

# Using Social Media on Mental Health among University Medical Students in Abha City, Southern Saudi Arabia

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## Research article

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# Abstract

## Background

During the past 10 years, the rapid development of social networking sites (SNSs) such as Facebook, Twitter, snap chat, games and so on has caused several profound changes in the way people communicate and interact. SNSs are often defined as Web-based platforms that allow individuals to create their own personal profile and build a network of connections with other users. Today has more than one billion active users. And, it is clear that during the past 10 years, online social networking has caused significant changes in the way people communicate and interact affecting their mental and psychological health .This study aimed to assess social media utilization and its impact on mental health among medical college students in Abha city.

## Method

A cross sectional approach was used targeting college of medicine students in Abha city. Data were collected using structured questionnaire which developed by the researchers after intensive literature review and experts consultation. The questionnaire was uploaded online using social media platforms by the researchers and their relatives and friends to be filled with all population in Abha city.

## Results

The study included 311 students whose ages ranged from 17 to 29 years old with mean age of  $22.8 \pm 2.1$  years. Female figured 64.6% of the participants and 90.7% of the students were not married. About 28.6% of the students were in the pre-clinical grades and 14.5% were interns. Those who use social media platforms for less than one hour daily were 2.6% of the students while 50.5% use it for 6 hours daily. As for used social media platforms, Snap chat and Twitter were the most used. Poor mental health was detected among nearly half of the students.

## Conclusions

In conclusion, the study revealed that medical college students used social media platform intensively with reported high insomnia rate and poor mental health for half of them.

# Background

Social media has been defined as internet-based and networked communication platforms that allow both personal and public communication. (1) This definition includes social media platforms such as Facebook, Twitter and Instagram. These platforms have become mainstays of popular culture. (2) Based on the upward trend in social media utilization rates, it is estimated that by 2021, over 3 billion people will be using it. (3)

Social media use in education implies using online social media platforms in academic settings. This is ranging from elementary and secondary school to post-secondary education. (4–6) Social media is becoming more accessible and easier to use, meaning that the age of students who are able to understand and use social media are getting younger and younger. (7) Unfortunately, students mostly use social media for purposes other than learning and spend very long time using the social media platforms daily. (8) It was noticed that 94% of adults worldwide create a social account and used it at least once. (9) Nearly, 73% of adults use social media. (10)

Mental health is defined as a state of well-being in which every individual realizes his or her own potential, ability cope with the daily stresses of life, and productivity. (11) “Facebook depression” is a term resulting from children’s use of social media. A report by the American Academy of Paediatrics defines Facebook depression as “depression that develops when teens and preteens spend time on social media sites and then begin to exhibit classic symptoms of depression due to the intensity of the online world. (12) The pattern of social media platforms use is related to youth mental health. The current study was conducted to assess social media utilization in all forms and its impact on mental health among medical college students in Abha city.

## Method

A cross sectional approach was used targeting college of medicine students in Abha city during the academic year 2020 (1128 male students and 504 female students). The study was conducted during the period from 1 January to 15 February 2020 Data were collected using structured questionnaire which developed by the researchers after intensive literature review and expert’s consultation. The questionnaire data included student’s personal data such as age, gender, and academic level. Students’ social media utilization was assessed in the second section of the questionnaire including duration of use per day, availability and monthly cost of internet, and the most used social media platforms. Students mental health was assessed using a developed tool consists of 10 items covering students concentration ability, self-confidence, ability to make decisions and useful actions besides being enjoyed doing missions (4 items). The other 6 items covered negative statements including being under pressure, anxious, unhappy, and being worthless. Students’ attitude was measured using 10 questions with multiple answers format. All items were answered using 5 point likert scale ranging from strongly disagree (1 point) to strongly agree (5 points). The questionnaire was uploaded online using social media platforms by the researchers and their relatives and friends to be filled with all population in Abha city. A pilot study was conducted to assess tool applicability and reliability. The tool reliability coefficient (Alpha Cronbach’s) was assessed and equalled 0.86.

## Data analysis

After data were extracted, it was revised, coded and fed to statistical software IBM SPSS version 22(SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed test. P value less than 0.05 was considered to be statistically significant. For mental health items, the total summation of the discrete

scores of the different items was calculated after reversing the scores of the negative statements. A student with score less than 60% (30 points) of the maximum score (50 points) was considered to have poor mental health while good mental was considered if he had score of 60% of the maximum or more. Descriptive analysis based on frequency and percent distribution was done for all variables including demographic data, Social media utilization data, and mental health assessment items. Crosstabulation was used to assess distribution of students' social media utilization by their personal data and to assess mental health according to social media utilization. Relations were tested using Pearson chi-square test.

## Results

The study included 311 students whose ages ranged from 17 to 29 years old with mean age of  $22.8 \pm 2.1$  years. Female figured 64.6% of the participants and 90.7% of the students were not married. About 28.6% of the students were in the pre-clinical grades (1–6) and 14.5% were interns. GPA was 3.5–4.5 for 47.6% of the students.

Table 1 illustrates Social media use among University students in Abha city. Those who use social media platforms for less than one hour daily were 2.6% of the students, 13.5% use it for 2–3 hours while 33.4% use the platforms for 4–5 hours and 50.5% use it for 6 hours daily or more. Network was available all over the day among 86.5% of the students. About 49% of the students pay about 100–300 SR as internet cost monthly. As for used social media platforms, Snap chat and Twitter were the most used (64.3% for each) followed by WhatsApp (58.5%), and Instagram (47.3%).

Table 1  
Social media use among University students in Abha city

Social media use		<b>No</b>	<b>%</b>
<b>Daily use of social media</b>	<i>&lt; 1 hour</i>	8	2.6%
	<i>2-3 hours</i>	42	13.5%
	<i>4-5 hours</i>	104	33.4%
	<i>6 hours/ more</i>	157	50.5%
<b>Network availability over the day</b>	<i>Rare</i>	8	2.6%
	<i>Most of the day</i>	34	10.9%
	<i>All over the day</i>	269	86.5%
<b>Net cost per month</b>	<i>Free</i>	44	14.1%
	<i>&lt; 100 SR</i>	59	19.0%
	<i>100-300 SR</i>	153	49.2%
	<i>300-500 SR</i>	47	15.1%
	<i>&gt; 500 SR</i>	8	2.6%
<b>Used social media platform</b>	<i>Snap chat</i>	200	64.3%
	<i>Twitter</i>	200	64.3%
	<i>WhatsApp</i>	182	58.5%
	<i>Instagram</i>	147	47.3%
	<i>YouTube</i>	9	2.9%

On relating social media use with students personal data (Table 2), 49.5% of students aged less than 25 years used it for more than 6 hours daily compared to 52% of those who aged above 25 years ( $P = .663$ ). About 50% of both male and female students used social media for 6 hours or more daily. As for academic level, 53.3% of interns used the platforms for more than 6 hours daily while 42.7% of the students in the pre-clinical grades used it for the same duration. Exact of 60% of the students whose GPA was less than 2.5 spent more than 6 hours on social media compared to 41.3% of those whose GPA was 4.5-5 with recorded statistical significance ( $P = 0.049$ ).

Table 2  
Distribution of students social media use by their personal data

<i>Personal data</i>	<i>Total (%)</i>	<i>Daily use of social media</i>				<i>P-value</i>
		<i>&lt; 6 hours</i>		<i>&gt; 6 hours</i>		
		<i>No</i>	<i>%</i>	<i>No</i>	<i>%</i>	
<b>Age in years</b>						<i>.663</i>
<i>&lt; 25 years</i>	<i>184 (59.2%)</i>	<i>93</i>	<i>50.5%</i>	<i>91</i>	<i>49.5%</i>	
<i>&gt; 25 years</i>	<i>127 (40.8%)</i>	<i>61</i>	<i>48.00%</i>	<i>66</i>	<i>52.0%</i>	
<b>Gender</b>						<i>.911</i>
<i>Male</i>	<i>110 (35.4%)</i>	<i>54</i>	<i>49.1%</i>	<i>56</i>	<i>50.9%</i>	
<i>Female</i>	<i>201 (64.6%)</i>	<i>100</i>	<i>49.8%</i>	<i>101</i>	<i>50.2%</i>	
<b>Marital status</b>						<i>.357</i>
<i>Non married</i>	<i>282 (90.7%)</i>	<i>142</i>	<i>50.4%</i>	<i>140</i>	<i>49.6%</i>	
<i>Married</i>	<i>29 (9.3%)</i>	<i>12</i>	<i>41.4%</i>	<i>17</i>	<i>58.6%</i>	
<b>Academic level</b>						<i>.220</i>
<i>Pre-clinical</i>	<i>89 (28.6%)</i>	<i>51</i>	<i>57.3%</i>	<i>38</i>	<i>42.7%</i>	
<i>Clinical</i>	<i>177 (56.9%)</i>	<i>82</i>	<i>46.3%</i>	<i>95</i>	<i>53.7%</i>	
<i>Intern</i>	<i>45 (14.5%)</i>	<i>21</i>	<i>46.7%</i>	<i>24</i>	<i>53.3%</i>	
<b>GPA</b>						<i>.049*</i>
<i>&lt; 2.49</i>	<i>10 (3.2%)</i>	<i>4</i>	<i>40.0%</i>	<i>6</i>	<i>60.0%</i>	
<i>2.5–3.49</i>	<i>49 (15.8%)</i>	<i>26</i>	<i>53.1%</i>	<i>23</i>	<i>46.9%</i>	
<i>3.5–4.49</i>	<i>148 (47.6%)</i>	<i>63</i>	<i>42.6%</i>	<i>85</i>	<i>57.4%</i>	
<i>4.5-5</i>	<i>104 (33.4%)</i>	<i>61</i>	<i>58.7%</i>	<i>43</i>	<i>41.3%</i>	
<i>P: Pearson X<sup>2</sup> test</i>						
<i>* P &lt; 0.05 (significant)</i>						

Regarding students attitude, Table 3 illustrates that 87.8% of the students agreed on that social media is a useful medium for them and 74% of them agreed on that social media provides space for games while 70.4% reported that information from social media promotes self-awareness. Only 30.9% of the students documented that no improvement in social life since they entered on social media.

Table 3  
Distribution of students' attitude regarding social media platforms use in Abha city

<b>Students attitude data</b>	<b>Agreement rate</b>	
	<b>No</b>	<b>%</b>
Social media is a useful medium for university students	273	87.8%
I prefer spending more time on social media	161	51.8%
I prefer making friends on social media	111	35.7%
Information from social media promotes user self-awareness	219	70.4%
Information from social media enhances communication skills	191	61.4%
Social media provides space for games	230	74.0%
Social media affects my health (physical & psychological)	202	65.0%
Online social networks distract me from my real life	184	59.2%
I spend more time on social media than on real social relationships	184	59.2%
There has been no improvement in social life since I entered on social media	96	30.9%

Mental health depression was illustrated in Table 4 which indicated that 78.5% of the students reported that they feel able to make decisions, 75.6% said that can concentrate on what they do and 65.9% reported that they enjoy my daily activities. On the other hand, 51.1% of the students usually feel that they are under pressure and 28.6% reported that they feel unhappy or depressed. Exact of 25.7% of the students agreed on that feel that they cannot overcome my difficulties. In total, good mental health was detected among 168 (54%) of the students (Fig. 1).

Table 4  
Description of mental health of university students in Abha city

Mental health items	<i>Disagree</i>		<i>Neutral</i>		<i>Agree</i>	
	No	%	No	%	No	%
I can concentrate on what I do	26	8.4%	50	16.1%	235	75.6%
I feel I am doing a useful job	49	15.8%	63	20.3%	199	64.0%
I feel able to make decisions	33	10.6%	34	10.9%	244	78.5%
Enjoy my daily activities	44	14.1%	62	19.9%	205	65.9%
I suffer from insomnia as a result of anxiety	132	42.4%	60	19.3%	119	38.3%
I always feel being under pressure	87	28.0%	65	20.9%	159	51.1%
I feel that I cannot overcome my difficulties	145	46.6%	86	27.7%	80	25.7%
I feel unhappy or depressed	148	47.6%	74	23.8%	89	28.6%
I lost self confidence	177	56.9%	65	20.9%	69	22.2%
I feel like a worthless person	222	71.4%	52	16.7%	37	11.9%

Table 5 demonstrates Distribution of students' mental health according to social media utilization. Exact of 58.4% of the students who use social media for less than 6 hours daily had good mental health compared to 49.7% of those who used it for more than 6 hours daily with recorded statistical significance ( $P = .049$ ). Good mental health was also insignificantly higher among those who use the internet for free than other who pay more than 500 SR monthly (52.3% vs. 37.5%, respectively;  $P = 0.750$ ). Good mental health was recorded among 54% of Snap Chat users compared to 44.4% of those who use YouTube ( $P = .643$ ).

Table 5  
Distribution of students' mental health according to social media utilization rate

Personal data		<i>Mental health</i>				<i>P-value</i>
		Poor		Good		
		No	%	No	%	
<b>Daily use of social media</b>	<i>&lt; 6 hours</i>	64	41.6%	90	58.4%	.049*
	<i>&gt; 6 hours</i>	79	50.3%	78	49.7%	
<b>Net cost per month</b>	<i>Free</i>	21	47.7%	23	52.3%	.750
	<i>&lt; 100 SR</i>	27	45.8%	32	54.2%	
	<i>100–300 SR</i>	66	43.1%	87	56.9%	
	<i>300–500 SR</i>	24	51.1%	23	48.9%	
	<i>&gt; 500 SR</i>	5	62.5%	3	37.5%	
<b>Network availability over the day</b>	<i>Rare</i>	4	50.0%	4	50.0%	.450
	<i>Most of the day</i>	19	55.9%	15	44.1%	
	<i>All over the day</i>	120	44.6%	149	55.4%	
<b>Used social media platform</b>	<i>WhatsApp</i>	87	47.8%	95	52.2%	.643
	<i>Twitter</i>	97	48.5%	103	51.5%	
	<i>Instagram</i>	72	49.0%	75	51.0%	
	<i>Snap chat</i>	92	46.0%	108	54.0%	
	<i>YouTube</i>	5	55.6%	4	44.4%	
<i>P: Pearson X<sup>2</sup> test</i>						
<i>* P &lt; 0.05 (significant)</i>						

## Discussion

Regardless the benefits of social media, it is important to know that social media not been an alternative for real-world human relations. It requires in-person contact with others to set off the hormones that alleviate stress and make you feel happier, healthier, and more positive. Incongruously for a technology that's designed to bring people closer together, spending too much time using social media can actually make you feel more lonely and isolated and exacerbate mental health problems such as anxiety and depression. (13, 14)

The current study aimed to assess the pattern of using social media among medical college students in Abha city. Also, to assess the effect of social media utilization on the student's mental health. The study revealed that all included students use social media platforms by different intensity. More than half of the sample spent 6 hours or more daily using social media which is too much time period irrespective of high monthly cost of the internet (more than 500 SR). The most commonly used sites platforms were Snap Chat, WhatsApp, and Twitter. Social media use was nearly equal among male and female students, among different ages, and among all students regardless their academic level. One of the most important findings was that GPA was significantly affected by the duration of using social media. It was significantly lower among those who used the platforms for more than 6 hours daily. Many researchers studied the pattern of using social media platform among adults including students. A study was conducted to assess social media use among older adults by Bell C et al, 2013. (15) The study revealed that Fifty-nine participants (42%) identified themselves as current Facebook users. Against what was expected, there was not a significant difference in loneliness between Facebook users and non-users for this sample. A second study was conducted in USA, 2016 to assess Social Media Use and Access to Digital Technology in US Young Adults. (16) The researchers reported that in 2014, 89.42 of young adults regular used at least one social media site. In 2016, this increased to 97.5%. Among regular users of social media sites in 2016, the top five sites were Tumblr (85.5%), Vine (84.7%), Snapchat (81.7%), Instagram (80.7%), and LinkedIn (78.9%).

Social media use may affect users lifestyle including sleep hygiene, loneliness feeling, social relations and up to their mental and social health. The current study revealed that 46% of the students had poor mental health which means nearly 1 out of each 2 students. About half of the students (42%) reported that they suffer from insomnia. More than half of the students feel loss of self confidence and nearly three quarters of them feel that they feel like a worthless person. Good mental health was significantly higher among those who used social media for less time period (less than 6 hours daily) which means the more use of social media for long time can affects users mood and feeling of the surrounding period. Also it may make the user to object for many of his real life situation due to the ideal world he engages in with social media which in turn affect his mental health.

The Royal Society for Public Health (RSPH) conducted in their report that studied social media and its effects on mental health of young person and their wellbeing taken in considerations each positive and negative effects. (17) The social media is playing a significant role in the rise of poor mental health that we are observed in young person. The young person they underwent in their study stated that four out of the five most famous and usable social media platforms (Instagram, Snap chat, Facebook, Twitter) made their feelings of anxiety and depression worse. Users are spending more than two hours per day on platforms such as Facebook, Twitter and Instagram are more likely to have poor mental health, such as psychological distress. In china, there is Brain imaging (MRI) studies, report that there are significant changes in the areas of the brain that regulate impulse control and decision making among individuals with Internet gaming disorder. (18) In 2014, researchers in Austria found that participants in one of their studies reported a mood decline after using Facebook for 20 minutes, compared to people who only visited some websites in the same duration. The study said people felt this low mood because they

thought they had wasted their time using Facebook. (19) Locally, The majority of Saudi population is under 30 years which make them the most group using social media and games. In last year's social media statistics reveals that the number of internet users in Saudi Arabia rose swiftly to touch 30 million people by the beginning of 2018. The internet penetration in the country has now reached 91%. (20) In 2016, study was done in Al-Qassim region of Saudi Arabia aimed to assess the prevalence of addiction to video games and its correlation with mental health, among 276 high school students, they found addiction to video games was strongly associated with psychological distress (OR = 4.1, 95% CI = 1.80, 9.47). (21) Another study was conducted in Buraydah, Al Qassim city, Saudi Arabia to examine relationship between use of social media and depression among 80 female teenagers were selected randomly. About one third of the students have diagnosis with depression and out of 48 participants who used social media more than 5 hours daily it is only 20 (41.67%) who had depression. (21)

## Conclusions

In conclusion, the study revealed that medical college students used social media platform intensively (more than 6 hours daily) with reported high insomnia rate and poor mental health for half of them. This in turn affected their education achievement due to loss of concentration during daytime. More effort should be paid to improve the students' awareness regarding how to use social media and how to avoid being social media addict. This can be achieved through periodic health education sessions, being included in their study courses and through national policy using all available media.

## Abbreviations

Not applicable

## Declarations

### **Ethics approval and consent to participate:**

Informed consent was obtained from all students prior to data collection as written consent. All the selected respondents were given assurance of confidentiality that the information gathered will be used exclusively for research purposes. This study was approved by the Institutional Review Board of the College of Medicine; King Khalid university (KKU) (Reference #: (ECM#2020-128)– (HAPO-06-B-001)).

All necessary official approvals to conduct this study were obtained.

**Consent for publication:** Not applicable.

### **Availability of data and materials:**

The data that support the findings of the current study are available from the corresponding author on reasonable request.

**Competing interests:** The authors declare that they have no competing interests

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### **Authors' contributions**

AM, and SA were the main authors of the manuscript. AM planned the study. AMA and RS contributed to the data analysis and manuscript writing with assistant and supervision of SA. , RSA and AmA assisted in final analyses and writing the manuscript in final proof article. All authors approved submission of the final manuscript.

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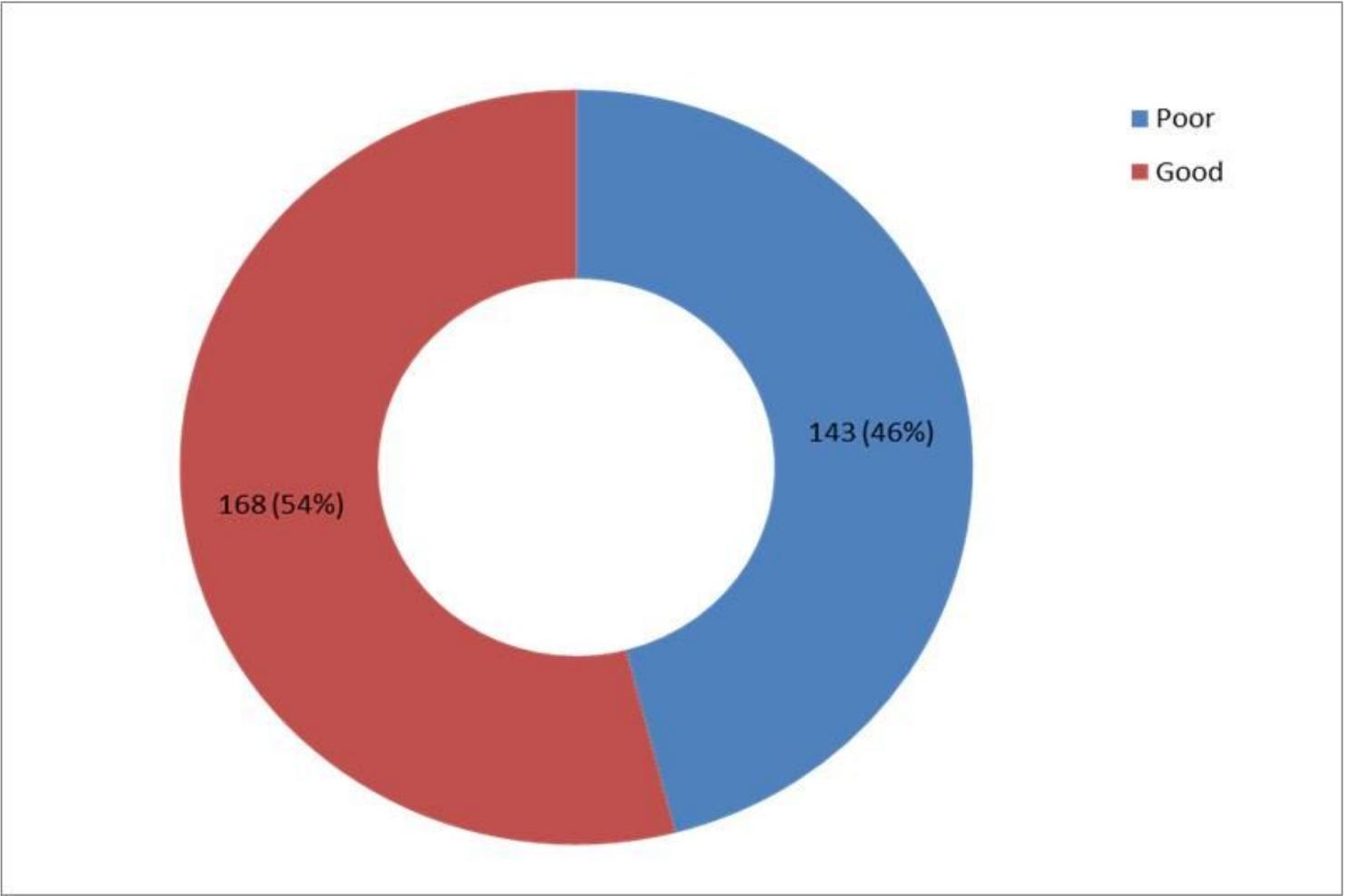
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## Figures



**Figure 1**

Overall mental health among university students in Abha city.

### Supplementary Files

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