Impact of Media and Time Management Pattern on Mental Wellbeing among the General Population during COVID-19 Lockdown in India – A Cross-Sectional, Respondent-Driven Survey

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ABSTRACT

BACKGROUND

In COVID-19 pandemic, nation-wide complete lockdown was enforced for about 10 weeks which was an unprecedented experience for all and potentially influenced mental wellbeing partly through infodemic mismanagements. This study intended to analyse the impact of media and time management pattern on mental wellbeing among general population during COVID-19 lockdown in India.

METHODS

An online study questionnaire was circulated among general population between 1st April and 12th May 2020 using social networking site (s). The questionnaire included socio-demographic details, source of information and knowledge on COVID-19, impact of time spent on media, smart phone, productive and relaxation activities, general views on lockdown experience and further mental health status was screened using standardized DASS - 21 Scale. Appropriate descriptive and inferential statistics were done using SPSS statistic 26.0.

RESULTS

A total of 891 people responded from 11 states, mostly (89 %) from South India, and 27.5 % were having mental health problems on DASS - 21 scale. Most of the participants opined that COVID-19 information on traditional (53 %) and social media (85 %) were not completely authentic and perhaps amplifying perceptual responses. Excess time spent on media (46 %) and smart phone over exposure (61 %) had significant mental health issues and on contrary individuals who managed their time well, indulging in productive and relaxation activities were found to be psychologically stable (P < 0.05).

CONCLUSIONS

This study highlights the impact of media and time management pattern during lockdown emphasizing both positive and negative predictors of mental health. There is clearly a need for media regulation and working in collaboration with authorities for better mental wellbeing of the society in ongoing fight with COVID-19.

KEYWORDS

COVID-19, Lockdown, Media, Smartphone, Time Management Pattern

BACKGROUND

COVID-19 (Corona Virus) is a public health emergency.[1] The World Health Organization (WHO) has declared this to be a pandemic in March 2020.[2] In India to combat this COVID-19, nation-wide complete lockdown was announced with effect from 25th March 2020 to 31st May 2020 in four phases, a total of 68 days.[3,4]

This was an unprecedented experience for all, faced by new challenges to deal with, along with unexpected changes in lifestyle. Overall, the pandemic had an impact in all domains of the current world starting from health, society, economy and would also impact the future policymaking at global, country, and regional level.[5]

In public health emergencies like COVID-19, the media plays crucial role providing information, allocating Government resources, and preparing the community for following standard norms which can protect the individuals and societies.[6]

It is evident that many people were after seeking facts, but voluminous information may amplify the perception of risk, create uncertainties, and could also incite stress, anxiety, and depression.[7,8] Due to lack of usual routine, the lockdown provided people with more free time. There was a pattern of duality as to how time is being spent, which can be either a boon or a bane. On one end of the spectrum this excess free time gave opportunity for families to spend more time together and strengthen bonds, also in improving skills.

On the contrary, some people felt monotonous, got bored, disappointed, and frustrated not knowing how to spend their time effectively under the lock-down state.[9] This lead to unhealthy daily routines which included physical inactivity, extended screen time, lack of self-efficacy activities and unhealthy sleep habits. In younger age group, it was again evident that outdoor extracurricular activities were compromised and shift towards problematic smart phone use, gaming and other internet-based addictions were being occurred.[10]

Further, few studies during lockdown have documented an upsurge in domestic violence cases,[11] sleep disorders,[12] an increase in mental health problems like anxiety and depression both from India[13,14,15] and abroad.[16,17]

Thus in the present study authors intends to understand the risk and protective factors of mental wellbeing from the two major domains, viz impact of media and time management and to our knowledge, there is hardly any published Indian literature about both the domains so far.

METHODS

Setting and Participants

After having received ethical approval from our Institutional Ethical Committee, we adopted a cross-sectional, respondent-driven sampling (RDS) method using Markov modelling for recruiting the hard-to-reach populations living throughout almost all the states of India using an online, anonymous survey questionnaire, containing 67 questions. It was first disseminated to 19,660 hospital staff, medical students, central and state government employee(s), various institutional friends, groups of researchers and colleagues of all the religious groups across 25 possible states of the country with effect from 1st April to 12th May 2020 for almost 6 weeks through electronic platform. The hidden Markov modelling is used like a variant of a link-tracing network sampling method to collect data from such hard-to-reach population scenario. Thus, by tracing the links in the underlying social network, the process exploits the social structure to expand the sample and reduce its dependence on the initial convenience sample and treat the data as a probability sample vis-vis against snowball type of non-probability sampling. All respondents were provided with informed consent. Minimum age required to participate in the study survey was 16 years and maximum age was 80 years. Individuals with any active psychiatric illness at the time of sample collection were exempted from the study. Meantime the completion of the questionnaire was about 10 to 12 minutes. A single reminder was sent to all the recipients and an opt-out option was also incorporated. The confidentiality of the information was strictly maintained.

Survey Development

The self-structured questionnaire was constructed, which consisted of questions related to the following domains: (1) socio-demographic data; (2) source of information and knowledge on COVID-19; (3) impact of time spent on media (traditional and social media) and smart phone during the lockdown; (4) pattern of time spent on productive and relaxation activities; (5) general views on lockdown experience; (6) mental health status was measured using the standardized Depression, Anxiety and Stress Scale (DASS - 21).

It is 21-item questionnaire developed by Lovibond and his colleagues.[18] Questions 3, 5, 10, 13, 16, 17 and 21 formed the depression subscale, while questions 2, 4, 7, 9, 15, 19 and 20 formed the anxiety subscale and questions 1, 6, 8, 11, 12, 14 and 18 formed the stress subscale. The DASS - 21 has been demonstrated to be a reliable (Cronbach's alpha - 0.9)[19] and valid measure in assessing mental health in the many previously conducted studies.[16,17]

Statistical Analysis

All the data were entered in Microsoft excel sheet using SPSS Statistic 26.0 (IBM, New York, USA) and clinical and socio-demographic variables were analysed using frequency and percentages (descriptive statistics). We used appropriate nonparametric tests like chi - square test, Mann-Whitney U - test for quantitative nominal and ordinal group data comparisons between three separate groups of depression, anxiety and stress with reference to impact of time and media as well as general views on lockdown experience. Spearman's Correlation coefficient (ρ) was used (inferential statistics) to study the significant level of associations between qualitative psychosocial with three subgroups scores on DASS - 21. A p value of less than 0.05 was considered significant for all the tests.

RESULTS

Survey Respondents and Socio-Demographic Profile

A total of 891 individuals responded to this survey conducted between 1st April to 12th May 2020, during COVID-19 lockdown in India. There were responses from the 11 states, including Telangana (572), Andhra Pradesh (136), Karnataka (55), Kerala (12), Tamil Nadu (21), Maharashtra (34), Gujarat (07), West Bengal (14), Uttar Pradesh (12), Delhi (17), Punjab (11), but however most of them (89 %) belonged to South India.

Socio-demographic details of the 891 participants were tabulated. About two-third of them were in the age group of 21 - 40 years (66 %), upper-middle socio-economic status (68 %) and residing in city (59 %). Around half of them were not professionally working during the lockdown (52 %), and one-third of them were students (34 %) followed by doctors (26 %) [Table 1].

Variables (N = 891)		Frequency (%)
Age	16 - 20 yrs.	122 (14 %)
	21 - 40 yrs.	589 (66 %)
	41 - 60 yrs.	155 (17 %)
	60 - 80 yrs.	25 (3 %)
Gender	Male	477 (53 %)
	Female	416 (47 %)
Religion	Hindu	811 (91 %)
	Muslim	30 (3 %)
	Others	50 (6 %)
Marital status	Unmarried	420 (47 %)
	Married	432 (49 %)
	Widow / Divorcee	39 (4 %)
Place of residence	City	530 (59 %)
	Town	290 (33 %
	Village	71 (8 %)
Education	Up to Inter	54 (6 %)
	Degree	442 (50 %)
	Post-Graduation	395 (44 %)
Profession	Doctor	235 (26 %)
	Other health care worker	20 (2 %)
	Engineer	52 (6 %)
	Teacher	41 (5 %)
	Business	48 (5 %)
	Farmer	10 (1 %)
	Homemaker	37 (4 %)
	Student	300 (34 %)
	Unemployed	13 (1 %)
	Other Professions	135 (15 %)
Current status of working (profession) during the lockdown	Full time (outside work)	104 (12 %)
	Part time (outside work)	109 (12 %)
	Full time (work from home)	123 (14 %)
	Part time (work from home)	90 (10 %)
	Not working at all	465 (52 %)
Socio-economic status	High	55 (6 %)
	Upper Middle	604 (68 %)
	Lower Middle	222 (25 %)
	Poor	10 (1 %)

Table 1. Sociodemographic Profile

Source of Information and Knowledge on COVID-19

Among 891 participants, most common source of information and knowledge on COVID-19 was traditional media (96 %) followed by social media (87 %), but only 422 (47 %) members opined that information telecasted on traditional media was completely authentic, whereas it was only 137 (15 %) for social media.

Most of the responders opined that the information and knowledge gained from health care professionals (84 %) was completely authentic followed by books and journals (58 %) [Table 2].

Impact of Time Spent on Media and Smart Phone

Among all the participants, 200 (22 %) of them were screened to be having depression, 138 (15 %) had anxiety and 93 (10 %) had stress and 245 (27.5 %) were screened to be having either of them on DASS - 21 scores. Around half of the participants 404 (46 %) responded to be spending more time on media (traditional and social media) than required and it was found that this group had statistically significant higher depression (p = 0.000), anxiety (p = 0.000), and stress (p = 0.040) compared to the ones who spent appropriate or less time on media.

Among all the participants, 484 (54 %) of them viewed that, only half of the COVID-19 information on media was useful to them and 112 (13 %) of them responded that this information on media was creating a kind of panic in them, and this group had significantly higher scores on DASS - 21. Surprisingly, most of the responders (61 %) felt many times distressed spending excess time on smart phone during the lockdown and this group had significantly higher depression (p = 0.000), anxiety (p = 0.000), and stress (p = 0.001) [Table 3].

Pattern of Time Spent on Various Productive and Relaxation Activities

Out of 891 participants, only 186 (21 %) productively utilized most of the extra time obtained during the lockdown, while 271 (30 %) reported to have wasted most of their time and they had significantly higher scores for all the three domains of DASS - 21 scale. 460 (52 %) responders frequently planned their day after waking up from the bed and they had significant better mental wellbeing compared to others. The pattern of time spent for most of the days during the lockdown on various productive and relaxation activities, namely physical exercise, enriching knowledge and skills, household help, quality time with the family, reviving old hobbies, inculcating new hobbies, movies and music were tabulated [Table 4].

To our surprise individual group who spent the considerable amount of time on most of these productive and relaxation activities had significant low scores for depression, anxiety and stress compared to others. Among all the above activities, spending quality time with family had more significantly lower depression (p = 0.000), anxiety (p = 0.002), and stress (p = 0.001) followed by physical exercise, enriching knowledge and skills.

General Views on Lockdown Experience

Among all the respondents, 371 (42 %) viewed lockdown experience as suffering and difficult to manage, obviously they had significantly high scores on the domains of DASS - 21 scale.

More than half of the respondents (54 %) were confident that the present medical system could treat them

successfully if they were infected with COVID-19 and this group had significantly lower depression (p = 0.000), anxiety (p = 0.004), and stress (p = 0.000) compared to others. Though majority of them (96 %) were with the Government decision of imposing complete lockdown for a long duration, only three-fifth of them (58 %) were completely satisfied with the measures taken by the Government.

More the level of satisfaction with the measures taken by the Government lesser is the depression and the relationship were statistically significant (p = 0.048). Most of the participants (96 %) reported that media (traditional and social media) played a significant role in influencing public response during the lockdown, whether it was positive or negative [Table 5].

Correlational Analysis

Spearman's correlation coefficient (ρ) was used to measure the strength of association between significant variables. We observed that, in those using time productively had significant and negative correlation for severity of depression (ρ = - 0.261, P = 0.000), anxiety (ρ = - 0.149, p = 0.000) and stress (ρ = - 0.169, P = 0.000) scores while excess time on media, restricting COVID-19 information and updates, distress due to excess smart phone exposure had significant and positive correlation with scores of all the three domains of DASS - 21 scale. Among these, distress due to excess time spent on smart phone had highest positive correlation with severity of depression (ρ = 0.280, p = 0.000), anxiety (ρ = 0.275, P = 0.000), and stress (ρ = 0.262, P = 0.000) [Table 6].

Source of Information and Knowledge on COVID-19 (n = 891)	Yes N (%)	No N (%)	Information Gained from the Below Sources is		
			Completely Authentic	Partly Authentic	Not Authentic
News channels & newspaper (Traditional media)	852 (96 %)	39 (4 %)	422 (47 %)	445 (50 %)	24 (3 %)
Social networking sites (Social media)	774 (87 %)	117 (13 %)	137 (15 %)	588 (66 %)	166 (19 %)
Books and journals	464 (52 %)	427 (48 %)	519 (58 %)	296 (33 %)	76 (9 %)
Friends and relatives	603 (68 %)	288 (32 %)	95 (11 %)	539 (60 %)	257 (29 %)
Health care professionals	606 (68 %)	285 (32 %)	747 (84 %)	112 (13 %)	32 (3 %)
Table 2. Source of Information and Knowledge on COVID-19					

Variables		Total N = 891 (%)	Depression n = 200 (%)	p value (Chi-Square)	Anxiety n = 138 (%)	p value (Chi-Square)	Stress n = 93 (%)	p Value (Chi-Square)
Average time spent at home during lock down in a day	< 16 hrs	116 (13 %)	34 (29 %)		23 (20 %)		13 (11 %)	
	16 – 23 hrs	259 (29 %)	49 (19 %)	0.714	36 (14 %)	0.710	26 (10 %)	0.894
	24 hrs	516 (58 %)	119 (23 %)		83 (16 %)		57 (11 %)	
Average time spent on media (traditional and social) in a day during the lockdown	Less than required	101 (11 %)	22 (22 %)		11 (11 %)		10 (10 %)	
	Appropriate time	386 (43 %)	58 (15 %)	< 0.001	45 (12 %)	< 0.001	30 (8 %)	0.040
	More than required (excess time)	404 (46 %)	120 (30 %)		82 (20 %)		53 (13 %)	
View on COVID-19 information on media	Giving reassurance	200 (22 %)	21 (11 %)		14 (7 %)		7 (3 %)	
	Half of it is useful	484 (54 %)	117 (24 %)	< 0.001	72 (15 %)	< 0.001	52 (11 %)	< 0.001
	Not useful at all	95 (11 %)	18 (19 %)		8 (8 %)		6 (6 %)	
	Creating panic in me	112 (13 %)	44 (39 %)		44 (39 %)		28 (25 %)	
Most common reason for you to forward COVID-19 related information to others on social media?	Never forward	249 (28 %)	59 (24 %)		31 (13 %)		33 (13 %)	
	For fun	38 (4 %)	11 (29 %)	0.639	10 (26 %)	0.119	4 (11 %)	0.353
	To educate others	586 (66 %)	127 (22 %)		93 (16 %)		55 (9 %)	
	Out of fear and panic	18 (2 %)	3 (17 %)		4 (22 %)		1 (6 %)	
Did you anytime restrict yourself watching COVID-19 information or updates on media to avoid fear or panic?	Never	441 (49 %)	82 (19 %)		56 (13 %)		36 (8 %)	
	Sometimes	363 (41 %)	94 (26 %)	0.007 (Mann-Whitney)	67 (15 %)	0.034 (Mann-Whitney)	45 (12 %)	0.037 (Mann-Whitney)
	Many times	87 (10 %)	24 (28 %)		15 (21 %)		12 (14 %)	
Did you anytime feel distressed spending more time on smart phone during the lockdown?	Never	148 (17 %)	7 (5 %)		4 (3 %)		4 (3 %)	
	Sometimes	200 (22 %)	34 (17 %)	< 0.001 (Mann-Whitney)	26 (13 %)	< 0.001 (Mann-Whitney)	18 (9 %)	0.001 (Mann-Whitney)
	Many times	543 (61 %)	157 (29 %)		109 (20 %)		71 (13 %)	
Table 3. Impact of Time Spent on Media and Smart Phone								

Variables		Total n = 891 (%)	Depression n = 200 (%)	p value (Chi-square)	Anxiety n = 138 (%)	p Value (Chi-Square)	Stress n = 93 (%)	p Value (Chi-Square)
How did you utilize extra time obtained compared to normal days during the lockdown?	Mostly wasted	271 (30 %)	103 (38 %)		60 (22 %)		41 (15 %)	
	Half time productive	434 (49 %)	82 (19 %)	<0.001	56 (13 %)	<0.001	43 (10 %)	0.001
	Mostly productive	186 (21 %)	19 (10 %)		14 (8 %)		7 (4 %)	
Do you frequently plan your day after waking up from the bed during the lockdown?	Yes	460 (52 %)	780 (17 %)	< 0.001	32 (7 %)	0.008	37 (8 %)	0.048
	No	431 (48 %)	121 (28 %)		82 (19 %)		57 (13 %)	
Physical Exercises	Yes	503 (56 %)	94 (19 %)	0.002	66 (13 %)	0.026	38 (8 %)	0.001
	No	388 (44 %)	106 (27 %)		72 (19 %)		55 (14 %)	
Enriching knowledge and skills	Yes	571 (64 %)	106 (19 %)	<0.001	75 (13 %)	0.009	50 (9 %)	0.028
	No	320 (36 %)	94 (30 %)		63 (20 %)		43 (13 %)	
Household help	Yes	769 (86 %)	165 (21 %)	0.075	117 (15 %)	0.571	75 (10 %)	0.093
	No	122 (14 %)	35 (29 %)		21 (17 %)		18 (15 %)	
Spending quality time with the family	Yes	746 (84 %)	148 (20 %)	<0.001	103 (14 %)	0.002	63 (8 %)	<0.001
	No	145 (16 %)	52 (36 %)		35 (24 %)		30 (20 %)	
Reviving old hobbies	Yes	444 (50 %)	95 (21 %)	0.454	57 (13 %)	0.029	40 (9 %)	0.164
	No	447 (50 %)	105 (23 %)		81 (18 %)		53 (12 %)	
Inculcating new hobbies	Yes	334 (37 %)	65 (19 %)	0.098	44 (13 %)	0.139	29 (9 %)	0.185
	No	557 (63 %)	135 (24 %)		94 (17 %)		64 (11 %)	
Movies and music	Yes	803 (90 %)	178 (22 %)	0.545	117 (15 %)	0.022	78 (10 %)	0.033
	No	88 (10 %)	80 (25 %)		21 (24 %)		15 (17 %)	
Table 4. Pattern of Time Spent on Various Productive and Relaxation Activities								

n= 891		Total n = 891	Depression n = 200 (%)	p Value (Chi-Square / Mann-Whitney)	Anxiety n = 138 (%)	p Value (Chi-square/ Mann-Whitney)	Stress n = 93 (%)	p Value (Chi-Square / Mann-Whitney)
What is your overall broad view on your lockdown experience?	Suffering	63 (7 %)	35 (55 %)	< 0.001	28 (45 %)	< 0.001	21 (33 %)	< 0.001
	Difficult to manage	308 (35 %)	91 (30 %)		62 (20 %)		45 (23 %)	
	A kind of break from routine	395 (44 %)	61 (15 %)		39 (10 %)		24 (6 %)	
	Happy & joyful	125 (14 %)	13 (10 %)		9 (7 %)		3 (2 %)	
Do you feel like to break the precautionary and preventive measures during the lockdown, out of boredom or frustration?	Many times	26 (3 %)	10 (38 %)	< 0.001	7 (27 %)	< 0.001	9 (35 %)	< 0.001
	Sometimes	209 (23 %)	72 (34 %)		50 (24 %)		33 (16 %)	
	Never	656 (74 %)	118 (18 %)		81 (12 %)		51 (8 %)	
By chance if you are infected by COVID-19, are you confident on present medical system, that you will be successfully treated?	No	71 (8 %)	23 (32 %)	< 0.001	15 (21 %)	0.004	16 (23 %)	< 0.001
	May be	336 (38 %)	95 (28 %)		66 (20 %)		40 (12 %)	
	Yes	484 (54 %)	82 (17 %)		57 (12 %)		37 (8 %)	
Are you satisfied by the measures taken by the Government so far in this COVID-19 Pandemic lockdown?	Not at all satisfied	62 (7 %)	20 (32 %)	0.048	17 (27 %)	0.119	13 (21 %)	0.119
	Partly satisfied	314 (35 %)	75 (24 %)		47 (15 %)		31 (10 %)	
	Completely satisfied	515 (58 %)	105 (20 %)		74 (14 %)		49 (9 %)	
Do you feel complete lockdown imposed in the country for these many days is a correct decision taken by Government?	No	38 (4 %)	15 (39 %)	0.010	12 (32 %)	0.005	8 (21 %)	0.029
	Yes	853 (96 %)	185 (22 %)		126 (15 %)		85 (10 %)	
Do you feel media plays a significant role in influencing public response to COVID-19 lockdown?	No	39 (4 %)	13 (33 %)	0.096	6 (15 %)	0.985	5 (13 %)	0.619
	Yes	852 (96 %)	187 (22 %)		132 (15 %)		88 (10 %)	

Table 5. General Views on Lockdown Experience

Variables n = 891		DASS 21 Severity Scores Spearman Correlation Coefficient (P Value)		
		Depression (n = 200)	Anxiety (n = 138)	Stress (n = 93)
How did you utilize the extra-time obtained compared to normal days during the lockdown?	Wasted mostly Half productive Productive mostly	- 0.261 (< 0.001)	- 0.149 (< 0.001)	- 0.169 (< 0.001)
Average amount of time spent on media during the lockdown	Less than required Appropriate time More than required	0.212 (< 0.001)	0.170 (0.001)	0.158 (< 0.001)
Did you anytime restrict yourself watching COVID-19 information and updates on media to avoid fear or panic?	Never Sometimes Many times	0.128 (< 0.001)	0.146 (< 0.001)	0.186 (< 0.001)
Did you anytime feel distressed spending more time on smart phone during the lockdown?	Never Sometimes Many times	0.280 (< 0.001)	0.275 (< 0.001)	0.262 (< 0.001)

Table 6. Correlation Analysis between Different Variables with Severity of Depression, Anxiety and Stress Scores on DASS - 21 Scale

DISCUSSION

Despite the tremendous advancement of medical sciences, technology in health, COVID-19 has rapidly spread around the world, which is a thwart to the psychological resilience of the public. Most of the countries including India had enforced complete lockdown to prevent human to human spread of this devastating virus. The COVID-19 pandemic lockdown brought many significant changes in the lives of many individuals making them away from their routine, most of them being away from their professional work, students away from schools, colleges and hostels, away from routine shopping practices, social gatherings, public entertainment, worship places and being house bound most of the time. This could certainly influence their time management pattern during the lockdown and media being the main source of communication with outside world, both these domains could significantly influence mental wellbeing of the individuals.

Most common source of information and knowledge of COVID-19 for the study sample was traditional and social media. Media had become a major source for disseminating all sorts of information to the public like Government authoritative information, lockdown regulations, allocating resources, preventive practices, medical knowledge, status of COVID-19 cases and played a crucial role as direct communication was minimized to a greater extent. But surprisingly, many participants opined COVID-19 information telecasted on traditional (53 %) and social media (85 %) were not completely authentic which is very alarming [Table 2]. Sharma et al. (2020)[20] study on mass media in India reports similar findings, in which 32 % were in view that there was a big difference between news and reality. A study on COVID-19 misinformation in India with the help of International Fact Checkers Network (IFCN), has shown a rise in the number of debunked stories on media, related to culture, cure, prevention and treatment, casualty, Government and doctored statistics, nature and the environment, business and economy, particularly after the announcement of lockdown.[21] The COVID-19 infodemic with huge volume of information telecasted about the pandemic, there is every chance for misinformation and fake news to be circulated and this could be one of the reasons for most of the individuals feeling information on media may not be completely authentic. All the above factors could amplify the perception of risk and could definitely affect the mental wellbeing of an individual and it was clearly evident in our study findings that depression, anxiety and stress were significantly more in the individuals who spent excess time on media (46 %). There is a need for traditional media to introspect themselves and try to technically filter the authenticity of the information they telecast in the situations like pandemics as more people follow the information telecasted on media rather than official Government sites. Though only 15 % of the study sample felt that information

disseminated on social media was completely authentic, 72 % of them reported to be forwarding information on social media many times not checking the authenticity, could incite panic in vulnerable people [Table 3]. Every individual need to realize that forwarding unauthentic and threatening information could impact the mental health of the society at large and need to act responsibly, be very selective in forwarding the information on social media. There is a need to set up specific policies for both traditional and social media in such emergency situations like pandemic crisis. Similar findings were reported by Ahmad et al..[22] (Iraq), Chao et al.[23] and Gao et al.[24] (China), where increase in social and online media exposure during COVID-19 was significantly associated with higher rates of panic, anxiety, stress, and depression.

India now has 504 million active internet users and the India's internet consumption rose by 13 % since the nationwide lockdown was put in place, whereas in cities it was 40 % rise.[25,26] These days most common means of use of internet is smart phones and during lockdown most of the individuals being housebound, obviously almost everyone who possessed smart phone had increased time spent on it for informational, essential, professional and recreational (entertainment, gaming) purposes and in some individuals unhealthy use (Pornography addiction, use of dark web) was also reported.[27] But this sudden transformation to excess smartphone use could influence the mental wellbeing, which was uniquely evident in our study findings that, 543 (61 %) individuals felt distressed due to their excess smart phone use during the lockdown and they had significant higher rates of depression, anxiety and stress compared to others [Table 3]. This excess smart phone use was profoundly seen in younger age and housebound group of the sample and our findings were comparable with findings of Singh et al. (2020) and Sohn et al. (2019) that problematic smart phone use is associated with increased odds of depression, anxiety, perceived stress, and poor quality of sleep.[10,28] So, there is a need to enlighten everyone that, smart use of smart phone is needed to improve the psychological resilience especially in pandemics like COVID-19.

There were many studies in the literature highlighting that, physical exercise can improve psychological wellbeing.[29,30] Exercise improve mental health by reducing anxiety, depression and by improving self-esteem and cognitive function, these improvements in the mood are proposed to be caused by exercise-induced increase in blood circulation to the brain and by an influence on the hypothalamic-pituitary-adrenal (HPA) axis, and thus on the physiological reactivity to stress.[31,32] According to our study findings individuals who were physically active in the form of exercises and household help had statistically less scores on DASS - 21, clearly highlighting the importance of physical activity during the lockdown. Enriching knowledge and skills, spending quality time with the family and listening to music were also found be having significant better mental wellbeing [Table 4]. Grover S et al. (2020) study reported marked improvement in family relationships in nearly half of their responders after the beginning of lockdown period.[13] Good family support and spending more time with family have many benefits like decreasing the risk of depressive

symptoms, teaching effective conflict resolution, promotes adaptability and resilience, boosts self-confidence, reduces stress, better physiological functioning, higher immune function and improves overall wellbeing.[33,34] Thoma et al. (2013) reports listening to music reduces endocrine and psychological stress response and promotes mental wellbeing.[35] All these study findings are in unison with our study findings of negative correlation of depression, anxiety, and stress with relaxing and productive usage of most of the time during the lockdown [Table 6]. Though many are aware of the importance of time management and relaxation activities in improving psychological resilience, its implementation in a crisis-situations like pandemic lockdowns to balance the stress and anxiety needs to be widely propagated as it is highly essential in ongoing fight with COVID-19, as more individuals are expected to be in isolation in future.

In situations like COVID-19, authorities need to acknowledge and ensure that adequate measures are taken at appropriate time, more importantly communicate it to the people on regular basis with the help of media authentically, so that it imparts confidence in people to fight the COVID-19 collectively, which in turn improves mental wellbeing of the society at large. And on individual basis it is advisable to follow the tips on WHO page of mental health during COVID-19 which includes, be aware of authentic information from authorities from trusted media, have a daily routine as far as possible, minimize news feeds, regular online social contact, minimize the screen time, use social media to promote hope, limit alcohol and drug use, help others and support health care workers.[36]

CONCLUSIONS

To conclude, according to present study about one fourth of the people were screened to be having one or the other mental health issues during the COVID-19 pandemic lockdown. This study highlights the positive and negative predictors of mental health from the domains of impact of media and time management pattern. There is a need for mental health professionals to highlight these predictors in coordination with authorities for better mental wellbeing of the society in ongoing fight with COVID-19.

Limitations
However, this study has certain limitations, despite the best efforts we could receive only 891 responses from 11 states across India and included the people who were educated and could use smartphone, which may not truly be representative of people of entire country. Online self-reported levels of mental health status may not always be aligned with assessment by mental health professionals. However, considering the situation of lockdown, this was the best possible method to reach people and analyse their mental status in relation with different domains.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.

REFERENCES

[1] Cruz MP, Santos E, Cervantes MAV, et al.. COVID-19, a worldwide public health emergency. Revista Clinica Espanola 2020;221(1):55-61. http://doi.org/10.1016/j.rce.2020.03.001.

[2] Mahase E. China coronavirus: WHO declares International emergency as death toll exceeds 200. BMJ Ed 2020;368:m408.

[3] Jeffrey G, Kai S. Modi Orders 3-Week Total Lockdown for 1.3 Billion Indians. The New York Times. [Last accessed on Mar 28, 2020].

[4] The Hindu Net Desk. https://www.thehindu.com/news/national/india-coronavirus-lockdown-may-31-2020-live-updates/article31714194.ece. [Last accessed on 2020 Jun 10]

[5] Djalante R, Shaw R, DeWit A. Building resilience against biological hazards and pandemics: COVID-19 and its implications for the Sendai Framework. Prog Disaster Sci 2020;6:100080.

[6] Perez-Lugo M. Media uses in disaster situations: a new focus on the impact phase. Sociological Inquiry 2004;74(2):210-225.

[7] Hao K, Basu T. The corona virus is the first true social-media infodemic. http://www.technologyreview.com/s/615184/the-coronavirus-is-the-first-true-social-media-infodemic/ [Last accessed on 2020 Apr 10]

[8] Depoux A, Martin S, Karafillakis E, et al. The pandemic of social media panic travels faster than the COVID-19 outbreak. J Travel Med 2020;27(3):taaa031.

[9] Ho CS, Chee CY, Ho RC. Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. Ann Acad Med Singap 2020;49(3):155-160.

[10] Singh B, Singh P, Singh U, et al. Students' perceived stress and internet addiction during the lockdown in India. Indian J Private Psychiatry 2020;14(1):30-34.

[11] Bradbury-Jones C, Isham L. The pandemic paradox: the consequences of COVID-19 on domestic violence. Journal of Clinical Nursing 2020;29(13-14):2047-2049.

[12] Gupta R, Grover S, Basu A, et al. Changes in sleep pattern and sleep quality during COVID-19 lockdown. Indian J Psychiatry 2020;62(4):370-378.

[13] Grover S, Sahoo S, Mehra A, et al. Psychological impact of COVID-19 lockdown: an online survey from India. Indian J Psychiatry 2020;62(4):354-362.

[14] Vishwak RV, Satya RK, Tabitha J, et al. Psychosocial impact of covid-19 lockdown on mental wellbeing among 11 states of India: a Markov modeling approach. Journal of Psychiatry and Psychiatric Disorders 2020;4:158-174.

[15] Ramasubramanian V, Mohandoss AA, Rajendhiran P, et al. Statewide survey of psychological distress among people of Tamil Nadu in the COVID-19 pandemic. Indian J Psychol Med 2020;42(4):368-373.

[16] Wang C, Pan R, Wan X, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (Covid-19) epidemic among the general population in China. International Journal of Environmental Research and Public Health 2020;17(5):1729.

[17] Mazza C, Ricci E, Biondi S, et al. A nationwide survey of psychological distress among Italian people during the COVID-19 pandemic: immediate psychological responses and associated factors. International Journal of Environmental Research and Public Health 2020;17(9):3165.

[18] Lovibond LF, Lovibond SH. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the beck depression and anxiety inventories. Behaviour Research and Therapy 1995;33(3):335-343.

[19] Le M, Tran T, Holton S, et al. Reliability, convergent validity and factor structure of the DASS-21 in a sample of Vietnamese adolescents. PLoS One 2017;12(7):e0180557.

[20] Sharma P, Gupta S, Kushwaha P, et al. Impact of mass media on quality of life during covid-19 pandemic among Indian population. International Journal of Science and Healthcare Research 2020;5(3):260-267.

[21] Prachi S. http://www.indiaspend.com/manipulative-fake-news-on-the-rise-in-India-under-lockdown-study. [Last accessed on 2020 May 28].

[22] Ahmad AR, Murad HR. The impact of social media on panic during the COVID-19 pandemic in Iraqi Kurdistan: online Questionnaire Study. J Med Internet Res 2020;22(5):e19556.

[23] Chao M, Xue D, Liu T, et al. Media use and acute psychological outcomes during COVID-19 outbreak in China. Journal of Anxiety Disorders 2020;74:102248.

[24] Gao J, Zheng P, Jia Y, et al. Mental health problems and social media exposure during COVID-19 outbreak. PLoS One 2020;15(4):e0231924.

[25] Amrita M. http://www.hindustantimes.com/india-news/india-s-internet-consumption-up-during-covid-19-lockdown-shows-data/story-ALcov1bP8uWYO9N2TbpPIK.html. [Last accessed on 2020 Apr 21]

[26] News 18 Tech. http://www.news18.com/news/tech/internet-traffic-in-india-sees-40-spike-in-march-due-to-covid-19-lockdown-act-fibernet-2612669.html. [Last accessed on 2020 May 9]

[27] Banerjee D, Rao TSS. Sexuality, sexual wellbeing and intimacy during COVID-19 pandemic: an advocacy perspective. Indian Journal of Psychiatry 2020;62(4):418-426.

[28] Sohn SY, Rees P, Wildridge B, et al. Prevalence of problematic smartphone usage and associated mental health outcomes amongst children and young people: a

systematic review, meta-analysis and GRADE of the evidence. BMC Psychiatry 2019;19(1):356.

[29] Scully D, Kremer J, Meade MM, et al. Physical exercise and psychological wellbeing: a critical review. Br J Sports Med 1998;32(2):111-120.

[30] Sharma A, Madaan V, Petty FD. Exercise for Mental health. Prim Care Companion J Clin Psychiatry 2006;8(2):106.

[31] Callaghan P. Exercise: a neglected intervention in mental health care? J Psychiatr Ment Health Nurs 2004;11(4):476-483.

[32] Guszkowska M. Effects of exercise on anxiety, depression and mood [in Polish]. Psychiatr Pol 2004;38(4):611-620.

[33] Thomas PA, Liu H, Umberson D. Family relationships and well-being. Innovation in Aging 2017;1(3):1-11.

[34] Seeman TE. Social ties and health: the benefits of social integration. Ann of Epidemiol 1996;6(5):442-451.

[35] Thoma MV, La Marca R, Bronnimann R, et al.. The effect of music on the human stress response. PLoS One 2013;8(8):e70156.

[36] World Health Organization. Healthy At Home - Mental health. https://www.who.int/campaigns/connecting-the-world-to-combat-coronavirus/healthyathome/healthyathome---mental-health [Last assessed on 2020 Sep 15]