

A study of the Impact of Social Networking Sites (SNS) on Mental Health in an adult Indian population

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ABSTRACT

Background: Social Networking Sites (SNSs) are virtual communities where users can create individual public profiles, interact with real-life friends, and meet other people based on shared interest. Just like substance-related addictions, SNS addiction incorporates the experience of ‘classic’ addiction symptoms namely mood modification, salience (behavioral, cognitive, and emotional preoccupation with the SNS usage), tolerance, withdrawal symptoms, conflict (interpersonal and intrapsychic problems), and relapse (revert in their excessive SNS usage after an abstinence period). The aim of the study was to assess Social Media Disorder (SMD) in adults. To assess Depression, Anxiety, Self Esteem and feeling of loneliness in adults using SNS and its correlation with SMD.

Methodology: This is a cross-sectional study with a sample size of 500 individuals using SNS for a minimum period of 1 year, conducted in a tertiary care hospital. The clinical interview was done, and scales were applied.

Results: 69.4% (68.1% females, 69.9% males) had SMD. Age, Education, Occupation, Type of Family, SES, Hours spent on SNS and Depression showed highly statistically significant relationship with SMD. With an increase in depression, anxiety, and loneliness score SMD increases. With a decrease in Self-Esteem, SMD increases.

Conclusion: Social media usage has its dangerous effects on the younger generation since mental health related problems during this period can act as an epidemic for any individual throughout their life. Our study offers an insight into the complex connection of social media usage and mental health problems of adult Indian population. To reduce these risks, proper steps need to be taken like timely awareness, intervention, assessment, and counseling sessions.

Key words: Social networking, self-esteem, depression, anxiety, loneliness.

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INTRODUCTION

A social networking site is additionally kened as a social networking website or social website. It is an online platform that sanctions users to engender a public profile and interact with other users on the website. Some social networking websites like LinkedIn are utilized for establishing professional connections, while sites like Facebook straddle the line between private and professional. In addition, there are many networks that are built for a categorical utilizer base, such as cultural or political groups within a given area or even traders in financial markets. Social networking websites are different sites which are easily confused with social media sites. A social networking site is any site that has a public or semi-public profile page, including dating sites, fan sites and so on. A social media site has profiles and connections, coalesced to facilely share online content of all types [1].

Excessive usage of social media has created an imbalance which is a great concern for society, family, and researchers regarding the mental health of individuals. One of the most prevalent activities of present generation is to extortionate utilization of social media websites. Social media can be considered as those websites which sanctions interaction through web 2.0 & 3.0 sites including application like WhatsApp, Instagram, Facebook, Twitter, Myspace, online gaming, virtual worlds like Second Life, Sims, YouTube, Blogs and so on. These sites of present era are growing exponentially and act as easily available portals for communication and recreation by the younger generation [2].

Merriam-Webster defined social media as, forms of electronic communication (such as Web sites) through which people create online communities to share information, ideas, personal messages, etc [3]. Virtual platforms of social media like Facebook, Twitter, WhatsApp, Instagram etc. significantly enhanced the virtual environment from the past decade by facilitating users to interchange their feelings, conceptions, personal information, pictures, and videos at non-precedential proportion. Further, social media users have speedily adopted online social communication as an essential part of daily life, as evidenced by the increasing figure of daily users. In fact, in the third quarter of 2018, Facebook alone had 2.27 billion monthly active users [4]. One in seven people used Facebook in a single day to stay connected with their friends and family (posted by Mark Zuckerberg on, August 27, 2015) [5]. Consequently, social media lays a substantial influence on different aspects of present digital life apart from online communication, from marketing, to politics, to education, to health, to basic human interaction. In many of these areas, social media presents clear benefits. However, social media phenomenon is relatively new. Several empirical studies evaluated the overall influence of regular use of social media on the well-being and mental health of its users. This lack of understanding is predominantly a grave concern in the context of the present generation, as teens and young adults spend a good amount of their time in online socialization and hence are at a potentially greater risk of negative effects. Several research studies classify a connection between use of social media and its undesirable outcomes like increase in anxiety, stress, depression, and loneliness [6-8]. The increased usage of social media by the younger generation raises alarms regarding its adverse effects.

Social Media and Anxiety

The link between social media and compulsive behaviour has been reported by various studies. It has been found that forty five percent of British adults feel restless when they are not able to access their social networking sites. A study reported that virtual generation (Net & iGeneration) routinely check their message on the social networking application [9]. They also found that the younger generation felt restless when they were not able to access messages of their social networking applications, giving rise to Phantom vibration syndrome (PVS) [9], which is a nothing but the perception of an addict sensing the vibration of his cell phone.

Social Media and Depression

From the above literature the social media is the basic agent that not only enhances but also nourishes the mental health problems. Excessive use of social media leads an individual to disastrous results that starts with anxiety and leads to the depression. It is revealed that depression and time spent on Facebook by adolescents is positively correlated [10]. Similar findings have revealed that symptoms of major depression have been found among the individuals who spent most of their time in online activities and performing image management on social networking sites [9]. Research conducted by Davila reflected severe depression symptoms among younger generation are associated with less positive and more negative social interactions [11]. On the contrary, evidence of an inverse relation between depression and internet usage has been reported, who suggested that various social forms like gaming & chatting diminish the depression risk [12].

Social Media, Loneliness and Self-Esteem

Social media usage is growing at a remarkable rate predominantly among young adults, surprisingly despite having greater interconnectivity, present young generation is lonelier than other groups and even loneliest ever [13]. Loneliness is one of the prime concerns of present virtual society, as it is intimately related to serious health problems [12-13].

The current study aimed to assess Social Media Disorder (Social Networking Sites addiction) in adults, to assess Depression, Anxiety, Self Esteem and feeling of loneliness in adults using Social Networking Sites and to assess the correlation between Depression, Anxiety, Self Esteem, feeling of loneliness and Social Media Disorder in adults using Social Networking Sites. The study also aimed to assess the correlation of demographic variables with Social Media Disorder (Social Networking Sites addiction).

METHODOLOGY

This is a cross-sectional study, with a sample size of 500 individuals using social networking sites for minimum period of 1 year. It is conducted in a tertiary care hospital on male and female individuals in the age group 18-60 years. Individuals suffering from Psychotic illness were excluded from the study.

Detailed psychiatric interview, comprising of general, medical, and psychiatric history and examination was conducted. Individuals were assessed for depression, anxiety, self-esteem, and loneliness. They were also assessed in detailed regarding usage of their social networking sites. Any psychosocial stressors or chronic medical conditions, along with past history, personal history and family history were also noted.

The following scales were administered –

1. **The Social Media Disorder Scale:** The 9-item Social Media Disorder (SMD) Scale is a psychometrically sound instrument. Development of scale was based on 9 criteria of internet gaming disorder from DSM-5 by Regina and others [14]. Test-retest reliability and internal consistency was shown appropriately in 9-item SMD – scale. Good convergent and criterion validity was demonstrated by 9-item SMD- scale. Sensitivity and specificity were shown adequately by 9-item SMD scale. 9 items in scale are Preoccupation, Tolerance, Withdrawal, Displacement, Escape, Problems, Deception, Displacement and Conflicts. At least five or more (out of nine) criteria must be met for a formal diagnosis of ‘disordered social media use.
2. **Hamilton Depression Rating Scale (HAM-D):** The Hamilton Depression Rating Scale is the most widely used clinician-administered depression assessment scale. This scale has 17 items and is scored between 0 and 4 points. Investigations for validity and reliability of all versions of the HAM-D demonstrated high internal consistency and test-retest reliability, which support its usefulness for determining severity of depression. A scores of 0–7 is considered as being normal, 8–16 suggests mild depression, score of 17–23 suggests moderate depression and a score over 24 is indicative of severe depression; the maximum score being 52 [15].
3. **Hamilton Anxiety Rating Scale (HAM-A):** The HAM-A was one of the first rating scales developed to measure the severity of anxiety symptoms and is still widely used today in both clinical and research settings. It is a 14-item scale, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). Each item is scored on a scale of 0 (not present) to 4 (severe), with a minimum score of 0 and maximum total score of 56. A score in the range of 14 – 17 represents Mild Anxiety, 18 – 24 represents Moderate Anxiety and > 25 Represents severe Anxiety [16].
4. **Rosenberg Self Esteem Scale:** This scale is a ten item Likert scale with items answered on a four-point scale - from strongly agree to strongly disagree. The score ranges from 0-30. Scores below 15 = low self-esteem, 15-25 = normal and above 25 = high self-esteem [17].
5. **Revised UCLA (University of California, Los Angeles) Loneliness Scale:** A 20-item scale designed to measure one’s subjective feelings of loneliness as well as feelings of social isolation. Participants rate each item on a scale from 1 (Never) to 4 (Often). Items 1, 5, 6, 9, 10, 15, 16, 19, 20 are all reverse scored in the scale. A score below 40 indicates Rarely Lonely and a score above 40 indicates Being Lonely [18].

Statistical Analysis

Data were described in terms of range; mean ± standard deviation (± SD), frequencies (number of cases) and relative frequencies (percentages) as appropriate. Comparison of quantitative variables between the groups was done using t-test for parametric data. Spearman's rho correlation is used. A probability value (*p* value) less than 0.05 was considered as statistically significant. All statistical calculations were done using SPSS (Statistical Package for the Social Science) SPSS 17 version statistical program for Microsoft Windows.

Ethical statement

This study was approved by the institutional ethics committee for biomedical & health research.

RESULTS

In our study population 75.7% of individuals suffering from mild depression had SMD, 71.2% of individuals suffering from moderate depression had SMD, 76.3% of individuals with Severe Depression had SMD and 85% of individuals with Very Severe Depression had SMD. 70.5% of the individuals suffering from mild anxiety, 77.4% individuals having Moderate Anxiety, 66.7% of individuals having Severe Anxiety were having social media disorder (score ≥ 5). 76.9% of individuals who use Social Media for 5-8 hrs/day had SMD, 70.2% of individuals who use Social Media for 9-12hrs/day had SMD and 54.4% of individuals who use Social Media for 1-4hrs/day had SMD. 72.4% individuals in our study population who were Being Lonely and 66.1% of individuals who were Rarely Lonely had Social Media Disorder (score ≥ 5).

Table 1: Comparison of demographic data with Social Media Disorder Score

Variable		SMD Score				Total	Chi Square Value	p value
		< 5 (n=153)		≥ 5 (n=347)				
Age Groups (Years)	18-20 years	20	33.3%	40	66.7%	60	39.032	0.000 **
	21-30 years	88	24.7%	268	75.3%	356		
	31-40 years	12	33.3%	24	66.7%	36		
	>40 years	33	68.8%	15	31.3%	48		
Education	Illiterate	1	25.0%	3	75.0%	4	24.563	0.000***
	Graduates	103	25.8%	296	74.2%	399		
	Primary School	2	40.0%	3	60.0%	5		
	Post-Graduate	19	44.2%	24	55.8%	43		
	Secondary School	28	57.1%	21	42.9%	49		
Occupation	Unemployed	0	0.0%	1	100%	1	32.532	0.000***
	Student	96	24.6%	294	75.4%	390		
	Skilled	38	50.7%	37	49.3%	75		
	Semiskilled	14	51.9%	13	48.1%	27		
	Housewife	2	66.7%	1	33.3%	3		
	Labour Class	3	75.0%	1	25.0%	4		
Family Type	Joint	20	51.3%	19	48.7%	39	8.520	0.006**
	Nuclear	133	28.9%	328	71.1%	461		
Socio-economic	Middle Class	128	28.5%	321	71.5%	449	9.073	0.004**
	Upper Class	25	49.0%	26	51.0%	51		

Table 2: Comparison of HAM-D and HAM-A with social media disorder

Scale		SMD Score				Total	Chi-Square	p value
		< 5	%age	≥ 5	%age			
HAM-D Score	Normal	70	43.2%	92	56.8%	162	19.447	0.001***
	Mild	41	24.3%	128	75.7%	169		
	Moderate	21	28.8%	52	71.2%	73		
	Severe	18	23.7%	58	76.3%	76		
	Very Severe	3	15.0%	17	85.0%	20		
TOTAL		153	30.6%	347	69.4%	500		
HAM-A Score	Normal	31	29.5%	74	70.5%	105	7.59	0.055 NS
	Mild	33	22.6%	113	77.4%	146		
	Moderate	85	35.9%	152	64.1%	237		
	Severe	4	33.3%	8	66.7%	12		
TOTAL		153	30.6%	347	69.4%	500		

(p value ≤0.05 = Statistically Significant, p value > 0.05 = Not Significant (NS).
 (SMD SCORE: <5 = NORMAL; ≥ 5 = DISORDER)

Table 3: Comparison of hours of social media usage with social media Disorder

Variable		SMD Score				Total	Chi-Square	p value
		< 5 (n=153)		≥ 5 (n=347)				
Social Networking Sites (Hours/Day)	1-4.0	70	45.5%	84	54.5%	154		
	5-8.0	69	23.1%	230	76.9%	299		
	9-12.0	14	29.8%	33	70.2%	47		

Table 4: Comparison of loneliness with social media disorder

Loneliness		SMD Score				Total	Chi-Square	p value
		< 5	< 5	≥ 5	≥ 5			
Loneliness	Rarely Lonely	81	33.9%	158	66.1%	239	2.335	0.126 (NS)
	Being Lonely	72	27.6%	189	72.4%	261		
Total		153	30.6%	347	69.4%	500		

(p value ≤0.05 = Statistically Significant p value > 0.05 = Not Significant (NS))
 (SMD SCORE: <5 = NORMAL; ≥ 5 = DISORDER)

Table 5: Pearson’s Correlation scores

		HAM-D	HAM-A	Loneliness	Self-Esteem
Social Media Disorder Score	Pearson’s Correlation	0.234	0.180	0.142	-0.047
	p value	0.000***	0.000***	0.001***	0.291

DISCUSSION

This study has compared the impact of social media disorder in 500 adult Indian population. We assessed the degree of Social Media Disorder, Depression, Anxiety, Self-Esteem, and Loneliness. These were also

compared with the extent of social media disorder. We also studied effects of demographic data on social media disorder (addiction). Very little research has been done with regards to all these aspects into consideration thus making comparison of our data to other studies difficult.

Out of 500 individuals in our study, maximum individuals 356 (71.2%) individuals were from the age group of 21-30 years, 60 (12%) were from 18-20 years, 48 (9.6%) individuals were ≥ 40 years and 36 were from 31-40 (7.2%) years. We found that 268 out of 347 individuals had social media disorder (score ≥ 5) belonging to age group of 21-30 years. This shows highly statistically significant relationship between Age and social media disorder with 21-30 years individuals being the most affected.

A study in India had similar findings and found excessive use of social networking sites in age group of 17-25 years (mean age 19.9 years) with statistical significance [19]. A study conducted in Bengaluru showed 67% of the study population belonged to age group 18 to 26 years [20]. A study in Jabalpur in 400 students also showed social media disorder in the age group of 15-25-years [21]. Akila Ganesh and others studied internet addiction in medical and paramedical students. They found mild internet addiction in 590 (58.40%) students, moderate addiction in 239 (23.60%), normal users in 171 (16.90%) and severe addiction in 11 (1.10%) students in the age group of 17-26 years [22].

79.8% of our study population were graduates. Out of 399 graduates, 296 (74.2%) graduates were having social media disorder (score ≥ 5). This shows highly statistical significance between Education and Social Media Disorder (addiction). Majority of our study population were students 390 (78.0%), 75 (15%) were skilled workers, 27 (5.4%) were with semi-skilled job, 4 were Labourer, 3 of them were house wives and 1 was unemployed. Out of 390 students, 294 (75.4%) were having social media disorder (score ≥ 5), out of 75 skilled workers 37 (49.3%) were having social media disorder (score ≥ 5), out of 27 semiskilled worker 13 (48.1%) were having social media disorder (score ≥ 5), out of 3 housewives 1 was having social media disorder (score ≥ 5) and out of 4 labourer and 1 was having social media disorder (score ≥ 5). This shows highly statistically significant between Occupation and Social Media Disorder (addiction)

Researchers found, about half of the adolescents with addiction were also working part time and used the workplace to access the internet. This finding too was statistically significant [23]. A study done by Laura Widyanto and Mary Mcmurrans showed, 51 (59.3%) stated that their professions/skilled worker requires to use the Internet [24].

Majority of the study population belong to Middle SES (89.8%) followed by Upper SES (10.2%) and out of 347 individuals who had social media disorder (score ≥ 5) 321 individuals were from middle class and 26 were from upper class. Out of 500 individuals assessed, 347 (69.4 %) of the study population had Social media disorder (score ≥ 5), while 133 (50.6%) did not have social media disorder (score < 5).

In our study population 33.8% had mild depression, 14.6 % had moderate depression, 15.2 % had severe depression and 4.0% had very severe depression. Out of 347 individuals in our study who had social media disorder (score ≥ 5), 255 of them suffered from depressive disorders. This shows highly statistically significant relationship between Depression and Social Media Disorder ($X^2 = 19.447$, p value = 0.001).

This shows, an alarming figure of individuals were depressed in those who had social media disorder (addiction).

A German study found out significant relationship between social media disorder and depression (p value = 0.001) [25]. Halley M Pontes studied in 532 English-speaking Social networking sites (2016) and found depression have emerged as important correlates of social networking sites addiction/ social media disorder [26]. A study conducted in 200 undergraduate medical students found, that students who used social networking sites for 4 hrs. or more per day scored significantly higher depression (in Becks Depression Inventory) ($p = 0.042$) than those who used social networking sites for less duration [27]. A study in 188 individuals, used Zung Depression Scale and found significant relationship between social media use and depression (p value 0.008), he also used DASS scale in same population and found significant relationship between social media use and depression (p value 0.02) [28].

A study in 1573 Korean adolescents and found that the reported degrees of depression and suicidal ideation were highest in the internet addict group (including social media disorder), followed by the possible internet and Nonaddict groups [29]. A study in 987 adolescents of Mumbai, found that persons with excessive internet use had high depression which was statistically significant [30].

21.0% of study population had mild anxiety, 29.2 % had moderate anxiety and 2.4 % had severe anxiety; overall 52.6% of our study population had anxiety disorder while 74 (70.5%) of individuals with mild anxiety, 113 (77.4%) of individuals with moderate anxiety, 8 (66.7%) of individuals with severe anxiety had social media disorder (score ≥ 5) and 64.1% of individuals who were normal (no anxiety) had Social Media Disorder (score ≥ 5). This was not statistically significant ($X^2 = 7.590$, p value = 0.055).

It has been found that forty five percent of British adults feel restlessness when they are not able to access their social networking sites [31]. A study reported that virtual generation often checked messages on their social networking application, felt restless when they were not able to access messages of their counterparts, giving rise to Phantom vibration syndrome (PVS), a perception of an addict person regarding sensing the vibration of his cell phone [32]. Individuals with anxiety/depression have an impoverished social network, and on the other side, impoverished social networks are often a risk factor for depression and anxiety by reducing access to “buffering” social support and increasing feelings of isolation [33].

261(52.2%) persons in study population were Being Lonely and 239 (47.8%) were Rarely Lonely. 189 out of 261 who were Being Lonely had social media disorder (score ≥ 5) and 158 individuals out of 239 who were Rarely lonely were having social media disorder (score ≥ 5). Our study shows no statistical significance.

A study on 2089 students and the result showed that the more time students spent using Facebook, the lonelier they felt (p < 0.001.) [34]. Studies have shown that uncontrolled, unhygienic, and compulsive usage of internet resources enhances loneliness over the time also higher level of internet usage among young generation enhances the emotional loneliness [35]. Another study revealed that more the Facebook friends a student have higher the level of loneliness [36]. But contrary to this, studies have revealed that people who consumes less social networking are having higher score of shyness and loneliness, they are also socially less active [37].

461 (92.2%) individuals in study population had nuclear family and 39 (7.8%) individuals had Joint family. 328 out of 461 individuals living in nuclear family had social media disorder (score ≥ 5). 19 out of 39 individuals living in joint family had social media disorder (score ≥ 5). This was highly statistically significant relationship between Type of Family and Social Media Disorder. This implies that individuals in nuclear families have a higher tendency of Social Media Disorder. We did not find any other study to compare our data. 59.8% of total study population were spending 5-8 hrs. per day using social media, 30.8% were spending 1-4 hrs./day and 9.4% spent 9-12 hrs./day on social networking sites. Individuals who were using social media for 1-4hrs/day, 54.5% of them had Social Media Disorder, individuals who were using social media for 5-8 hrs/day, 76.9% of them had Social Media Disorder and individuals who were using Social Media for 9-12 hrs/day, 70.2% of them had Social Media Disorder. This shows highly statistically significant relationship between Hours of Social Media usage and Social Media Disorder. This finding implies that more the usage of social media per day, more is the risk of social Media Disorder (Addiction). Our findings are in keeping with other studies, as follows.

A study in Indian students found maximum of the study population (81.99%) use to spend 1-3 hrs./day on internet (maximum on social networking sites), 15.63% were spending 4-6hrs./day, 1.89% were spending 7-9hrs./day and 0.47 use to spend 10-12hrs./day [37]. A study on 92 psychology students found Facebook (social networking site) use ranged from 2.00 to 117.00 min per weekday and from 0.00 to 165 min per day on Saturday and Sunday (p value = 0.012) [38].

A Positive Pearson's correlation of Depression with Social Media Disorder signifies social media disorder increases with an increase in Depression (Pearson's correlation = 0.234, p value = 0.000), which is highly statistically significant. A Positive Pearson's correlation of Anxiety with social media disorder, signifies social media disorder increases with an increase in Anxiety (Pearson's correlation = 0.180, p value = 0.000), which is highly statistically significant. A Positive Pearson's correlation of Loneliness with social media disorder, signifies social media disorder scale score increases with an increase in loneliness (Pearson's correlation (Pearson Correlation = 0.142, p value = 0.001), which is highly statistically significant. A negative Pearson's correlation of self-esteem with social media disorder, signifies that with a decrease in self-esteem, leads to an increase in social media disorder (Pearson's correlation = -0.047, p value = 0.291).

CONCLUSIONS

Clinical Implications

With the advent of the twenty-first century, the use of internet has increased manifold. It has its advantages and pitfall too. Our study implicates an alarming rise of use of social networking sites in individuals suffering from Depression, Anxiety, Loneliness and Low Self-Esteem, especially in young adults. An awareness regarding psychiatric morbidity with social networking sites is the need of the hour. Timely intervention of the psychiatric disorder, pharmacologically and holistically will cater to the mental health and wellbeing of the adults to efficiently cope with life stressors, thus improving the quality of life and wellbeing of the individuals who are the next future generation of the society.

Limitations

The study was limited to only a small population and to the patients attending the outpatient Department of Psychiatry of a tertiary care medical college and hospital. Hence, the results cannot be generalized to the entire population. The subjects in the study were interviewed only once with no subsequent follow-ups. Quality of life of patients with Social Media Disorder, Depression, Anxiety, Self-Esteem and Loneliness can be affected by many other reasons, which have not been considered in this study.

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