeking care was difficulty in reaching care due to non availability of transportation facilities followed by non availability of health services [Table 3].

It is evident from Figure 1 that most of the subjects (70.8%) were found to have moderate level of stress (PSS score 14-26) while 10% them reported high levels of stress. Nearly (19%) were noted to have low stress (PSS score 0-13). Thus overall 80.78% (95% CI 77.444-83.83) of the respondents were observed to have moderate and high levels of perceived stress. The mean score was found to be 18.56 ± 5.64 (95% CI 18.11-19.01).

Multivariate analysis revealed marital status as single, owing a debt and experiencing violence had 1.62, 1.8 and 9 times higher odds of moderate to high perceived stress during lockdown. Experiencing violence was identified as the chief correlate of perceived stress. The model was able to explain for 24.8% of the variation [Tables 4 and 5].

Discussion

A web based study was conducted among 614 adult subjects aged 18 years and above to identify the social, economic and psychological consequences of nationwide sudden lock down declared in India to curb the Covid 19 pandemic.

Social and economic problems

During lock down period, it was observed that 26.4% of the participants in the present study had reduced income, 8.5% had no income while 1.3% had lost their jobs. Similar observation was made in China where 1.6% had lost their jobs.^[11] It was apprehended in a leading newspaper of India that the youths would suffer from fear of uncertain future, academic years and job losses.^[12] In the current study it was observed that, more than one third of study population (35.3%) had owed loans; out of them 26.7% were unable to repay same. Pillai DD *et al.*^[13] in a review article also commented on the sudden adverse effects on jobs in India especially for the daily wage earners and unskilled labourers.

The present study revealed 11.7% of the study population had faced some form of violence, mostly psychological followed by physical and same proportion had felt worsening of familial relationship during lock down period. Previous pandemic experiences had also shown a rise in intimate partner violence, divorce and separation rates in families.^[12] All over the world, even in developed countries like Spain, France, USA a new public health crisis has appeared as a negative consequence of lockdown as Domestic Violence. National Commission of Women also reported the cases of violence against women from all parts of India with a 21% rise in domestic violence during the lockdown

Table 2: Social issues during lockdown

Variables	No.	%
Job status during lockdown (n=316*)		
Went out for work	191	60.4
Worked from home	91	28.8
Not going out for work	30	9.5
Lost job	4	1.3
Family income (n=614)		
Reduced	164	26.4
No income during lockdown	52	8.5
Same as before	395	64.3
Increased	3	0.5
Debts owed by family (n=614)		
Yes	217	35.3
No	397	64.7
Inability to repay loan (n=217)	58	26.7%
Addiction		
Present	123	20.1
Absent	491	79.9
Addiction behaviour (n=123)		
Increased	21	17.1
Decreased	68	55.3
No change	34	27.6
Violence** (n=614)		
Physical	8	1.3
Psychological	65	10.6
Sexual	2	0.3
No violence	542	88.3
Familial relationship worsened during lockdown		
Strongly agreed/Agreed	71	11.6
Neutral	171	27.9
Disagreed/Strongly disagreed	372	60.5

*Not applicable for students, homemakers, retired/at home. **Multiple response

Table 3: Problems reported by the respondents in seeking health care in Lock Down (n=184)*

Problems	No	%
Difficulty in transportation	143	77.7
Non availability of Health Service	91	49.4
Procurement of Medication	47	25.5
Financial Constraint	24	13.0
Absence of trained care givers	45	24.4

*Multiple response

period.^[14] Review conducted by Gopalan *et al.*^[15] also indicated an increase in domestic violence during this period in India. The present study also observed an increase in addiction behaviour in 17% individuals, similar to a study in Belgium where people consumed more alcohol and cigarettes.^[16] Boredom, lack of social contacts, loss of daily structure and loneliness might have attributed for change in this addiction behaviour.

Accessibility of health care services

A large proportion of the respondents (57.7%) in the present study had one or more elderly members in the family who had to seek health care in the lock down period. The commonest problem they encountered in seeking care was due to lack of

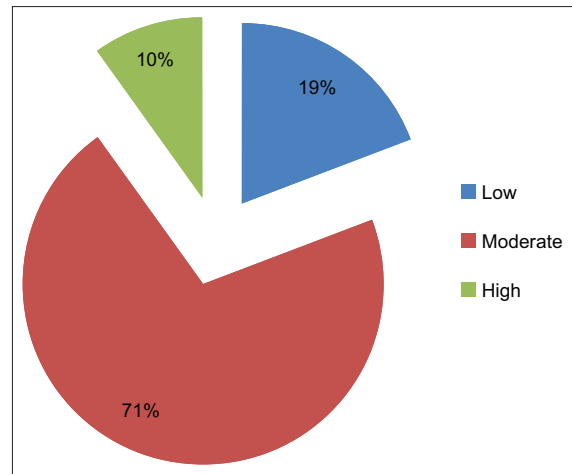


Figure 1: Level of stress of the study participants

transportation facilities followed by non availability of health care services. The closure of private healthcare facilities in the lock down period that take care of a considerable proportion of the total healthcare burden had posed severe problem on the people suffering from chronic diseases.^[12] Even in Government health care setting, mobility restrictions and excessive fear had also hit the attendance of frontline health workers to basic healthcare services during pregnancy, delivery and new-born healthcare in India.^[12] In seven slums of Bangladesh, Kenya, Nigeria and Pakistan a reduction in access to healthcare services was reported including that of preventive services.^[17] Main reasons were being cost of healthcare in case of reduction of household income, difficulty in reaching healthcare facilities and fear of being diagnosed with COVID-19. Similar was the observation regarding access to mental health care services in an Italian mental health outpatient service for migrants and individuals in socio-economic difficulties.^[18] But in a longitudinal study in South Africa, there was no change in clinic visitation except for visit for child care which dropped down after lock down, but regained soon.^[19]

Psychological effect of lock down

A rapid review of more than 20 studies by Brooks *et al.*^[20] reported negative psychological effects of lock down including post-traumatic stress symptoms, confusion, and anger. Stressors included longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Though isolation helped in achieving the goal of reducing infections, but reduced access to family, friends, and other social support systems caused loneliness increasing mental issues like anxiety and depression as observed by.^[21] Gopalan *et al.* in their review stated that the lockdown would push India on the verge of a mental health crisis with increase in chronic stress, depression, anxiety, substance abuse and suicides.^[9]

An online survey conducted in India by Grover *et al.*,^[8] noted that nearly three fourths of their subjects had (74.1%) had moderate to severe stress which is close to the Figure of 80.8% observed in our study. However severe perceived stress was slightly higher

Table 4: Factors influencing perceived stress during Lock down (n=614)

Variable	Categories	Status of perceived Stress		OR 95% CI	P
		Low No.%	Medium to high No.%		
Age (in years)	18-29	50 (16.0)	263 (84)	1	0.023
	30-45	31 (21.5)	113 (78.5)	0.69 (0.42-1.14)	
	46-59	18 (18.2)	81 (71.8)	0.85 (0.47-1.54)	
	>=60 years	19 (32.7)	39 (67.3)	0.39 (0.20-0.729)	
Gender	Male	71 (21.3)	263 (68.7)	1	0.161
	Female	47	233	1.33 (0.88-2.01)	
Residence	Urban	89	377	1	0.887
	Rural	29	119	0.96 (0.607-1.54)	
Education	Postgraduate and below	92	362	1	0.267
	Professional	26	134	1.3 (0.81-2.11)	
Occupation	Service	55	230	1.08 (0.71-1.64)	0.340
	Self employed	9	22	0.58 (0.25-1.33)	
	Non working	54	244	1	
Marital status*	Married	65 (22.7)	221 (77.3)	1	0.039
	Single	53 (16.2)	275 (83.8)	1.52 (1.01-2.28)	
Presence of elderly member in the family	No	45 (20.7)	216 (79.3)	1	0.285
	Yes	73 (16.2)	280 (16.2)	0.79 (0.52-1.20)	
Income status	Same as before or increased	83 (20.9)	315 (79.1)	1	0.163
	Reduced/No income	35 (16.2)	181 (83.8)	1.36 (0.88-2.10)	
Loan in family*	No	86 (21.7)	311 (85.3)	1	0.038
	Yes	32 (14.7)	185 (16.2)	1.59 (1.02-2.49)	
Addiction Behaviour* (n=127)	Same as before	7 (18.4)	31 (81.6)	1	0.806
	Reduced/Increased addiction	17 (19.1)	72 (81.9)	0.95 (0.36-2.53)	
Experienced Violence*	No	116 (21.4)	426 (78.6)	1	<0.001
	Yes	2 (2.8)	70 (97.2)	9.5 (2.3-39.4)	

*Significant

Table 5: Multivariate analysis of factors influencing perceived stress among the respondents

Variable	AOR	95% CI	P
Age >60 years	0.814	0.657-1.009	0.061
Marital status Single	1.628	1.023-2.591	0.040
Loan in family	1.807	1.110-2.942	0.017
Experienced violence	9.025	2.167-37.576	0.003

in the current study compared to that reported by Grover (10% vs 4%). In yet another study by Dagli N,^[9] the proportion of moderate stress was found to be 44% which is lower than the figure of 70.8% that observed in our study. However the findings of their study is not befitting the results of the present study given the difference in study tools used in assessment of stress. Nearly 28% of Indian adult population were afflicted with post traumatic stress disorder during lockdown.^[9] A nationwide survey in China found psychological distress among 35% of the respondents which included anxiety, depression, specific phobias, cognitive change, avoidance and compulsive behaviour, physical symptoms and loss of social functioning.^[22] Again a web based health related behaviour survey among Chinese population found the overall prevalence of generalized anxiety disorder, depressive symptoms, and poor sleep quality were 35.1%, 20.1%, and 18.2%, respectively.^[23]

The present study observed moderate stress among 71% of the study subjects and high level of stress in 10%, while 19%

reported low level of stress. Multivariate analysis revealed being single, owing a debt and experiencing violence had 1.62, 1.8 and 9 times higher odds of moderate to high perceived stress during lockdown compared to those who did not experience the same. Violence was identified as the chief correlate influencing perceived stress. On the other hand, a study in China showed that age less than 35 years and time spent focusing on the COVID-19 in internet (≥ 3 hours per day) were associated with generalized anxiety disorder, and healthcare workers were at high risk for poor sleep quality.^[23] Similarly another study conducted in China found worse mental and physical health conditions as well as distress among those who stopped working than who continued to work and the severity of COVID-19 in an individual's home city also predicted their life satisfaction.^[11] A study in India had also found poor psychological and physical domains while assessing quality of life among the medical students during lock down period; more time spent on TV screen and less physical activity were predictors of lower psychological domain.^[24] But in a study among college students in China found living in urban area, family income stability and living with parents were protective factors against anxiety, having relatives affected with Covid 19 was seen to be a risk factor for increasing anxiety among these students.^[25] Qiu et al., 2020 rightly commented that in addition to various psychological problems like depression, anxiety, and panic disorder, the COVID-19 pandemic has caused severe threats to the lives and physical health of people around the globe.^[21]

An effective pandemic response demands a multi-pronged and multi-layered approach, comprising surveillance, containment, as well as various social and community measures by primary care physicians and family physicians as pointed out by Lee *et al.*^[26] These physicians working as a first point of contact of the community provides curative and preventive measures, but has the potential role for counselling these psychologically distressed population, when access to mental health care facility is restricted in this pandemic situation.

Conclusion

The present study found negative consequences on the Indian population as far as social and economic issues are concerned and also revealed an enormous psychological stress due to sudden lock down in the pandemic situation. Eighty one percent of the study participants had moderate to severe stress and major stressors observed were marital status single, owing a loan and experiencing violence. Some potential methods for mitigation of these psychosocial effects during a public health crisis like Covid 19 include clear and regular communication from the Government, financial support for the lost wages, access to health care especially elderly and people with chronic illnesses. Special measures should be undertaken to address the issues of the elderly who usually suffer from anxiety and depression due to concern for food and medicine and lack of contact with dear ones. There is also an urgent need to combat violence during this period, which is predisposing to psychological stress to a great extent. Provision of psychological services for those having already mental illnesses should be prioritized and nationwide strategic planning and coordination for psychological first aid during major disasters should be established through telemedicine. This underscores the importance of sensitizing the primary care physicians to screen, identify and manage patients reporting to primary care facilities with mental health problems given the reduced accessibility to higher levels of government and private facilities owing to the pandemic.

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Conflicts of interest

There are no conflicts of interest.

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