Social Media Trap: Exploring the Prevalence of Social Networking Addiction and its Mental Health Outcomes among University Students of Balochistan

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Abstract

Purpose: This study explored the social media trap by examining the prevalence of Social Networking Addiction (SNA) among university students of Balochistan, Pakistan. Study further explored association and predictive influence of social networking addiction on mental health outcomes (depression, anxiety, and stress for the current study).
Design/methodology: Following the cross-sectional research design study variables were measured through Social Networking Addiction Scale (SNAS; Shahnawaz & Rehman, 2020) and Depression, Anxiety, and Stress Scale (DASS-21-Urdu version; Aslam & Kamal, 2017) on a sample of 320 students selected conveniently from six universities of Balochistan.
Research limitation: The use of self-report measures and on-line data collection may warn for social desirability from the respondents, limiting the reliability of research findings.
Key finding(s): Results highlighted that almost 51% of the respondents were found to be Social Networking Addict and this addiction was more prevalent in male university student than in female students. Study further revealed the SNA along with its six dimensions not only have significant association with DAS but also impart substantial predictive influence on these mental health outcomes.
Practical implication(s): The study finding may guide social media studies, and help in devising ways to control side effects of this media flow.
Contribution to Knowledge: This study provide evidence that social media is taking youth into its trap as youth (university students) from even technologically less developed areas (like Balochistan) are increasingly getting indulged in Social Networking Addiction (SNA).
Paper type: Empirical research
Keywords: Social Media, Social Networking, Social Networking Addiction, Depression, Anxiety, Stress

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Introduction

Social networking or social media is a term that has become familiar to most of us in a very short period of time. Social networking sites like Facebook, WhatsApp, or Twitter has become so much common that they have almost replaced the conventional means of social communication like direct meet ups, telephonic talks, posting letters, or sending messages on text. Even prior digital communication source like emailing practice has seen a decline presently. It has become a mean of social contact and communication for youth to an extent that being online is now regarded as a new norm (Kuss & Griffiths, 2017). This almost essential practice has now evolved as a whole new dimension for research studies on the social world.

Social Networking Addiction

Social networking sites are technology and web based sites including Facebook, Instagram, WhatsApp, Skype, and Twitter. Individuals, experts and scholars use social networking and social media interchangeably, while they are bit similar but not the same (Kuss & Griffiths, 2017). Social media is a broad category of web based technology that include webpages, websites, weblogs, virtual games, social networking sites, virtual communities and social world. Social networking is a major component of social media (Shahnawaz & Rehman, 2020) through which individuals share information, opinions, interests, contents, and maintain social relations (Kuss & Griffiths, 2017).

Addiction is defined by the American Society of Addiction Medicine as "the usage of substances or behaviours that become *compulsive* and *continues regardless of their harmful consequences*" (as cited in Report of Newport Institute, 2022). Among several others, Griffiths (2005) offered a model of behavioural addiction. Model views addiction as a part of a biopsychosocial process and suggests that most addictions have several discrete but common constituents (salience, mood modification, tolerance, withdrawal, conflict and relapse). Consequently, model proposed six criteria of behavioural addictions including being salience, mood modification, tolerance, withdrawal, relapse, and conflict. This model has been used to explain several behavioural addictions like exercise, shopping, internet, and social networking (see for example, Griffiths, 2005; Clark & Callega, 2008; Kuss et al., 2013; and Kuss & Griffiths, 2011). In another research highlighting the link between symptoms of psychiatric disorders and addictive use of social media and video gaming (Andreassen et al., 2016) same criteria was utilized to identify addictive use. In the

context of social networking sites (SNSs) these criteria for addiction can be briefed as following:

1. Salience: When social networking is dominating thinking, feeling, and actions even if one is not actively involved in SNSs.
2. Mood modification: When SNSs use alter and boost one's mood.
3. Tolerance: When increasing SNSs use become essential to have prior effect.
4. Withdrawal symptoms: Feeling of unpleasantness when not being able to use SNSs.
5. Conflict: When SNSs may lead to conflicts in real relations and/or other activities.
6. Relapse: Return to SNSs after making efforts to control it (for detail see Griffiths, 2005).

The usage of social networking that gradually becomes excessive and then turns into addiction may have both neurological and psychological explanations. Being social animals, the in hand social interactions and flow of information through social media is self-gratifying so these social media engagements keep getting reinforced with continuous and excessive usage. And then one's learned helplessness take him/her to the course of addiction. In the similar manner these easy, quick, and satisfying social interaction are taken as neurologically beneficial resulting in release of dopamine (a neurotransmitter creating a feeling of happiness and excitement) which is important in learning, habit formation, and may lead to additive practices (Hilliard et al., 2023). So like a trap, even a minor check of our networking updates can lead to prolonged use under the learned helplessness (to disengage) and dopamine driven compulsions leading to addiction.

Mental Health Issues

Mental health involves effective functioning in daily activities resulting in productivity, maintaining healthy relations, coping, and adaptability. In contrast mental illness refers to significant changes in thinking, emotions, and/or behaviours leading to ineffective functioning in social, work, or familial activities (Njoku, 2022). The term mental health issues or mental health problems is often used in researches to indicate less severe mental illnesses. Due to various life pressures, several mental health issues are researched to be prevailing nowadays. Among these anxiety and depression are the most commonly occurring mental health problems (See for example, Inspira, 2021, November). Psychological stress is

another condition that is faced by everyone in this demanding world and its inappropriate copping can lead to several other mental and physical health issues.

Depression is generally considered as low mood or feeling of unpleasantness. American Psychological Association (APA) Dictionary of Psychology has described depression as "*a negative affective state, ranging from unhappiness and discontent to an extreme feeling of sadness, pessimism, and despondency, that interferes with daily life*". It also involves several physical, cognitive, and social deviations including altered sleeping and eating habits, lack of energy or motivation, concentration and decision making difficulties, and withdrawal from social activities. Whereas, Anxiety in APA's Dictionary of Psychology is described as "*an emotion characterized by apprehension and somatic symptoms of tension in which an individual anticipates impending danger, catastrophe, or misfortune*". In response to the perceived threat body activates itself resulting in tense muscles, faster breathing, and rapid heart beating. APA Dictionary of Psychology define stress as "*psychological and physiological response to external and internal events or stressors*". Stress have effects on how people think, feel, behave, as well as on the body resulting in sweating, shortness of breath, dry mouth, and accelerated speech.

Literature Review

Social networking/social media, its excessive use or addiction, and its possible impact on mental health has led to a continuous debate among researchers. The view that the amount and quality of social relations equally and mutually influence mental and physical health, and related behaviours and risks (Martinsen, 2008) suggests that social networking and social media overuse or addiction may effect mental health. Several researchers have reported positive impacts of social media use or social networking on mental health and considered it a crucial element in protecting one's mental health (see for example, Kardefelt-Winther et al., 2017; Berryman et al., 2018). These positive influences are reported to be the result of the ease of communicating with family and friends, which may provide guidance, social support and life satisfaction. An eight years long longitudinal study reported that increased time spent on social media was not associated with increased mental health issues across development (Coyne et al., 2019). Similarly, Odgers and Jansen (2020) also reviewed and noted that most researches on positive link of social media use and poor mental health has been correlational, has generated small and often conflicting positive, negative, or null associations.

On the other hand, several researches have reported negative impact of social networking on one's mental health (see for example, Rasmussen et al., 2020; Feder et al., 2019). The positive association of depression, anxiety, and stress and social media use or social networking has been reported in many researches (see for example, Fardouly et al., 2020; Wartberg et al., 2020). Keles et al. (2019) in their systematic review reported four domains of social media: time spent, activity, investment, and addiction and all these domains were correlated with depression, anxiety and psychological distress. The relationship between uses of social networking sites and depression and anxiety may be effected by time spent, types of social networking sites, and addiction. Individuals who send texts and messages to friends are more prone to fear of losing or anxiety, and may be depressed when they don't have access to social networking sites. Although, people who are using social media for less or moderate amount of time and are not addicted may show positive relationship with their mental health (Wartberg et al, 2020). Gender differences were also reported in this regard. A study assessed the relationship between use of social networking sites and mental health, and reported that females were more addicted to social media sites than males (Wartberg et al, 2020). Another study reported that males use social media for flirting with friends whereas, females use it to talk and have some time with friends (Lenhart & Madden, 2007).

The contradictory finding described previously led researchers to firstly examine the prevalence of social networking addiction amongst university students of Balochistan (a technologically less developed and relatively marginalized part of Pakistan). And then to see if this link of social networking addiction and mental health issues (depression, anxiety, and stress) can be established in the same manner in less developed areas as is reported in researches conducted in developed countries.

Research Objectives

Following are the research objectives for this study:

1. To explore the prevalence of social networking addiction amongst university students of Balochistan, Pakistan.
2. To explore the link of social networking addiction and mental health issues (depression, anxiety, and stress).
3. To examine the predictive influence of social networking addiction on mental health issues.

Methodology

The study was conducted to explore the prevalence of social networking addiction among university students of Balochistan. Then the relationship and in turn predictive influence of social networking addiction on Depression, Anxiety, and Stress level (mental health issues) of university students of Balochistan was examined. Age and gender based differences on social networking addition were also explored.

Participants

A total of 320 students from various universities of Balochistan were selected for the current study through non-probability convenient sampling. Sample consisted of both men (*n*=147) and women (*n*=173). Students of BS and Masters Level from six universities from Quetta (University of Balochistan-UOB; Sardar Bahadur Khan Women University-SBK; Balochistan University of Information, Technology, Engineering and Management Sciences - BUITEMS) and other areas of Balochistan (Mir Chakar Khan Rind University, Sibi; University of Turbat, Turbat; & Lasbela University of Agricultural, Water and Marine Sciences) were selected. Age range of students was 17 to 32 years.

Measures

A self-administered set of questionnaire was used for data collection including: social networking addiction scale and DASS-21 along with informed consent form and demographic information form. Social Networking Addiction Scale (SNAS; Shahnawaz & Rehman, 2020) having 21 items was utilized to assess social networking addiction. Each item consists of 7 response options (1 for strongly disagree to 7 for strongly agree). The scale followed the addiction model of Griffiths (2005) that identified six dimensions of addiction. These include: salience (item 1 to 4), mood modification (item 5 to 7), tolerance (item 8 to 10), withdrawal (11 to 14), conflict (15 to 17), and relapse (18 to 21). Author has suggested two methods for scoring. Firstly, dimension wise scoring can be utilized where high score on scale or dimension indicate higher addiction or higher level on the dimension. Secondly, as overall score range is 21 to 147, any score on or above 84 is considered as addicted to social networking. The reliability of this test was reported to be 0.88.

For measuring mental health issues Urdu version of Depression, Anxiety, and Stress Scale- short form (DASS-21; Aslam & Kamal, 2017) was used. DASS-21 has 21 items, each mental health issue (Depression, Anxiety, and Stress) is measured by 7 items. Respondents have to rate every item from Never (0) to every time (3). Overall score range is 0 to 63 and reliability of the total test

was reported to be .89. The reliability of the subscales of DASS were reported as .68, .77, and .77 respectively.

Procedure

After taking informed consent data was collected from students of various universities both through direct-contact (from universities of Quetta city) and online survey using google form (from universities situated outside Quetta). Google form was shared through various social networking sites. Students were properly guided on how to fill the questionnaire having two scales and demographic information sheet. IBM SPSS (version 23) was used for analysis of the recorded data.

Findings

Initial analyses revealed an apt score distribution and excellent reliability coefficients for both research measures that may facilitate a variety of analyses. These descriptive statistics and the alpha reliabilities are shown below in table 1.

Table 1: *Descriptive and Reliability Coefficients for SNAS and DASS-21 (N=320)*

Sr. No	Scale	No. of Items	M	SD	α	Range		Skew	
						Min	Max	Statistic	Std. Er.
1.	SNAS	21	84.53	23.82	.89	23	142	-.06	.14
2.	DASS-21	21	22.59	1.33	.90	0	61	.46	.14

Note. SNAS = Social Networking Addiction Scale; DASS-21 = Depression, Anxiety, and Stress Scale-21.

Now, first of all prevalence of social networking addiction among students of various universities of Balochistan was explored. All respondents who took a score of 84 and above on Social Networking Addiction Scale are considered Social Networking Addict. The results indicated that almost 51% students are identified as Social Networking Addict. Considering gender groups, almost 56% and 46% of male and female students are found to be Social Networking Addict respectively. So Social Networking Addiction seem bit more prevalent among male university students. These results are shown below in table 2.

Table 2: Frequencies and Percentages of Social Networking Addict and Non-Addict University Students (N=320)

	Gender groups	*n* (% age)	Social Networking Addict		Social Networking Non-Addict	
			f	%	*f*	%
University Students		320 (100)	163	50.9	157	49.1
	Men	147 (100)	83	56.46	64	43.54
	Women	173 (100)	80	46.24	93	53.76

Beside the differences in addiction prevalence rate, on a continuous scale men and women do not seem to differ significantly on mean total score of SNAS and on its various dimension.

Further analyses through t-test revealed that social networking addict and non-addict university students significantly differ in their mean score on DASS and all of its sub-scales. Social networking addict university students has shown significantly higher mean scores than non-addict students on Depression, Anxiety, and Stress sub-scales as well as on DASS total ($p < .001$ for all). The t-analyses based results are tabulated in table 3.

Table 3: Mean Difference and Standard Deviation of Social Networking Addict and Non-Addict Students' Scores on DASS-21 and its Sub-scales

Scale/ Sub-scale	SNA (*n*=163)	SNNA (*n*=157)	*t*	*p*	CI 95%		Cohen's *d*
	M (SD)	M (SD)			UU	UL	
DASS-21	25.55 (11.30)	19.52 (10.55)	4.93	.000	3.62	8.43	0.55
Depression	7.88 (4.48)	5.89 (4.07)	4.16	.000	1.05	2.94	0.46
Anxiety	6.94 (3.97)	5.24 (3.82)	3.98	.000	0.84	2.55	0.43
Stress	10.73 (4.36)	8.39 (4.01)	4.98	.000	1.41	3.25	0.56

Note. DASS-21 = Depression, Anxiety, and Stress Scale-21; SNA = Social Networking Addict; SNNA = Social Networking Non-Addict.

Now considering the main aim of the study, the connection of SNA and its dimensions with mental health issues (in terms of DASS total and its sub-scales) has been explored through correlation coefficients. Results revealed significant positive correlation coefficients ($p<.001$) between SNA scores with DASS and its all sub-scale scores. Similarly, all six dimensions of SNA also showed

significant positive correlation with DASS total and its depression sub-scale (p< .05 to .001). The salience, tolerance, withdrawal, and relapse dimensions have significant positive correlations (p< .05 to .001) with anxiety and stress sub-scale of DASS too. Only mood modification and conflict dimension of SNA have displayed non-significant coefficients with anxiety, and anxiety and stress sub-scale of DASS respectively. All relevant correlation coefficients are tabulated below in table 4.

Table 4: Correlation Coefficients of SNAS and its Six Dimensions with DASS-21 and its Sub-Scales (N=320)

Scale	DASS-21		Depression		Anxiety		Stress	
	r	*p*	*r*	*p*	*r*	*p*	*r*	*p*
SNAS	.29	.001	.25	.000	.22	.000	.29	.000
SL	.29	.000	.24	.000	.26	.000	.29	.000
MD	.17	.003	.14	.011	.10	.076	.20	.000
TL	.19	.001	.15	.006	.15	.009	.20	.000
WT	.24	.000	.19	.001	.22	.000	.23	.000
CN	.12	.029	.15	.009	.07	.214	.11	.055
RP	.22	.000	.22	.000	.14	.015	.22	.000

Note. SNAS=Social Networking Addiction Scale, SL= Salience dimension of SNA; MD= Mood Modification dimension of SNA; TL= Tolerance dimension of SNA; WT= Withdrawal dimension of SNA; CN= Conflict dimension of SNA; RP= Relapse dimension of SNA; DASS-21=Depression Anxiety and Stress Scale.

Correlational analyses further revealed that the relationship between SNA and DASS is relatively stronger for women (r= .31, p = .000) than men (r= .28, p = .001), and for students in middle age

group (Age= 21 – 28 years; r= .37, p = .000) than older and younger university students.

Table 4 results though depict significant association of SNA and DASS but many of these coefficients are relatively low, so it becomes important to assess if SNA and its dimensions predict mental issues (in terms of DASS) among university students or not. This has been examined through multi-linear regression analyses. Results revealed a significant influence of SN addiction (SNA) on depression, anxiety, and stress level of the students by predicting more than 8% of variance in the DASS scores. Interestingly regression analysis of six SNA dimensions highlighted that they all may considerably effect student's depression, anxiety, and stress level. They displayed a significant predictive influence of approximately 9% (salience), 3% (mood modification), 4% (tolerance), 6% (withdrawal), 2% (conflict), and 5% (relapse) on DASS scores (p<.001, p< .01, p< .01, p< .001, p< .05 & p< .001 correspondingly).

Table 5: Multiple Linear Regression Analysis (N= 320)

Variables	β	t	Sig.	R^2	$F_{(1, 318)}$	Sig. *(F)*
1. SNA =►DASS	.286	5.32	.000	.082	28.28	.000
2. SL =► DASS	.294	5.48	.000	.086	29.98	.000
3. MD =► DASS	.166	2.90	.000	.027	8.96	.003
4. TL =► DASS	.189	3.43	.001	.036	11.75	.001
5. WT =► DASS	.239	4.39	.000	.057	19.27	.000
6. CN =► DASS	.122	2.20	.029	.015	4.83	.029
7. RP =► DASS	.221	4.03	.000	.049	16.25	.000

Note. SNAS=Social Networking Addiction Scale, SL= Salience dimension of SNA; MD= Mood Modification dimension of SNA; TL= Tolerance dimension of SNA; WT= Withdrawal dimension of SNA; CN= Conflict dimension of SNA; RP= Relapse dimension of SNA.

The comparative analyses of means and standard deviations (t-test, ANOVA) of university students scores on both SNAS and DASS have not depicted significant differences across gender or age.

Discussion

A major part of information flow and social interactions comes through use of technology based web sites nowadays. No one can deny the importance of these virtual communications. The usage of social media or social networking sometimes becomes so excessive that it reaches to an extent of becoming addiction termed as Social Networking Addiction (SNA). This SN addiction may well be explained through a six dimensional model including salience, mood

modification, tolerance, withdrawal, conflict, and relapse (for detail see Griffiths, 2005). Excessive use of social networking is reported to be quite common among youth and specially adolescents. Several researches have indicated that social networking among young ones have increased considerably on a very fast pace in the resent years (see for example Blomfield neire & Barber, 2014). Youth's over use of social networking and its addiction is also reported in several researches. In one such research by Sponcil and Gitimu (2013), 59.4% of college students were reported to be using social networking sites recurrently in a day. Whereas, Tang and Koh (2017) reported 29.5% of the Singapore college students as being social networking addict (as cited in Shahnawaz & Rehman, 2020).

Evidently, most of these researches have been conducted in technologically advance areas of the world. So it is important to investigate if this social networking overuse or addiction among youth is equally prevalent in the technologically under developed areas. So this study attempted to explore the social networking addiction among university students (from six different universities) of Balochistan which is considered as most technologically most under developed province of Pakistan. Our findings are quite in line with this reported trend as almost 51% of the university students were found to be social media addict. Our findings further highlighted that this trend seems more prevalent among men than women. This is bit inconsistent to most research reports where females are found to be more addicted to social media as compared with males (Twenge & Martin, 2018). Many other researches also reported that women are more addicted to social networking sites than men (Wartberg et al, 2020; Bourgeois et al, 2014). Various socio-cultural factors like more domestic responsibilities and assigned gender role may be are causing this relatively low SNA prevalence among young females. Our findings further revealed that SN addicts scored significantly higher on Depression, Anxiety, and Stress Scale suggesting a link between SNA and mental health issues. Our next aim was to establish association between this SNA with the mental health issues. Addiction being a negative term are mostly discussed with negative mental health issues and as described in introduction depression, anxiety, and stress are the most frequently researched mental health issues with relation to social media (See for example, Inspira, 2021, November). So we also took the mental health issues in terms of depression, anxiety, and stress and measured it through DASS-21 (Aslam & Kamal, 2017). Results revealed that SNA and all its dimensions have significant link with depression, anxiety, and stress. Other researches also reported that SNA result in depression, anxiety and stress (see for example, Malaeb et al. 2020; Van Dan Eijnden et al, 2018; Karim et al, 2020; Ahmad et al, 2018;

& Bourgeois et al, 2014). The Displaced behaviour theory can explain this connection of social media and mental health. It says that people who devote more time in deskbound actions like using social media get lesser time for direct social contact, which along with inactivity have proven lead towards mental health problems. Similarly, social theorists explain that social media use influence mental health by effecting how people view, maintain, and interact with their social network (as cited in Karim et al., 2020). Interestingly we have noticed that tough the reported link in our study is significant but the correlation coefficients are quiet low (from .12 to .29). Few previous researchers also noticed that most researches on positive link of social media use and poor mental health has been correlational, has generated small and often contradictory or null associations (Odgers & Jansen, 2020). So, it becomes important to see if SNA have some predictive influence on mental health.

Taking a step further we run regression analyses of student's scores on SNA with its six dimensions and DASS scores. Results validated our previous finding as social networking addiction and all its dimension seems to have significant predictive influence on depression, anxiety, and stress level of university students. Research shows that though social networking keep people connected with each other, they in fact become more isolated resulting in the feeling of loneliness and less satisfied with the lives (as cited in Shahnawaz & Rehman, 2022) which in turn may increase their level of depression, anxiety or stress.

Research Implication and Conclusion

The study and its findings have implications in various fields like clinical and counselling, education, IT, health, and wellbeing; and it also opens doors for further research, but has its limitations too. One of these is the use of self-report questionnaires and on-line data collection that warns for respondent's social desirability issue that should have been controlled as study intends to explore prevalence. Further, inclusion of college students and youth outside the educational institutes might result in more convincing findings.

The study adds to the evidence that social media is taking youth into its trap as youth (university students) from even technologically less developed areas (like Balochistan) are getting indulged in Social Networking Addiction (SNA). The study findings also validate previously reported association of the SNA and mental health problems through establishing a predictive influence of SN addiction on depression, anxiety, and stress level of university students of Balochistan, Pakistan.

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