Original Research Article

Impact of social media on mental health among adults during the period of lockdown in Delhi- NCR: A cross sectional study

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A B S T R A C T

Purpose: To study the impact of social media during time of COVID induced lockdown on the mental well-being of residents of Delhi-NCR.

Materials and Methods: A cross-sectional study was conducted among 405 residents of Delhi-NCR. Data on socio- demographic profile, social media exposure and anxiety was collected using self-administered pre validated questionnaire. To assess the association between categorical values and p value Chi square test was used with p value of 0.05 considered statistically significant.

Findings: This study included 405 residents from Delhi-NCR comprising of 59.5%females and 40.5% males. Participants who are engaged in devoting more than 3 hour on social media and use it more frequently are suffering from moderate-severe anxiety and is found to be statically significant. Majority of the participants who felt negative (N= 49, 30.8%) about the social media coverage of Covid-19 suffered from anxiety as compared to those who felt positive (N=33, 15.6%).

Originality: It is a piece of Original research and suggest upon Government taking interventional steps and attention to combat anxiety through continuous health promotion activities related to COVID, serious actions against spread of misinformation, dedicated online counseling tele-centers.

1. Introduction

In December 2019, yet another pathogenic human coronavirus named as novel coronavirus (a.k.a COVID – 19) was recognized in Wuhan, China and was declared as a pandemic on February 11, 2020.[1] The World Health Organization (WHO)weekly statistics report as of 2nd August, 2020, India alone experienced as high as 5, 67,730 active cases leading to 37,364 deaths[2] though it seems to be underestimated. As the situation is rapidly evolving, it is difficult to define the scope of corona virus as yet.

To curtail the spread of the infection, nations have adopted lockdown measures to implement social[3] and millions of people have been quarantined resulting in restricted movement. The long social isolation, break in earning livelihood, constant fear of catching infection coupled with uncertainty regarding the timeline of the pandemic has resulted in physical and mental anxiety among the population.[4] Studies have indicated that there is an increase in prevalence of depression, anxiety, post-traumatic stress, insomnia and in many cases suicides too.[5]

Social media can act as a double- edged sword, whereby, on a positive side, it can be the best way of informing people about the treatment and preventive options and all the relevant updates to the common people, likewise on the other side can contribute to 'infodemic' resulting in misinformation and information overloading.[6] World Health Organization with the help of Facebook created a WHO health alert platform capable of reaching 4.2 billion populations with aintent to provide accurate, instant information and at the same time stop spread of misinformation among the masses.[7] Still misinformation

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about coronavirus is going viral, faster than the disease itself as most people prefer trusting social sites than the authorized sites.[8]

COVID-19, like any other fast spreading infection introduced with exponentially increasing barrage of misinformation constantly thrown at us via social media, fueling stress and mass hysteria.[9] In an earlier study[10] social media has contributed to negatively affecting control measures in India by influencing panic purchase of masks and sanitizers resulting in stock out, spreading fake claims of herbal medicines and immunity boosters and news of spiritual and religious way of prevention and treatment. Verma and Mishra[11] in their study had identified the prevalence of depression, anxiety and stress among Indian population two weeks after the initial lockdown. Earlier studies about influence of social media on Ebola outbreak revealed though social networks helped Centre of Disease Control to establish effective communication with the [12] public They also helped in spreading conspiracy theories, false accusations and information about fake treatments.[13] But there is a paucity of literature related to association between mental health and use of social media in India during the pandemic. So, the current study aims to understand the association between mental anxieties faced by the population and social media usage during COVID -19 outbreaks.

2. Materials and Methods

2.1. Study design and participants

A cross-sectional study was conducted through online mode due to lockdown situation and Samples were collected through convenience sampling. Link to the Google Survey was posted on various social media platforms and circulated through emails and instant messaging applications. Data collection was conducted from 23rd May, 2020 to 26th May, 2020 at 11 am IST. All ethical procedures were followed. The participants were provided information related to the objectives and purpose of the study and prior written consent was obtained through email. All participants considered were between 18 – 65 years of age andresidents of Delhi -NCR. Participants who were affected due to corona and patients with chronic disease like cancer, stroke, already diagnosed with mental health problems were excluded from the study. In order to maintain anonymity no personal identification were collected. The participants were informed that they can withdraw from participating any time if they wish to do so.

Sample size calculated using Cochran formula with 95% confidence interval (CI) and an uncertainty of 50%, with a relative precision of 5%, and 10% nonresponse rate as 384. After factoring in the anticipated non-response rate of 10% and rounding off, a sample size of 430 was finalized.

2.2. Measures

Demographic profile – To assess the demographic status of the study participants following covariates were analyzed: Gender, Age, Sex, education status, working status, occupation.[14]

Social media exposure (SME) –Social Media Exposure scale was used for assessing the impact of social media by asking how often respondents during the past month were exposed to social media and how frequently and for what information they resorted to social media practices during the lockdown and related questions.[15]

Mental health anxiety was assessed in the current study with the help of Generalized Anxiety Disorder Assessment scale (GAD-7) which consists of 7 symptoms. Response options were "not at all," "several days," "more than half the days," and "nearly every day," scored as 0, 1, 2, and 3, respectively. Scores of 5, 10 and 15 represent cut points for mild, moderate and severe anxiety respectively.[16]

2.3. Statistical analysis

Statistical Package of Social Science (SPSS) software Version 25 is used for Data analysis. The Categorical Data is presented as percentages analyzed through descriptive statistics. The Pearson's Chi- squared test was also applied to find out the association between dependent and independent variables. Bivariate analysis has been run to study the association between socio-demographics, Social media usage and anxiety disorder considering the significance level of $p<0$ and confidence interval (CI) of 95%.

3. Results

Based on the sample size calculated, out of the 430 residents of Delhi NCR who were initially approached, only 416 agreed to sign the consent form. Out of these 11 participants had to be excluded based on age and residence criteria. Final sample size was 405 with response rate of 97.4%.

Socio- demographic characteristics of the study participants are represented in Table 1. Of the total study participants more than half of the population were female (59.5%) and maximum participants were in the age group of 20-40 years (87.2%) with majority of them being students (42.5%). Nearly 51.8% of the respondents were working during lockdown. Ninety percent of the participants were educated above school level (Graduate = 37.5%, Post Graduate = 52.8%).

Almost all participants 95% are using social media regularly and nearly 60% of the participants engaged in up to three social media platforms. Figure 1 shows that 95% of the participants preferred Whatsapp followed by Instagram (74.6%) and Facebook (63.5%) as a source of information related to COVID.
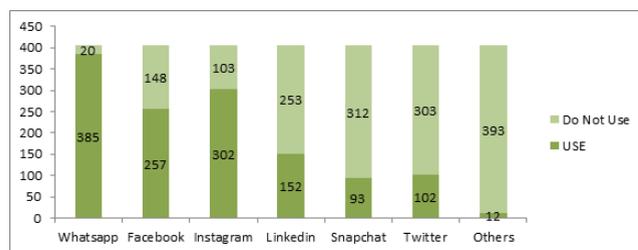
Fig. 1: Preferred social media platform among the respondents

The overall anxiety was assessed using GAD- 7 scale amongst study participants. 41.7% respondents showed minimal anxiety, 36.3% showed mild anxiety, 12.3% and 9.60% participants expressed moderate and severe anxiety levels respectively (Figure 2).
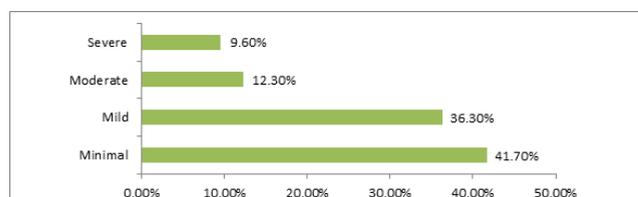
Fig. 2: Level of anxiety among study participants

On analyzing the influence of socio-demographic factors with prevalence of moderate to severe anxiety according to GAD scale, the association was higher amongst females (N= 58, 24.1%)(Table 2). Similarly, the anxiety level was minimal amongst the undergraduates (N=81, 37.9%) and was found to be statistically significant (P=0.051). Participants who were not working during the lockdown (N=50, 25.6%) were at higher side of facing Moderate to Severe anxiety level.

On analysis of influence of type of social media used against anxiety reveled that there was not much significant association. 42% of Facebook and 43.4% of LinkedIn users had minimal anxiety while 41% snap chat users and 40% twitter users suffered from Minimal to Mild anxiety. Further analyzing the social media influence on anxiety revealed interesting features (Table 3). Participants who are engaged in devoting lesser time (Less than 1 hour) on social media gathering information related to Covid are comparatively facing minimal anxiety level (N=132, 46.6%), as compared to people who are devoting more time (more than 3 hours) on social media and suffering from moderate-severe anxiety (N=16, 57.1%). The participants engaged frequently (N=40, 30.1%) in social media related activities who are suffering from moderate to severe level of anxiety are found to be statically significant (P=0.029). Majority of the participants who felt negative (N= 49, 30.8%) about the social media coverage of Covid-19 suffered from anxiety as compared to those who felt positive (N=33, 15.6%). On comparing the usage of social media to online and print sources, there was not much difference in the moderate to severe anxiety level among online, social media and Television as source of information. On minimal to mild anxiety level there were greater proportion of participants who accessed online sites and Television as source compared to social media.

More than 70% of the respondents were looking for information related to COVID cases, Government updates, lock down information and nearly 50% for treatment options using social media. Among these majorities of them were in minimal to mild anxiety scale. More than half of the respondents (59%) felt that social media distracted them with news and information related to COVID when they could be productive carrying out other duties. Their proportions were significant at all anxiety levels from mild to severe compared to those who felt social media was non-distractive.

4. Discussion

With a continuous exploding of new digital platforms and apps consumers are drowned with information leading to what is known as "information overload"[17] through social media[18] and there has been raised concerns about misinformation and the accuracy of the information released through such sources. On other hand social media also has the potential to help the consumers handle the information overload through socially mediated information selection.[19] While earlier research shows that the credibility of information received through social media has the potential to bring about a change in infection prevention behavior like hand washing, maintaining social distance etc.[20] intensive mass media can also spark fear, anxiety, hysteria etc.[20]

A recent cross-sectional study published in the Lancet among the Chinese population[4] reported that while social media was the trusted and frequently used platform with engagement of more than 82.0% of participants being frequently exposed to social media, 22.6% of them experienced anxiety. It has been a consistent phenomenon that mental health is impacted as a definite measure in the times of pandemic hit and thus cannot be ignored.

When the participants were surveyed regarding increase in frequency of their social media usage during lockdown, nearly 70% respondents were affirmative. This indicates that during lockdown as people movements are restricted and people were working from home, they were a greater usage of social media for communication. Similar research conducted by a market research firm Nielsen published on 28th March, 2020 in the economic times observed that – pandemics are resulting in keeping people at their homes resulting in people focusing and devoting their time reading, contributing and influencing on social media.[21] A major finding of this study is that most of the respondents engaged in multiple forms of social media usage (almost 70%) and content related to the COVID-19 epidemic. In fact nearly

Table 1: Demographic characteristics of study participants (N=405)

Variables	Frequency (n)	Percent (%)
Gender		
Female	241	59.5%
Male	164	40.5%
Age of respondent		
20-40 years	353	87.2%
40-60 years	43	10.6%
Above 60 years	9	2.2%
Education profile		
PG	152	37.5%
UG	214	52.8%
Up to 12th Class	39	9.6%
Current Working Status		
Not working	195	48.1%
Working from home	169	41.7%
Working from outside	41	10.1%
Regular Social Media Usage		
No	20	4.9%
Yes	385	95.1%

Table 2: Association between socio-demographic characteristics and GAD new scale

Variables	Generalized Anxiety Disorder Scale				Pearson chi-square Test	P- Value
	Minimal N (%)	Mild N (%)	Moderate N (%)	Severe N (%)		
Gender						
Male (N=164)	77 (47.0%)	56(34.1%)	15(9.1%)	16(9.8%)	4.442	0.218
Female (N=241)	92 (38.2%)	91(37.8%)	35(14.5%)	23(9.5%)		
Education Profile						
PG (N=152)	69(45.4%)	56(36.8%)	14(9.2%)	13(8.6%)	11.016	0.088
UG (N=22)	81(37.9%)	84(39.3%)	27(12.6%)	22(10.3%)		
Up to 12th class (N=4)	19(48.7%)	7(17.9%)	9(23.1%)	4 (10.3%)		
Current Working Status						
Not working (N=195)	71(36.4%)	74(37.9%)	32(16.4%)	18(9.2%)	10.974	0.089
Working from home (N=14)	81(47.9%)	59(34.9%)	15(8.9%)	14(8.3%)		
Working from outside (N=7)	17(14.5%)	14(34.1%)	3(7.3%)	7(17.1%)		
No of Social Media Platform Used						
Up to 3 (N=244)	103(42.21%)	83(34.011%)	32(13.11%)	26(10.65%)	1.879	0.598
Above 3 (N=161)	66(40.99)	64(39.75)	18(11.18%)	13(8.07%)		

40% were using more than three social media platforms. In an earlier study conducted by online marketplace IZEA who surveyed 949 US internet users to help predict how consumer behaviors might change in the event of a COVID-19 lockdown, 64% expect their YouTube usage to increase, followed by a 63% increase in Facebook, and a 43% increase in Instagram usage.[22] Another such study also reported preference of Facebook amongst 68% of the participants along with 90% of the participant active on at least one form of social media.[23] In the current study it was observed that Whatsapp is highly popular amongst the participants followed by Instagram and Facebook when it comes to social media.

It has been earlier observed that people are generally interested in understanding the mortality patterns and treatment options[24] during the pandemic and we observed a similar pattern with approximately 70% of the participants who were keen in following the COVID bulletin related to mortality trends and 50% were interested in treatment options being developed. The source and type of information that is availed from the social media influences mental stress and psychological problems.[25] Second major

Table 3: Bivariate analysis of variable related to social media characteristics and GAD new scale

Variables	Generalized Anxiety Disorder				Pearson chi-square Test	P- Value
	Minimal	Mild	Moderate	Severe		
Time spent on social media						
<1 hour (N=50)	32(64.0%)	8(16.0%)	7(14.0%)	3(6.0%)	32.585	0.000
>3 hour (N=166)	47(28.3%)	69(41.6%)	25(15.1%)	25(15.1%)		
1-3 hour (N=189)	90(47.6%)	70(37.0%)	18(9.5%)	11(5.8%)		
Frequency of information retrieval about health or medical topics						
Frequently (N=133)	47 (35.3%)	46 (34.6%)	24 (18%)	16 (12%)	11.423	0.076
Rarely (N=119)	58 (48.7%)	45 (37.8%)	9(7.6%)	7 (5.9%)		
Regularly (N=153)	64 (41.8%)	56 (36.6%)	17(11.1%)	16(10.5%)		
Most preferred media for updates on Covid-19 status						
Newspaper (N=41)	26 (63.4%)	13 (14.9%)	0 (0%)	2 (4.9%)	23.505	0.005
Online sources (N=150)	57 (38.0%)	57 (38.0%)	20 (13.3%)	16 (10.7%)		
Social Media sites (N=51)	14 (27.5%)	17 (33.3%)	10 (19.6%)	10 (19.6%)		
Television (N=163)	72 (44.2%)	60 (36.8%)	20 (12.3%)	11 (6.7%)		
Change in social media usage frequency in past one month						
Can't say (N=81)	40 (49.4%)	24 (29.6%)	10 (12.3%)	7 (8.6%)	7.945	0.242
Decreased (N=35)	11 (31.4%)	16 (45.7%)	7 (4.3%)	1 (2.9%)		
Increased (N=289)	118 (40.8%)	107 (37.0%)	33 (11.4%)	31 (10.7%)		
Type of Information related to Coronavirus retrieved form social media						
1. Covid bulletin and cases updates						
Yes(N=295)	130(44.1%)	107(36.3%)	37(12.5%)	21(7.11%)	8.570	0.036
No (N=110)	39 (35.5%)	40 (36.4%)	13(11.81%)	18(16.36%)		
2. Treatment options						
Yes (N=207)	80 (38.6%)	81 (39.1%)	27(13.04%)	19(9.17%)	8.570	0.036
No (N=198)	89 (44.9%)	66 (33.3%)	23(11.61%)	20(10.10%)		
3. Lockdown Measures and Guidelines						
Yes (N=301)	127(42.2%)	113(37.5%)	35(11.6%)	26(8.6%)	2.248	0.523
No (N=104)	42 (40.4%)	34 (32.7%)	15(14.4%)	13(12.5%)		
4. Community perception						
Yes (N=76)	21 (27.6%)	37 (48.7%)	6(7.9%)	12 (15.8%)	13.599	0.004
No (N=328)	148(45.0%)	110(33.4%)	44(40.6%)	27(31.7%)		
5. Government updates						
Yes (N=286)	121(42.3%)	108(37.8%)	35(12.2%)	22 (7.7%)	4.458	0.216
No (N=119)	48 (40.3%)	39 (32.8%)	15(12.6%)	17(14.3%)		
Feelings about the social media coverage about Covid 19						
Mixed (N=34)	13(38.2%)	14 (41.2%)	6 (17.6%)	1 (2.9%)	17.629	0.007
Negative (N=159)	53 (33.3%)	57 (35.8%)	27 (17.0%)	22 (13.8%)		
Positive (N=212)	103 (48.6%)	76 (35.8%)	17 (8.0%)	16 (7.5%)		
Perception about social media as being counter productive						
No (N=165)	81 (49.1%)	60 (36.4%)	14 (8.5%)	10 (6.1%)	10.662	0.014
Yes (N=240)	88 (36.7%)	87 (36.3%)	36 (15%)	29 (12.1%)		
Experience related to push promotion of Covid news and updates						
No (N=76)	40 (52.6%)	21 (27.6%)	8 (10.5%)	7 (9.2%)	4.868	0.182
Yes (N=329)	129(39.2%)	126(38.3%)	42(12.8%)	32 (9.7%)		

finding of the study is that among those respondents who frequently used social media platforms 58% suffered from mild to severe anxiety levels (36.3% mild; 12.3% moderate and 9.6% severe). Such an observation has been shown in an earlier study where direct correlation between social media usage and anxiety levels were identified.[26] In a landmark study conducted to assess the mental health needs of the Indian population conducted amongst 662 respondents through online survey[27] identified high anxiety level. However, several other factors associated with lockdown such as social distancing, loneliness, uncertainty related to treatment options, fear of COVID stigma, economic paradigm shift all might contribute to serious mental health troubles and anxieties. More than half of the participants had a positive approach towards social media. Still, greater proportion felt that social media usage was counter-productive; they felt that instead of following social media activities they could have spent their time in more productive activities. Such low level trust in social media information during epidemics has been reported earlier.[28] In spite of this, greater proportion of participants were interested in using social media to follow Government updates (71%) which is indicative of the trust and credibility on the Government related to COVID. This contrary to the earlier such studies that indicated less trust on the Government sources.[29] The increased trust people exhibit in this study is a reflection on some of the initiatives taken by the Indian Government to control misinformation by setting up Whatsapp Call Centre, Government sponsored tracking application 'Arogya setu', collaborating with Google, Facebook, Twitter etc to provide authorized information and involvement of high government officials including prime minister of the country in interacting with the countrymen through social media.

5. Limitation

There are few limitations to the current study. Due to lockdown situation in the country the survey was conducted online through convenience sampling. Hence the results cannot be generalized to the entire population. There may be biases in the responses provided by the participants as it is self-reported.

6. Way Forward

The current study was limited to general public during lockdown. Now the lockdown situations are being eased out slowly and people have started moving about. Still the corona epidemic has not been tackled completely. People though are adopting have not returned back to their old way of life before corona. Social distancing and use of virtual world for work, commerce, entertainment etc., is the new norm. Dependency is now more on online platforms and social media networks. Many people have lost their jobs and permanent shelter. More and more health workers, nurses, doctors are getting infected as they treat more and more COVID patients.

7. Conclusion

In conclusion, our findings suggest that with the increase in social media exposure during the COVID-19 outbreak, there are mild, moderate and severe anxiety issues that people are facing as social media is a popular medium for many people to share their thoughts and emotion.[30] The sudden onslaught of the outbreak and the fact there are no treatments available other than quarantine and social distancing has left people constantly worrying about health and scouring information through online to the possibility of Cyberchondria[31] have provided mental health services through telephonic or online consultation, providing awareness through Arogya Setu application, chat bots and outpatient consultation. In addition to these more attention should be paid to combat anxiety by setting up continuous health promotion activities related to COVID, serious actions against spread of misinformation, dedicated online counselling tele-centers. Broadcast of more positive news and events related to overcoming corona infection, allying the fears of the public regarding economy low down and job losses, more focused support to development of vaccines and cure, allocation and availability of resources to tackle the epidemic are few of the actions that need to be the focal point of the policy and decision makers.

While the Government both Central and State are working towards this by providing evidence based and authorized information through their sources, the private players should participate in spreading credible information and avoid spreading misinformation. Though all the above mentioned viewpoints may help in reducing mental stress and anxiety among the masses, it is important for the individuals to choose between the need to be informed and being overwhelmed by excessive information. It is imperative that they adopt strategies like media refusal, avoiding news, selective scanning, less media usage timing for using the social media effectively for COVID information and avoiding mental anxiety and stress.[32]

8. Source of Funding

None.

9. Conflict of Interest

None.

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