Original Research Article

Influence of social media exposure on mental health in relation with covid-19 pandemic in a tertiary care hospital

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Abstract

Introduction: WHO (World Health Organization) declared Covid 19 as a pandemic on 11 March 2020 and issued specific guidelines on how to handle the global crisis. The virus spreads through tiny respiratory droplets when an infected person coughs, sneezes, and speaks, and by aerosols that tend to remain in the air and surfaces for a longer time. When people come into contact with these contaminated surfaces, they also get infected. Covid-19 transmissibility has been estimated at 4.08, suggesting that on average, every Covid-19 infected person will spread the infection to 4 new persons.**Materials and Methods:** This cross-sectional study was conducted online from May 15th, 2020, to May 25th, 2020, which is the 4th phase of lockdown when the infection rate was increasing alarmingly. Informed consent obtained from people with given assurance of no personal identification details will be revealed, such as personal phone number or mail ID obtained. People above 18 years and people from various districts of West Bengal in India were included in this study. The study consisted of basic socio-demographic details, statements regarding usage of social media to get information about Covid 19, and questions in the Depression, Anxiety and Stress Scale and GHQ-12.**Results:** 845 (70.4 %) people were graduates or postgraduates, and 111 (9.2 %) were Ph.D. holders. 639 (53.2 %) people were married. 843 (70.3 %) people have employed either self or private or government sector and 49 (4 %) people though native to the state of West Bengal lived in other states. As shown in Table 1, the distribution of the study population in terms of age group, sex, education, occupation, marital status, and domicile was not uniform between social media exposure. With relation to social media exposure, 35.5 % of people (427) reported as 'often & most often and 37.9 % of people reported as 'some time'.**Conclusion:** Social media has become a tool for news collection, and people exposed to social media were unaware of the reliability of the news, which plays a significant role in creating irrational beliefs & unscientific action towards Covid-19 pandemic management. This study revealed a significant correlation between social media exposure and mental health issues. Mental health issues are going to be the ongoing problem that affects the country's-states, socioeconomic balance, and more attention has to be paid to it along with the battle of containing the Covid-19.

Keywords: WHO, Depression, Anxiety and Stress Scale and GHQ-12.

Introduction

WHO[1] (World Health Organization) declared Covid 19 as a pandemic on 11 March 2020 and issued specific guidelines on how to handle the global crisis. The virus spreads through small respiratory droplets when an infected person coughs, sneezes, and speaks, and by aerosols that tend to remain in the air and surfaces for a longer time.When people come into contact with these contaminated surfaces,they also get infected. Covid-19 transmis-sibility has been estimated at 4.08, suggesting that on average, every Covid-19 infected person will spread the infection to 4 new persons[1].As of 3rd August 2020, the WHO reported 1,79,18, 582 cases and 6,86,703 deaths worldwide and 5,86,244 confirmed cases in India, with 39,795 total deaths as of August 5th as released by the Indian Ministry Of Health And Family Welfare. Maharashtra & West Bengal in India, being in the top 2[2].This global outbreak has created panic among people and triggered mental health problems. Based on previous findings, it had been found that the Covid-19 pandemic has caused a severe psychological impact on
people, affecting their personal and social life. As an individual, during a pandemic, a person is likely to experience anxiety of falling sick and dying, feelings of helplessness, and other stigma associated with the illness[4]. Psychological reactions of people during any public health emergency play a key role in controlling the outbreak and dealing with emotional distress, and the prevalence of mental health problems increases during such outbreaks, which was also evident during this Covid-19 pandemic[5]. The official departments and various NGOs have stepped in to help in this crisis by providing awareness, essential commodities. Many Health organizations have started tele-consultation and are providing counseling services[6]. Though Indian central & state Governments and national & regional media have been regularly providing awareness and updating the prevalence of Covid 19, people using several social media platforms such as Facebook, What's App, YouTube have been circulating information that is sometimes incorrect and misleading. This has been infusing stigma about the illness and causing panic among people[7].The aim of the study is to understand the three major mental health conditions such as depression, anxiety & stress among people in India and their association with social media exposure.

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Materials and methods

This cross-sectional study was conducted online from May 15th, 2020, to May 25th, 2020, which is the 4th phase of lockdown when the infection rate was increasing alarmingly. Informed consent obtained from people with given assurance of no personal identification details will be revealed, such as personal phone number or mail ID obtained. Ethical approval also taken from the institute. People above 18 years and people from various districts of West Bengal in India were included in this study. The study consisted of basic socio-demographic details, statements regarding usage of social media to get information about Covid 19, and questions in the Depression, Anxiety and Stress Scale and GHQ-12.An online survey through

Google survey platform in English to assess the mental health problems among people during Covid-19 and shared in public platforms. In total, 1,232 participants took part in the survey. Thirty-two incomplete samples were excluded, and 1200 participants from various districts of West Bengal were involved in this study.Based on previous studies, three major mental disorders such as depression, anxiety & stress were assessed in the current study. GHQ-12 is a measure of current mental health and was developed by Goldberg in 1970.[8] Each item is rated on a 4-point scale (less than usual–no more than usual–Rather more than usual–more than usual). It gives a total score of 36, and the most common scoring method is bi-modal (0-0-1-1) and Likert scoring style (0-1-2-3).A self-reporting scale called Depression, Anxiety and Stress Scale consisting of 21 Items (DASS-21–short version) was used. It is a 4-pointLikert scale developed by Lovibond, S.H. & Lovibond, P.F. (1995) used to assess the levels of depression, anxiety & stress. DASS-21 contains seven items for each disorder, and the summed scoring indicates the severity of each disorder ranging from normal, mild, moderate, severe &extremely severe. Scores of the DASS 21 has to be multiplied by two and then summed. The total score of the items of each disorder indicates its severity level.A questionnaire was prepared to evaluate the social media exposure about Covid-19 "how involved are you when you receive information about Covid-19 on social media platform" and scored with 3 points Likert scale " Never, Less, Sometimes, Often, Very Often."The following covariates were included in this study: gender, age (18 - 25, 26 - 30, 31 - 40, 41 - 50, 51 - 60, 61 & above), educational level (till school, diploma, graduation, post-graduation, Ph.D., miscellaneous) marital status (married, unmarried, separated, widowed, divorcee) and occupation (student, private employee, government employee, self-employed, unemployed).An online survey through the Google survey platform in English was created. The survey contained statements pertaining to personal information, socio-demographic details, and place of residence. It had closed-ended questions regarding their use of social media in relation to receiving information about Covid 19. It also had statements in DASS-21 and GHQ-12. The survey link was shared through What's App, Instagram pages, and through status updates from May 15th, 2020 to May 25^{th,} 2020, with an open invitation to participate in the survey explaining that the survey was to study the influence of social media in processing information regarding Covid 19. Participants were assured that no personal information would be collected and that individual responses would be held confidential.Received data was statistically analyzed using Statistical Package for Social Services software (IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp). Descriptive statistics were performed to evaluate the prevalence of psychological distress as assessed in GHQ and levels of depression, anxiety & stress as assessed in DASS. Mean ± standard deviation (SD), median for covariates. 2 tailed Pearson correlation with 0.01 significance level was performed to analyze the inter-correlation of sub-domains of GHQ & DASS. Association between social media exposure & psychological distress, depression, anxiety & stress were analyzed using Chi-square test and presented as Relative Risk Ratios (RRR) with 95 % CI (Confidence Interval). Goodness-of-fit-test was used to assess the model fit. $P < 0.05$ was considered statistically significant.

Results

between 598 males (49.8 %) & 602 females (50.2 %) and most of them were aged 18 to 25 (402 – 33.8 %). 845 (70.4 %) people were graduates or postgraduates, and 111 (9.2 %) were Ph.D. holders. 639 (53.2 %) people were married. 843 (70.3 %) people have employed either self or private or government sector and 49 (4 %) people though native to the state of West Bengal lived in other states. As shown in Table 1, the distribution of the study population in terms of age group, sex, education, occupation, marital status, and domicile was not uniform between social media exposure. With relation to social media exposure, 35.5 % of people (427) reported as 'often & most often and 37.9 % of people reported as 'some time'. Based on the descriptive statistical analysis Mean ± SD [minimum-maximum], the results of GHQ 12 in association with social media exposure with respect to the domains such as depression & anxiety, social dysfunction, loss of confidence was 4 ± 3.10 [0 - 12], 6.92 ± 3.6 [0 - 18] and 1.27 ± 1.55 [0 - 6] respectively. The mean overall score for GHQ 12 psychological distress was 12.19 ± 7.28 [0 - 36]. There is a difference in scores of GHQ 12 domains with statistical significance (Table 2). There was not much difference in the mean scores of the domains of GHQ 12 in relation to the amount of exposure to social media. But there is a significant difference in the mean score of people who were never using social media in relation to people using social media as a platform to obtain information about Covid-19. This indicated that social media exposure in the context of the Covid-19 pandemic had a significant influence on measures of GHQ 12.

Table 1: Age Distribution

S.No	Age Group	Never	Less	Sometime	Often	Most Often	P-Value
1	18-25 years	34 (8.4%)	72 (17.7%)	189 (46.6%)	76 (18.7%)	35 (8.6%)	
2	26-30 years	22 (8.4%)	22(14%)	70 (45%)	35 (22.3%)	8 (5.1%)	
3	31-40 years	15 (4.7%)	64 (20.3%)	104 (32.9%)	99 (31.3%)	34 (10.8%)	
4	41-50 years	19 (10.8%)	37 (21.0%)	53 (31%)	58 (33%)	9 (5.1%)	
5	51-60 years	5 (4.8%)	15 (14.3%)	32 (30.5%)	44 (41.9%)	9 (8.6%)	
6	61 years and above	6 (15%)	7 (17.5%)	7 (17.5%)	20 (50%)	0 (0)	0.001

Table 2: Gender Distribution

S.No	Age Group	Never N (%)	Less N (%)	Sometime N (%)	Often N (%)	Most Often N (%)	P-Value N (%)
1	Male	45 (7.5%)	115 (19.2%)	204 (34.1%)	183 (30.6%)	51 (8.5%)	
2	Female	56 (9.3%)	102 (16.9%)	251 (41.7%)	149 (24.8%)	44 (7.3%)	0.029

Table 3: Occupational Status

S.No	Occupation	Never N (%)	Less N (%)	Sometime N (%)	Often N (%)	Most Often N (%)	P-Value
1	Student	15 (6.3%)	40 (17.5%)	105 (43.8%)	55 (22.9%)	25 (10.4%)	
2	Self employed	19 (8.3%)	40 (17.5%)	70 (30.7%)	89 (39%)	10 (4.4%)	
3	Private Employed	45 (9.5%)	83 (17.6%)	186 (39.4%)	115 (24.4%)	43 (9.1%)	
4	Govt employed	13 (9.1%)	23 (16.1%)	55 (38.5%)	39 (27.3%)	13 (9.1%	0.002
5	Unemployed	9 (7.7%)	31 (26.5%)	39 (33.3%)	34 (29.1%)	4 (3.4%)	

Table 4: Marital Status

S.No	Occupation	Never N (%)	Less N (%)	Sometime N (%)	Often N (%)	Most Often N (%)	P Value
1	Unmarried	47 (9.4%)	86 (17.2%)	211 (42.3%)	106 (21.2%)	49 (9.8%)	0.001
2	Married	44 (6.9%)	113 (17.7%)	231 (36.2%)	208 (32.6%)	43 (6.7%)	
3	Separated	8 (16.7%)	11 (22.9%)	10 (20.85%)	16 (33.3%)	3 (6.3%)	
4	Widowed	2 (14.3%)	7 (50%)	3 (21.4%)	2 (14.3%)	0 (0)	

Table 5: Current Domicile

S.No	Occupation	Never N (%)	Less N (%)	Sometime N (%)	Often N (%)	Most Often N (%)	P-Value
1	West Bengal	97 (8.4%)	214 (18.6%)	441 (38.3%)	310 (26.9%)	89 (7.7%)	0.018
2	Non West Bengal	4 (8.2%)	3 (6.1%)	14 (28.6%)	22 (44.9%)	6 (12.2%)	

Table 6: Mean of GHQ 12 domains in association with social media exposure

		N	Mean	SD	95% Confidence interval for mean		Kruskal Wallis test P-Value
					Lower bound	Upper Bound	
GHQ12 Depression and Anxiety	Never	101	1.34	1.97	0.95	1.73	0.000
	Less	217	3.52	3.10	3.10	3.94	
	Sometime	455	3.98	2.94	3.70	4.25	
	Often	332	4.96	3.03	4.63	5.29	
	Most Often	95	4.60	3.20	3.94	5.25	
	Total	1200	3.99	3.10	3.82	4.17	
	Never	101	3.64	3.41	2.97	4.31	
	Less	217	6.62	3.54	6.15	7.10	
GHQ12 Social Dysfunction	Sometime	455	7.09	3.35	6.78	7.40	0.000
	Often	332	7.68	3.35	7.31	8.04	
	Most Often	95	7.61	3.98	6.79	8.42	
	Total	1200	6.92	3.60	6.71	7.12	
	Never	101	0.48	0.955	0.29	0.67	
	Less	217	1.10	1.25	0.93	1.26	
GHQ12 Loss of confidence	Sometime	455	1.35	1.59	1.20	1.50	0.000
	Often	332	1.49	1.702	1.31	1.68	
	Most Often	95	1.32	1.65	0.98	1.66	
	Total	1200	1.27	1.55	1.18	1.36	
	Never	101	5.47	5.45	4.39	6.55	
	Less	217	11.25	11.25	10.31	12.19	
GHQ12 Psychological distress	Sometime	455	12.42	6.89	11.79	13.06	0.000
	Often	332	14.41	7.09	13.3	14.90	
	Most Often	95	13.53	7.56	11.99	15.07	
	Total	1200	12.19	7.27	11.77	12.60	

Table 7: Mean of DASS 21 Domains in Association with Social Media Exposure

	Social Media Exposure	N	Mean	SD	95% confidence interval for mean		(Kruskal Wallis Test) p-Value
					Lower Bound	Upper Bound	
DASS Stress	Never	101	4.97	7.71	3.45	6.49	0.000
	Less	217	8.66	7.73	7.63	9.70	
	Sometime	455	8.86	7.28	8.19	9.53	
	Often	332	10.52	8.01	9.65	11.38	
	Most Often	95	10.84	8.15	9.18	12.50	
	Total	1200	9.11	7.81	8.67	9.56	
DASS Depression	Never	101	4.00	7.40	2.54	5.46	0.000
	Less	217	7.21	8.13	6.12	8.30	
	Sometime	455	7.25	8.23	6.49	8.01	
	Often	332	9.34	9.06	8.36	10.32	
	Most often	95	10.13	9.52	8.19	12.07	
	Total	1200	7.77	8.62	7.28	8.26	
DASS Anxiety	Never	101	3.58	6.79	2.24	4.92	0.000
	Less	217	5.82	7.10	4.87	6.77	
	Sometime	455	5.80	6.40	5.21	6.39	
	often	332	7.22	7.17	6.44	7.99	
	Most often	95	8.91	7.86	7.30	10.51	
	Total	**1200**	**6.26**	**7.00**	**5.86**	**6.65**	

Inter correlation between GHQ-12 domains and DASS-21 domains was performed using two-tailed Pearson correlation analysis, which showed a very good correlation at sig = 0.01. The influence of social media exposure on DASS 21 domains was significant at p = 0.000

[Table 3]. The scores revealed depression in 34 % of respondents, 37.1 % suffered from anxiety, and 19.3 % were experiencing stress.

Discussion

According to the National Mental Health Survey conducted in India in 2015, the prevalence of any mental disorder in India is about 10.6 %, and the prevalence of depressive disorder and neurotic disorder is 2.7 % & 6.6 %, respectively.12 In comparison with the national data, this study revealed a significant increase, with 34 %, 37.1 %, and 19.3 % experiencing some level of depression, anxiety & stress, respectively, during this Covid-19 pandemic. The study shows that the social media exposure was high among the sample, with 35.5 % of people reported as 'often & most often and of people reported as 'some time[9].This study sample shows that people in the age group of 18 - 25 yrs. and 31 - 40 yrs. We're using social media as the most used media for collecting information about Covid 19 and a higher percentage of older people between the age group of 50 yrs. And above reported that they never used social media or used it to a minimal range to gather information. While comparing education with relation to social media, the results show that education has no influence on how people gathered information. The scores in the GHQ domains indicate that the use of social media has a significant influence on the general health of the sample, as seen by the scores in loss of confidence, psychological distress, anxiety, depression, and social dysfunction. The scores in DASS domains show that social media exposure has a high significance in influencing the level of stress, depression, and anxiety among the sample. Correlation between the subdomains of the DASS and GHQ scale indicates that psychological distress is highly correlated with stress, anxiety, and depression[10].In accordance with other studies showing social media as the main medium of assessing news, the current study had also shown that a high percentage of people (83 %) received information about Covid-19 through social media and that it had a significant influence in causing psychological distress. During the Covid-19 outbreak, false information and unscientific treatment plans about the Covid-19 have been spread through social media, which has created panic and fear among many netizens, which caused confusion and anxiety among people, which attributed to people's mental health problems[14]. Besides, many people reacted by expressing their negative feelings such as fear, worry, nervousness, and anxiety in social media, which is contagious.

Conclusion

Social media has become a tool for news collection, and people exposed to social media were unaware of the reliability of the news, which plays a major role in creating irrational beliefs & unscientific action towards Covid-19 pandemic management. This study revealed a significant correlation between social media exposure and mental health issues. Mental health issues are going to be the ongoing problem which affects the country's-states; socioeconomic balance and more attention have to be paid to it along with the battle of containing the Covid-19. Guidance for managing this mental health crisis issued by NIMHANS (National Institute of Mental Health and Neuro-Sciences) suggests various psychosocial measures, including teleconsultation. Depression, anxiety & psychological stress are the most common mental health issues which can affect the quality of life, family happiness, and socioeconomic status. It is the need of the hour to pay more attention in dealing with these major mental health disorders.

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