RESEARCH

Social media usage and loneliness among Princess Nourah University medical students

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Abstract

Background: Social media addiction has a negative effect on one's daily lifestyle and impacts one's physical and psychological health, such as in increased feelings of loneliness. This study examined the prevalence of social media addiction and loneliness and the relationship between them among medical students at the Princess Nourah University. A cross-sectional study was conducted among medical students at the Princess Nourah University. A sample was conducted using a multistage technique. The sample size was 302. The tool was a self-administered paper questionnaire.

Results: Out of 302 participants, 225 (74%) had indications of social media addiction according to the self-reported scale, while around 146 (48%) had self-reported feelings of loneliness. There was a significant weak correlation between the social media addiction and loneliness measures ($r = .361$; $p < 0.001$).

Conclusions: A high prevalence of self-reported social media addiction was found in our study and was significantly correlated with self-reported feelings of loneliness. Awareness programmes can be developed and expanded regarding the consequences of social media use and the physical and mental hazards of loneliness.

Keywords: Social media, Addiction, Loneliness, Medical students

Background

In the last few years, social networking platforms have become a global phenomenon with increasing numbers of users [12]. Social networking sites have had a profound impact on individuals and communities as a whole, which has been a dramatic technological and societal achievement. Unfortunately, although the Internet and social networking have made life easier for people in many ways, it also has some negative effects [20], such as social alienation [18] and social networking addiction [16].

The literature has shown that the negative impacts of using social networking include a decrease in real-life social community participation and academic achievement, leading to relationship problems; each of these may be indicative of potential addiction [21]. Moreover, the usage of social networking platforms has been found to influence the mental health of some users, in terms of depression, eating disorders, loneliness and low self-esteem [18].

Loneliness refers to a person's sense of alienation from people, which leads to a feeling of exclusion and not being accepted by others [7]. Researchers have found that loneliness can have a negative impact on psychosocial and physiologic status, including a significant decrease in physical activity [7] and a significant positive association with anxiety [6]. Lonely people are more likely than others to have decision disturbances in the sequence of their daily lives resulting from the use of the Internet [15].

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Loneliness has been linked to social media use in two ways. First, excessive use of social networking sites leads to isolation. Second, people who suffer from loneliness were found to be more susceptible to excessive use of social networking sites. Individuals who feel lonely tend to form relationships on social media and also prefer to get emotional support from them, and they seek to improve their mood by communicating with others online, which leads to staying online longer. Thus, they begin to suffer from social media addiction [15].

A cross-sectional study was carried out on students of the Wah Medical College from Pakistan. The results of a study found a positive correlation between Internet addiction and loneliness with $r = 0.182$ and *p*-value = 0.046 [11].

A cross-sectional study was conducted in the Fırat University located in Turkey. There was a significant positive relationship between social media usage and loneliness. According to the results of this study, social media usage directly and statistically significantly affects loneliness [15].

The feeling of loneliness is particularly high among university students despite the presence of many colleagues [7]. A study conducted among university students in Malaysia reported that 73% of students are using social networking extensively and can be categorised as social networking addicts [9]. A study conducted in Saudi Arabia among university students reported that 94.7% used applications for the purpose of social networking [3]. On the other hand, the prevalence of loneliness among adolescents in Saudi Arabia is reported to be 48.3% [1]. A study conducted on 277 university students in the USA in which the University of California, Los Angeles (UCLA) scale was used measured the impact of loneliness on the use of the Internet. The results showed that people who feel lonely use the Internet more than non-lonely [15].

A study conducted among girls at the University of Babylon in Iraq to examine the relationship between Internet addiction and loneliness showed a significant correlation between Internet addiction and loneliness [1]. Based on this study, it was hypothesised that there would be a relationship between loneliness and social media usage among Princess Nourah bint Abdulrahman University students.

Objectives

- To assess the prevalence of social media addiction among Princess Nourah University (PNU) medical students
- To assess the prevalence of loneliness among PNU medical students
- To identify whether there is an association between social media usage and loneliness among PNU medical students

Methods
Study design and setting
The study applied a cross-sectional design and was conducted with medical college students from the Princess Nourah University. Data were collected over a 3-month period from March to May 2017.

Participants
A sample of 324 out of the total population of 2063 PNU medical students was desired. This sample was calculated as providing a 95% confidence level with a 5% margin of error. Due to time limitations, only 302 responses were collected. Our sample was gathered using a multistage technique. One college (Health and Rehabilitation Sciences) from the Princess Nourah University was selected using simple random sampling. We selected seven clusters by simple random sampling from different programmes. Levels 3, 4, and 5 were considered the starting levels, levels 6 and 7 were the middle levels, and levels 8 and 11 were the final levels.

Data collection tools
A self-administered structured questionnaire was used for data collection; it consisted of three parts. The first part contained sociodemographic variables; information was collected on age, marital status, programme and level. The second part was a Social Media Addiction Scale (SMAS), which consisted of 14 items. The SMAS questionnaire was modified from Internet addiction questions and tested to be valid. Responses to the SMAS were made using a 5-point Likert scale: strongly agree, agree, neutral, disagree and strongly disagree, scored 5, 4, 3, 2 and 1, respectively; the fifth question was reverse scored. The total possible score was 70 [2]. The third part was the UCLA Loneliness Scale version 3, which consisted of 20 questions. The responses to this scale were made using a 4-point Likert scale: never, rarely, sometimes and often, scored 1, 2, 3 and 4, respectively; questions 1, 5, 6, 9, 15, 16, 19 and 20 were reversed scored. The total possible score was 80 [19]. The survey questionnaire was translated from English into Arabic using a backward-forward technique.

Pilot study
The clarity of the wording of the questionnaire was checked in a pilot study, which was conducted with 10 participants who were not a part of this sample.

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Statistical analysis

The data was analysed using the Statistical Package for the Social Sciences (SPSS) and presented using descriptive statistics in the form of frequencies and percentages. Descriptive statistics for the total sample were calculated to show the participants' demographic characteristics. The data are presented in descriptive tables as numbers and percentages of the total scores of the SMAS and UCLA scales. A Pearson product-moment correlation was used to examine the relationship between social media addiction and loneliness levels.

A median split was used for the SMAS scale; for the purposes of this study, 50% of the respondents with the lowest scores were identified as "normal" social media users, while the 50% with the highest scores were identified as showing indications of social media addition. A median split was also used for the UCLA measure of loneliness; for the purposes of this study, 50% of the respondents with the lowest scores (40 or less) were identified as not feeling lonely, while the 50% with the highest scores (> 40) were identified as feeling lonely. A chi-square test was used to examine the association between social media addiction and loneliness, and a p-value of < 0.05 was used to indicate statistical significance. The SMAS was confirmed to be a valid instrument for measuring social media addiction. It was derived from the Internet Addiction Scale (IAS) [2]. The UCLA scale was considered valid in measuring loneliness [19].

Results

Table 1 shows that the majority of students were between 19–22 years old (82.1%). The most common marital status of the participants was single (94.7%). Most of the students were in the health sciences programmes (60.9%); a minority were in the communication sciences (5.3%). Most of them were in the final levels (43.0%); a minority were in the starting levels (23.2%).

Table 2 displays the characteristics regarding social media use. All of the participants used social media. About half (54%) had been using social media for 2 to 6 years. A small group (4.6%) stated less that they had been using it for less than 2 years. The most used application was WhatsApp (45.7%); a minority used Facebook (1.7%). Approximately, 42.4% of the participants reported that they spent from 4 to 6 h daily on social media; very few (7.6%) reported less than 2 h.

Table 3 shows the participants' responses to the Social Media Addiction Scale. Approximately, 32.8% of the participants strongly agreed that they used social media longer than intended, and 30.8% strongly agreed that time passed by without feeling it when they used social media. In contrast, only 3.6% of the participants

Table 1 Characteristics of study participants

	Frequency (*N*)	Percent (%)
Age		
19–22	248	82.1
23–25	54	17.9
Marital status		
Married	16	5.3
Single	286	94.7
Programmes		
Health sciences	184	60.9
Rehabilitation sciences	68	22.5
Communication sciences	16	5.3
Department of Medical Technology	34	11.3
Level of education		
Starting levels	70	23.2
Middle levels	102	33.8
Final levels	130	43
Total	302	100

Table 2 Social media usage of the participants

	Frequency (*N*)	Percent (%)
Using social media		
Yes	302	100
No	0	0
Application used		
Facebook	5	1.7
Twitter	107	35.4
WhatsApp	138	45.7
Instagram	120	39.7
Snapchat	89	29.5
Using social media since		
Less than 2 years	14	4.6
From 2 to 6 years	163	54.0
More than 6 years	125	41.4
Time spent to social media		
Less than 2 h	23	7.6
From 2 to less than 4 h	83	27.5
From 4 to 6 h	128	42.4
More than 6 h	68	22.5

strongly agreed that several days could pass without feeling the need to use social media, and 3.3% strongly agreed about often cancelling meetings with friends because of their occupation with social media.

In regard to the prevalence of social media addiction, the results suggest that 225 (75%) have social media addiction according to their self-reports, while around 77 (25%) do not have indications of social media addiction.

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Table 3 Social Media Addiction Scale responses of the participants

	SD	D	N	A	SA
1. I often find myself using social media	11 (3.6%)	34 (11.3%)	47 (15.6%)	111 (36.8%)	99 (32.8%)
2. I often find life to be boring without social media	10 (3.3%)	50 (16.6%)	61 (20.2%)	103 (34.1%)	78 (25.8%)
3. I often neglect my schoolwork because of my usage of social media	25 (8.3%)	82 (27.2%)	90 (29.8%)	80 (26.5%)	25 (8.3%)
4. I get irritated when someone interrupts me when I'm using social media	44 (14.6%)	101 (33.4%)	87 (28.8%)	55 (18.2%)	15 (5.0%)
5. Several days could pass without me feeling it when I am using social media[a]	65 (21.5%)	118 (39.1%)	61 (20.2%)	47 (15.6%)	11 (3.6%)
6. Time passes by without me feeling it when I am using social media	15 (5.0%)	34 (14.2%)	45 (14.9%)	106 (35.1%)	93 (30.8%)
7. I find it difficult to sleep shortly after using social media	42 (13.9%)	115 (38.1%)	57 (18.9%)	61 (20.2%)	27 (8.9%)
8. My family complain frequently of my preoccupation with social media	50 (16.6%)	99 (32.8%)	67 (22.2%)	51 (16.9%)	34 (11.3%)
9. I will be upset if I had to cut down the amount of time I spend using social media	44 (14.6%)	117 (38.7%)	72 (25.5%)	94 (16.2%)	15 (5.0%)
10. My school grades have deteriorated because of my social media use	72 (23.8%)	114 (37.7%)	71 (23.5%)	27 (8.9%)	18 (6.0%)
11. I often use social media while sitting in the care	101 (33.4%)	59 (19.5%)	84 (27.8%)	34 (11.3%)	24 (7.9%)
12. I often cancel meeting my friends because of my occupation with social media	107 (65.3%)	86 (28.5%)	21 (7.0%)	15 (5.0%)	10 (3.3%)
13. I find myself thinking about what happened in social media when I am away from them	60 (19.9%)	101 (33.4%)	50 (16.6%)	67 (22.2%)	24 (7.9%)
14. I feel my social media usage has increased significantly since I began using time	16 (5.3%)	39 (12.9%)	73 (24.2%)	115 (38.1%)	59 (19.5%)

SD "strongly disagree", *D* "disagree", *N* "neutral", *A* "agree", *SA* "strongly agree"

[a] Reverse scoring

Table 4 Relationship between social media addiction and the characteristics of study participants

	Not addict	Addict	χ²	*P*-value
Age				
19–22	62	186	0.180	0.671
23–25	15	39		
Marital status				
Married	3	13	0.405	0.525
Single	74	212		
Programmes				
Health sciences	46	138	0.948	0.814
Rehabilitation sciences	19	49		
Communication sciences	5	11		
Department of Medical Technology	7	27		
Levels of education				
Starting levels	15	55	0.940	0.625
Middle levels	26	76		
Final levels	36	94		
Total	77	225		

Table 4 shows that there was no significant associations between social media addiction and the characteristics of study participants.

Table 5 shows the participants' responses to the loneliness scale. Approximately, 54.6% of the participants often felt that they were part of a group of friends, and 46.4% reported often feeling like they were in tune with the people around them. In contrast, 7.3% of the participants reported often feeling that their relationships with others were not meaningful, and 4% felt left out.

In regard to loneliness, 156 participants (52%) reported not having a feeling of loneliness, while 146 (48%) did not indicate having a feeling of loneliness.

Table 6 shows that there was no significant associations between the characteristics of the participants and loneliness.

Figure 1 shows that there is a significant weak correlation between social media addiction and loneliness.

Discussion

Social media use has been extensively associated with loneliness [10]. The present study identified a problem of social media addiction indicators and feelings of loneliness among medical students. Most of our study sample was between 19–22 years old.

Social media usage

All the participants in the sample were using social media, and the application that they used the most was WhatsApp (45.7%); this was consistent with a study conducted at the King Khalid University that showed that most of its students were using WhatsApp (35%). Regarding the daily time spent on social media, 42.4% of the participants reported that they spent 4 to 6 h. Our result was in accordance with another study conducted in Jordan among university students showing that most of the students were using social media for 3 h or more [14].

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Table 5 Loneliness scale items among the studied participants

	Never	Rarely	Sometimes	Often
1. How often do you feel that you are "in tune" with the people around you?[a]	19 (6.3%)	43 (14.2%)	100 (33.1%)	140 (46.4%)
2. How often do you feel that you lack companionship?	111 (36.8%)	91 (30.1%)	71 (23.5%)19	29 (9.6%)
3. How often do you feel that there is no one you can turn to?	130 (43.0%)	74 (24.5%)	64 (21.2%)	34 (11.3%)
4. How often do you feel alone?	123 (40.7)%	91 (30.1)%	58 (19.2)	30 (9.9%)
5. How often do you feel part of a group of friends?[a]	22 (7.3%)	45 (14.9)%	70 (23.2)%	165 (54.6)%
6. How often do you feel that you have a lot in common with the people around you?[a]	25 (8.3%)	65 (21.5)%	94 (31.1%)	118 (39.1%)
7. How often do you feel that you are no longer close to anyone?	125 (41.4%)	73 (24.2%)	78 (25.8%)	26 (8.6%)
8. How often do you feel that your interests and ideas are not shared by those around you?	71 (23.5%)	101 (33.4%)	91 (30.1%)	39 (12.9%)
9. How often do you feel outgoing and friendly?[a]	22 (7.3%)	61 (20.2%)	103 (34.1%)	116 (38.4%)
10. How often do you feel close to people?	23 (7.6%)	56 (18.5%)	117 (38.7%)	106 (35.1%)
11. How often do you feel left out?	156 (51.7%)	84 (27.8%)	50 (16.6%)	12 (4.0%)
12. How often do you feel that your relationships with others are not meaningful?	142 (47.0%)	84 (27.8%)	54 (17.9%)	22 (7.3%)
13. How often do you feel that no one really knows you well?	104 (34.4%)	74 (24.5%)	81 (26.8%)	43 (14.2%)
14. How often do you feel isolated from others?	148 (49.0%)	74 (24.5%)	47 (15.6%)	33 (10.9%)
15. How often do you fee1 you can find companionship when you want it?[a]	25 (8.3%)	58 (19.2%)	112 (37.1%)	107 (35.4%)
16. How often do you feel that there are people who really understand you?[a]	29 (9.6%)	90 (29.8%)	132 (43.7%)	51 (16.9%)
17. How often do you feel shy?	29 (9.6%)	90 (29.8%)	132 (43.7%)	51 (16.9%)
18. How often do you feel that people are around you but not with you?	65 (21.5%)	104 (34.4%)	89 (29.5%)	44 (14.6%)
19. How often do you feel that there are people you can talk to?[a]	21 (7.0%)	49 (16.2%)	97 (32.1%)	135 (44.7%)
20. How often do you feel that there are people you can turn to?[a]	26 (8.6%)	48 (15.9%)	93 (30.8%)	135 (44.7%)

[a] = reveresed scoring question

Table 6 Relationship between loneliness and the characteristics of the participants

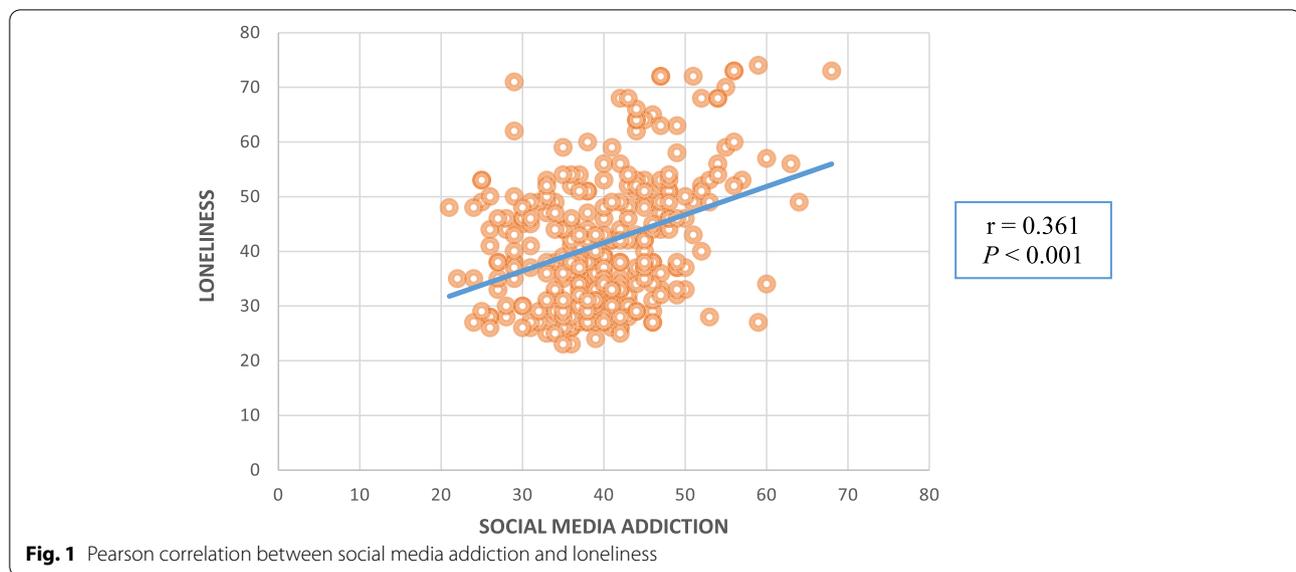|	Not lonely	Lonely	χ^2	P-value
Age				
19–22	122	126	3.367	0.067
23–25	34	20		
Marital status				
Married	12	4	3.687	0.055
Single	144	142		
Programmes				
Health sciences	100	84	3.064	0.382
Rehabilitation sciences	31	37		
Communication sciences	10	6		
Department of Medical Technology	15	19		
Level of education	36	34	0.006	0.997
Middle levels	53	49		
Final levels	67	63		
Total	156	146		

About half of our participants have used social media for 2 to 6 years, which is in accordance with a US study that has shown that 73% of American teens aged 12 to 17 have used an online social network website [13]. This age group is most attracted to social media, and they tend to use it more.

Social Media Addiction Scale items

Around three-quarters of the participants stated that they used social media longer than they intended; this finding is similar to that of a study conducted among US college students [5]. This is often because users do not feel time passing when they use social media. Approximately, 61% of our participants reported that their social media use had no impact on their academic grades. This finding was similar to that of a study conducted among Saudi adults [5]. Also, 29.1% of our participants found it difficult to sleep after social media use. This finding somewhat contradicts the findings of a study conducted among Saudis in which half reported having difficulty sleeping after social media use [5].

Social media addiction

Our study found that 75% of the participants had indicators of social media addiction, which was contrary to a study conducted among Wah Medical College students, in which 29.2% had similar indications. The differences in these results might be due to different methods used for measuring Internet addiction, differences in the cutoff values used and different cultures in the communities studied. Despite these differences, Internet addiction is a serious problem, especially for adolescents. This is an important age for individual development, and

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Fig. 1 Pearson correlation between social media addiction and loneliness

individuals can get carried away with the enriched environment of the Internet [11].

Social media addiction and characteristics of the study participants

The present study found no significant association between social media addiction and the age of the participants ($p = 0.671$). Chaudhari et al. [4] also found no significant associations between these variables among medical students. Social media addiction may not be related to a certain age or there may necessary uses of it for work or other purposes. Our study also failed to find an association between the marital state of our participants and social media addiction ($p = 0.525$). However, a study by Oguz and Cakir [17] found a significant association between these factors. The variation in prevalence can be attributed to the heterogeneity of the study samples [15].

Regarding the relationship between study levels and social media addiction, the current study revealed an association between social media addiction and student study level, but it was not significant ($p = 0.625$). This is in accordance with another study among medical students [4].

Loneliness scale items

Using a loneliness scale, we found that the largest proportion (54.6%) of participants felt that they were part of a group of friends. We believe the reason was that most of the participants had high self-confidence, and their social relations extended to their surroundings. Approximately, 46.4% reported often feeling in harmony with the people surrounding them. Their reason may be that they can adapt to people of all kinds and have a sense of security among people and their ability to adapt to the tremendous developments in technology and rapid changes in society.

The lowest percentage was the extent to which the participants felt that their relationship with others was meaningful (7.3%); we attributed this to the participants' appreciation of social relations, knowledge of their value in life and the ability to benefit from those present around them. However, others move away from commitments to relationships and prefer superficial relations because they see them as not important. Approximately, 4% of participants in our study felt they were excluded. Individuals can feel stability and autonomy when they are desirable in their community and live without thinking that they are excluded. We also know that psychological stress and a lack of time all affect patterns of personality, feelings and how to face them.

Prevalence of loneliness

Among our medical students, about half reported feeling lonely, which may be due to the pressures facing them. A study conducted by Morahan-Martin and Schumacher [15] of undergraduate students found that 20% of them indicated feeling lonely.

Loneliness and characteristics of the study participants

Our study found no significant association between the level of loneliness and age, level of education of the students or marital status. This finding was consistent with the results of a study with Turkish university students [17]. Another study found that married individuals were

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less lonely than single individuals; this finding was similar to the findings of that work [8].

Social media addiction and loneliness
Our study found a significant correlation between social media addiction and loneliness, which confirmed the same finding of a study by the Wah Medical College [11]. Many studies explain the vicious circle between social media addiction and loneliness. As there is a positive relation between social media and loneliness, if social media usage increases, then loneliness will increase and vice versa [15].

Conclusions
This study has provided insight into the association between social media usage and loneliness of PNU medical students. We found that social media addiction and loneliness did not have significant associations with marital status, age, levels of education and programmes. However, there was a weak significant correlation between social media addiction and the loneliness of participants. The following recommendations are suggested:

1. Develop and expand awareness programmes about the consequences of social media use among students.
2. Develop awareness programmes about the physical and mental hazards of loneliness.
3. Conduct workshops to train students to manage their time when using social media.

Declarations

Ethics approval and consent to participate
Official approval to conduct the study was obtained from the ethics committee of the Princess Nourah bint Abdulrahman University (IRB Number: 17-0029). After clarifying the aims of our study, informed written consent was obtained from the participants who agreed to participate in the study. The participants were assured that all their responses were anonymous and would remain confidential, and that their data would only be used for the purpose of this research.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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