

# Social Networking Addiction among Health Sciences Students in Oman

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## إدمان التواصل الاجتماعي الإلكتروني بين طلاب العلوم الصحية في سلطنة عمان

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**ABSTRACT: Objectives:** Addiction to social networking sites (SNSs) is an international issue with numerous methods of measurement. The impact of such addictions among health science students is of particular concern. This study aimed to measure SNS addiction rates among health sciences students at Sultan Qaboos University (SQU) in Muscat, Oman. **Methods:** In April 2014, an anonymous English-language six-item electronic self-reporting survey based on the Bergen Facebook Addiction Scale was administered to a non-random cohort of 141 medical and laboratory science students at SQU. The survey was used to measure usage of three SNSs: Facebook (Facebook Inc., Menlo Park, California, USA), YouTube (YouTube, San Bruno, California, USA) and Twitter (Twitter Inc., San Francisco, California, USA). Two sets of criteria were used to calculate addiction rates (a score of 3 on at least four survey items or a score of 3 on all six items). Work-related SNS usage was also measured. **Results:** A total of 81 students completed the survey (response rate: 57.4%). Of the three SNSs, YouTube was most commonly used (100%), followed by Facebook (91.4%) and Twitter (70.4%). Usage and addiction rates varied significantly across the three SNSs. Addiction rates to Facebook, YouTube and Twitter, respectively, varied according to the criteria used (14.2%, 47.2% and 33.3% versus 6.3%, 13.8% and 12.8%). However, addiction rates decreased when work-related activity was taken into account. **Conclusion:** Rates of SNS addiction among this cohort indicate a need for intervention. Additionally, the results suggest that addiction to individual SNSs should be measured and that work-related activities should be taken into account during measurement.

**Keywords:** Addictive Behaviors; Internet; Social Networking; Social Media; Students; Oman.

**المخلص:** الهدف: يعد إدمان مواقع التواصل الاجتماعي ظاهرة دولية والتي يمكن قياسها بطرق عديدة. ويشكل أثر هذا الإدمان بين طلاب العلوم الصحية اهتماما خاصا. تهدف هذه الدراسة لقياس إدمان طلاب العلوم الصحية لمواقع التواصل الاجتماعي بجامعة السلطان قابوس في مسقط، سلطنة عمان. **الطريقة:** طبق استبيان إلكتروني باللغة الإنجليزية مكون من ست عناصر تقيماً ذاتياً هي Bergen Facebook Addiction Scale في شهر إبريل 2014، بشكل غير عشوائي لـ 141 طالبا في تخصصي الطب وعلوم المختبرات في جامعة السلطان قابوس. استخدم الاستبيان لقياس استعمال ثلاث أنواع من مواقع التواصل الاجتماعي (الفيسبوك)، (اليوتيوب)، (التويتر). استخدمت مجموعتان من المعايير للتحقق من نسبة الإدمان (علامة 3 على أربع من العناصر أو علامة 3 على العناصر الست). تم قياس مدى استخدام مواقع التواصل الاجتماعي ذات الصلة بالعمل. **النتائج:** تبين أن 81 من الطلاب أكملوا الاستبيان (معدل الاستجابة 57.4%). كان اليوتيوب من أكثر مواقع التواصل الاجتماعي الثلاثة استخداما (100%) ويليه (الفيسبوك) (91.4%) وأخيرا (التويتر) (70.4%). وتباينت معدلات الاستخدام والإدمان كثيرا عبر المواقع الثلاثة. معدلات الإدمان للفيسبوك، اليوتيوب، والتويتر حسب المعايير المستخدمة (12.8% و 13.8% و 6.3% إزاء 33.3% و 47.2% و 14.2%) على التوالي. وانخفضت معدلات الإدمان عند فحص الأنشطة ذات الصلة بالعمل. **الخلاصة:** دل معدل الإدمان على مواقع التواصل الاجتماعي بين هذه الدفعة على وجوب التدخل. بالإضافة إلى ذلك تشير النتائج على إن الإدمان على مواقع التواصل الفردية يجب أن تقاس وأن الأنشطة ذات الصلة بالعمل يجب أن تؤخذ بعين الاعتبار أثناء القياس.

**مفتاح الكلمات:** سلوكيات الإدمان؛ شبكة؛ الشبكات الاجتماعية؛ وسائل التواصل الاجتماعية؛ طلاب؛ عمان.

### ADVANCES IN KNOWLEDGE

- The results of this study confirm the existence and indicate the extent of social networking site (SNS) addiction among a sample of health sciences students in Oman.
- These findings support the argument that SNS addiction should be examined for individual SNSs rather than in general only.
- Work-related SNS activity must be taken into account when measuring SNS addiction as excluding the use of social media for work purposes was found to decrease addiction rates.

### APPLICATION TO PATIENT CARE

- Given the associations between SNS addiction and certain personality traits, extended use of SNSs among health professionals may be indirectly harmful to patients. Uncovering the extent of SNS addiction among health sciences students may help to target future addiction recovery or prevention programmes, if needed.

OF THE MORE THAN 2.5 BILLION ACTIVE Internet users worldwide, some 1.8 billion were estimated to use social networking sites (SNSs) in 2014, representing approximately 25% of the world's total population.<sup>1,2</sup> The most widely used SNSs are Facebook (Facebook, Inc., Menlo Park, California, USA), YouTube (YouTube, San Bruno, California, USA) and Twitter (Twitter, Inc., San Francisco, California, USA), with 1.3 billion, 1 billion and 645 million actively registered users, respectively.<sup>3–5</sup> Furthermore, the number of additional people using these SNSs without registering as users is unknown. Within the last few years, Internet usage in Oman has grown dramatically; in 2014, there were more than 2 million subscribers, a trend which had been predicted in previous research according to international patterns.<sup>6,7</sup> Following global SNS trends, Oman currently has more than 600,000 Facebook users.<sup>6</sup> While specific national figures for other SNSs are not available, there is no reason to suspect that usage of these other sites in Oman is not also in line with international trends.

However, usage of the Internet and SNSs *per se* is not alarming—the main concern lies with addiction to these forms of technology. In 1995, the psychiatrist Ivan Goldberg satirically introduced the term 'Internet addiction disorder' (IAD).<sup>8</sup> By 1996, the concept of Internet addiction was being taken more seriously; it was proposed to be a clinical disorder and a useful diagnostic questionnaire (based on a gambling addiction questionnaire) was developed.<sup>9</sup> Although IAD is still not recognised as a clinical disorder, as opposed to Internet gaming disorder, there is strong support for the concept. Studies have indicated that as many as 3–4% of young people—in some cases, much more—exhibit symptoms of Internet addiction, with one of the most recent cases involving a 31-year-old patient who suffered from IAD with the use of Google Glass™ wearable technology (Google, Googleplex, Mountain View, California, USA).<sup>10–13</sup>

The characteristics of Internet addiction are similar to those of any other addiction. Çam *et al.* summarised the condition as involving excessive mental preoccupation with the Internet, coupled with repetitive thoughts of limiting or controlling this use and a subsequent failure to prevent access.<sup>14</sup> Individuals with this condition continue to use the Internet despite a significant impact upon their day-to-day functionality at various levels, spending ever increasing amounts of time online and craving access when it is not available.<sup>14</sup> In addition to generalised Internet addiction, there has been focus on specific types of addiction (e.g. fixation with online games or mobile phones).<sup>8,15–17</sup> Similarly, concerns have been raised regarding the increased use of SNSs since the

late 1990s, with an increasing number of reports of SNS addiction.<sup>18</sup> Given that Internet and SNS usage patterns in Oman conform to global trends,<sup>6</sup> there is reason to suspect that SNS addiction patterns in this country may be similar to those reported worldwide.

Measuring SNS addiction levels is an area of some debate. Some researchers believe that only levels of generalised SNS addiction should be assessed.<sup>19,20</sup> However, others have taken a more focused view; Çam *et al.* chose to adapt and use an Internet addiction scale developed by the Center for Internet Addiction to measure Facebook addiction, while the Facebook Addiction Symptoms Scale has also been implemented among a group of undergraduate students.<sup>14,21</sup> More recently, Andreassen *et al.* developed a shorter six-item Facebook addiction questionnaire known as the Bergen Facebook Addiction Scale (BFAS), the validity and reliability of which was subsequently established.<sup>22,23</sup> The BFAS has been successfully used to measure Facebook addiction rates in numerous studies and has been acknowledged as psychometrically effective.<sup>18,20,24–26</sup> Although initially designed to assess addiction to only one SNS, Andreassen *et al.* have noted that adjusting the scale to assess another SNS is feasible.<sup>23</sup>

Addiction can be disruptive to many aspects of life; for students, it may hinder their studies and impact their long-term career goals. Excessive use of and addiction to Internet activities—including SNSs and online games—has been negatively associated with conscientiousness, honesty/humility and agreeableness and positively associated with neuroticism, narcissism and aggression.<sup>22,27–35</sup> For medical students aiming to develop into caring health professionals, the implications of this addiction can have wide and detrimental consequences for society as a whole. It is important, therefore, to know the scale of the problem so that appropriate measures can be taken to combat it.

Given the concerns outlined above, this study aimed to measure rates of SNS addiction among a group of health sciences students at Sultan Qaboos University (SQU) in Muscat, Oman. Furthermore, this study aimed to distinguish between three main SNSs (Facebook, YouTube and Twitter) rather than measuring general SNS addiction only, as interventions to rectify addiction-related problems may differ depending on the specific SNS.

## Methods

This study involved a non-random cohort of 141 medical and laboratory science students enrolled at the College of Medicine & Health Sciences at SQU in

**Table 1:** Self-reported use of selected social networking sites during the previous year among a cohort of health sciences students in Oman (N = 81)

	n (%)		
	Facebook*	YouTube <sup>†</sup>	Twitter <sup>‡</sup>
Females	47 (92.2)	51 (100.0)	36 (70.6)
Males	27 (90.0)	30 (100.0)	21 (70.0)
Total	74 (91.4)	81 (100.0)	57 (70.4)

\*Facebook Inc., Menlo Park, California, USA. <sup>†</sup>YouTube, San Bruno, California, USA. <sup>‡</sup>Twitter Inc., San Francisco, California, USA.

April 2014 and taking part in the Medical Informatics II course. This group of students was chosen because they had not yet studied SNSs in detail but still had some introductory knowledge as a result of their completion of the Medical Informatics I course.

An anonymous English-language six-item electronic self-reporting survey was designed, based on the BFAS and modified for other SNSs as suggested by Andreassen *et al.*<sup>22,23</sup> The three SNSs chosen for the questionnaire were Facebook, Twitter and YouTube, as these were the most heavily used SNSs worldwide at the time.<sup>3-5</sup> Students were asked to report their SNS usage data for the past year. Although it can be argued that SNSs are used primarily for non-work-related activities, research has indicated that social media sites are used in medical and other education programmes.<sup>36,37</sup> As a result, the survey was modified in order to determine the percentage of time students reported spending on SNSs in the work context.

Although English was not the native language of all of the students in the cohort, the language of instruction of the Medical Informatics II course was English; students taking the course were therefore considered to be sufficiently familiar with the language to understand the questionnaire. Furthermore, a Flesch Reading Ease and Flesch-Kincaid Grade Level test indicated that the survey could be understood by school-level students.<sup>38</sup> Students were informed of the online survey in April 2014 while in class, with two further e-mail reminders sent requesting their participation. The survey remained open for four weeks to give students enough time to complete it.

After collating the survey data, rates of addiction were calculated according to two sets of criteria. The first, proposed by Lemmens *et al.*, considers a score of 3 on at least four of the BFAS survey items to constitute addiction.<sup>16</sup> However, criteria proposed by Andreassen *et al.* requires a score of 3 on all six of the BFAS items before an individual can be classified as addicted.<sup>22</sup> When these initial addiction rates had been calculated, rates of addiction were then recalculated with regards to work-related SNS usage. Participants

**Table 2:** Self-reported work-related use of selected social networking sites during the previous year among a cohort of health sciences students in Oman (N = 81)

Frequency of work-related activity, %	n (%)		
	Facebook* (n = 63)	YouTube <sup>†</sup> (n = 72)	Twitter <sup>‡</sup> (n = 39)
0-20	29 (46.0)	17 (23.6)	28 (71.8)
21-40	8 (12.7)	19 (26.4)	6 (15.4)
41-60	6 (9.5)	20 (27.8)	3 (7.7)
61-80	11 (17.5)	14 (19.4)	0 (0.0)
81-100	9 (14.3)	2 (2.8)	2 (5.1)
Mean	39.4	41.9	14.3

\*Facebook Inc., Menlo Park, California, USA. <sup>†</sup>YouTube, San Bruno, California, USA. <sup>‡</sup>Twitter Inc., San Francisco, California, USA.

spending >50% of their SNS usage time for work-related activities were excluded from the addicted group.

Data were entered into a Microsoft Excel spreadsheet (Version 2010, Microsoft Corp., Redmond, Washington, USA) and descriptive statistical analyses and Chi-squared calculations were performed. Qualitative data were themed using NVivo, Version 7 (QSR International Ltd., Burlington, Massachusetts, USA).

Ethical approval for this study was granted by the Medical Research & Ethics Committee at the College of Medicine & Health Sciences at SQU (MREC#869). All of the respondents gave written consent before taking part in the study.

## Results

Of the 141 students included in the study, a total of 81 completed the survey (response rate: 57.4%). Of these, 51 were female (63.0%); this gender ratio had no statistical significance to the rest of the class ( $P = 0.41$ ). Use of the three SNS sites by the participants over the previous year is summarised in Table 1. YouTube was most commonly used (100%), followed by Facebook (91.4%) and Twitter (70.4%). There was no statistically significant difference between female and male SNS usage ( $P = 0.997$ ).

The frequency of work-related SNS use among the sample is summarised in Table 2. While less than 15% of Twitter activity was work-related, this was not the case for Facebook and YouTube (less than 39.4% and 41.9%, respectively). YouTube was more frequently used by students for work purposes than the other social media sites (mean: 41.9%). Usage patterns are shown in Table 3. Dependency on YouTube was

**Table 3:** Self-reported usage patterns\* of selected social networking sites during the previous year among a cohort of health sciences students in Oman (N = 81)

Activity	n (%)																	
	Facebook <sup>†</sup> (n = 74)					$\bar{x}$	YouTube <sup>‡</sup> (n = 80)					$\bar{x}$	Twitter <sup>§</sup> (n = 57)					$\bar{x}$
	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	
Spent a lot of time thinking about SNS or planned to use SNS	34 (45.9)	20 (27.0)	15 (23.0)	4 (5.4)	1 (1.4)	1.9	20 (25.0)	21 (26.3)	27 (33.8)	10 (12.5)	2 (2.5)	2.4	20 (35.1)	17 (29.8)	10 (17.5)	10 (17.5)	0 (0.0)	2.2
Felt an urge to use SNS more and more	21 (28.4)	23 (31.1)	22 (29.7)	8 (10.8)	0 (0.0)	2.2	11 (13.8)	14 (17.5)	34 (42.5)	15 (18.8)	6 (7.5)	2.9	20 (35.1)	13 (22.8)	14 (24.6)	7 (12.3)	3 (5.3)	2.3
Used SNS in order to forget about personal problems	40 (54.1)	14 (18.9)	14 (18.0)	4 (5.4)	2 (2.7)	1.8	13 (16.3)	14 (17.5)	35 (43.8)	13 (16.3)	5 (6.3)	2.8	22 (38.6)	14 (24.6)	15 (26.3)	4 (7.0)	2 (3.5)	2.1
Tried to cut down on the use of SNS without success	28 (37.8)	23 (31.1)	16 (21.6)	4 (5.4)	3 (4.1)	2.1	29 (36.3)	21 (26.3)	18 (22.5)	8 (10.0)	4 (5.0)	2.2	24 (42.1)	19 (33.3)	10 (17.5)	4 (7.0)	0	1.9
Become restless or troubled if prohibited from using SNS	36 (48.6)	16 (21.6)	17 (23.0)	3 (4.1)	2 (2.7)	1.9	20 (25.0)	24 (30.0)	22 (27.5)	9 (11.3)	5 (6.3)	2.4	28 (49.1)	15 (26.3)	11 (19.3)	2 (3.5)	1 (1.8)	1.8
Used SNS so much that it had a negative impact on academic work	37 (50.0)	23 (31.1)	5 (6.8)	6 (8.1)	3 (4.1)	1.9	26 (32.5)	23 (28.8)	22 (27.5)	7 (8.8)	2 (2.5)	2.2	24 (42.1)	18 (31.6)	11 (19.3)	4 (7.0)	0 (0.0)	1.9
Mean	32.7 (44.1)	19.8 (26.8)	14.8 (20.0)	4.8 (6.5)	1.8 (2.5)		19.8 (24.8)	19.5 (24.4)	26.3 (32.9)	10.3 (12.9)	4.0 (5.0)		23.0 (40.4)	16.0 (28.1)	11.8 (20.8)	5.2 (9.1)	1.0 (1.8)	

SNS = social networking site. \*On a five-point Likert scale where 1 = very rarely and 5 = very often. <sup>†</sup>Facebook Inc., Menlo Park, California, USA. <sup>‡</sup>YouTube, San Bruno, California, USA. <sup>§</sup>Twitter Inc., San Francisco, California, USA.

**Table 4:** Addiction rates according to self-reported use of selected social networking sites during the previous year among a cohort of health sciences students in Oman (N = 81)

Addiction criteria	n (%)										
	Total			Singular				Combined			
	FB <sup>†</sup> (n = 63)*	YT <sup>‡</sup> (n = 72)*	Tw <sup>§</sup> (n = 39)*	FB only (n = 63)*	YT only (n = 72)*	Tw only (n = 39)*	FB + YT (n = 60)*	FB + Tw (n = 34)*	YT + Tw (n = 38)*	FB + YT + Tw (n = 33)*	
Lemmens <i>et al.</i> <sup>18</sup>	9 (14.2)	34 (47.2)	13 (33.3)	2 (3.2)	25 (34.7)	6 (15.4)	3 (5.0)	1 (2.9)	3 (7.9)	3 (9.1)	
Andreassen <i>et al.</i> <sup>22</sup>	4 (6.3)	10 (13.8)	5 (12.8)	2 (3.2)	6 (8.3)	3 (7.7)	2 (3.3)	0 (0.0)	2 (5.3)	0 (0.0)	

FB = Facebook; YT = YouTube; Tw = Twitter.

\*Number of students who indicated in the questionnaire the percentage of their time spent on the social networking site that was work-related.

<sup>†</sup>Facebook Inc., Menlo Park, California, USA. <sup>‡</sup>YouTube, San Bruno, California, USA. <sup>§</sup>Twitter Inc., San Francisco, California, USA.

**Table 5:** Addiction rates according to self-reported use of selected social networking sites during the previous year among a cohort of health sciences students in Oman who spent <50% of usage time on work-related activities

Addiction criteria	n (%)		
	Facebook* (n = 63)	YouTube <sup>†</sup> (n = 72)	Twitter <sup>‡</sup> (n = 39)
Lemmens <i>et al.</i> <sup>18</sup>	3 <sup>§</sup> (4.7)	20 <sup>¶</sup> (27.8)	8 <sup>  </sup> (20.5)
Andreassen <i>et al.</i> <sup>22</sup>	2 (3.2)	5 <sup>§</sup> (6.9)	3 <sup>  </sup> (7.7)

\*Facebook Inc., Menlo Park, California, USA. <sup>†</sup>You Tube, San Bruno, California, USA. <sup>‡</sup>Twitter Inc., San Francisco, California, USA. <sup>§</sup>In addition to this, three students did not indicate the amount of time spent on work-related activities. <sup>¶</sup>In addition to this, four students did not indicate the amount of time spent on work-related activities. <sup>||</sup>In addition to this, two students did not indicate the amount of time spent on work-related activities.

greater than for the other two sites. This was apparent from the means for each of the categories, which were higher for YouTube than the other social media sites in every instance. There were too few qualitative comments from the students for reasonable themes and patterns to be extracted.

Addiction rates were calculated based on criteria by Lemmens *et al.* and Andreassen *et al.* [Table 4].<sup>16,22</sup> With regards to Lemmens *et al.*'s criteria, it was found that 14.2%, 47.2% and 33.3% of the students were addicted to Facebook, YouTube and Twitter, respectively.<sup>16</sup> In comparison, only 6.3%, 13.8% and 12.8% of the students, respectively, were addicted to these same SNSs when Andreassen *et al.*'s criteria were used to indicate addiction.<sup>22</sup> These rates decreased when students who reported spending more than 50% of their time using SNSs for work-related purposes were excluded [Table 5]. Only 4.7%, 27.8% and 20.5% of students were still considered to be addicted to Facebook, YouTube and Twitter, respectively, according to the criteria proposed by Lemmens *et al.*<sup>16</sup> With Andreassen *et al.*'s criteria, rates of addiction dropped to 3.2%, 6.9% and 7.7% for Facebook, YouTube and Twitter, respectively.<sup>22</sup> This showed an important drop in addiction rates when work-related SNS activities were taken into account, with a 41.2% reduction (34 versus 20 students) in those classified as addicted to YouTube according to Lemmens *et al.*'s criteria and a 80% reduction (10 versus two students) according to Andreassen *et al.*'s criteria.<sup>16,22</sup>

## Discussion

This study attempted to measure addiction rates to three SNSs (Facebook, YouTube and Twitter) among a group of health sciences students in Oman. In addition, the study acknowledged that students might use these sites for work-related purposes and took this

into account when calculating addiction rates.

One issue raised in the literature is whether addiction rates should be measured to SNSs in general, or whether a more focused breakdown of addiction to specific SNSs is warranted.<sup>19,22,23</sup> Results from the current study indicated a wide range of usage across the three selected SNSs, with all students using YouTube, but not Facebook or Twitter. Immediately, this result serves to warn against grouping all SNSs together; if this were the case, it would appear that the entire cohort used an SNS, which would be misleading given the wide range of usage and purposes served by these SNSs. In addition, figures regarding addiction and work-related activities varied across the SNSs, supporting the contention that SNSs should be examined individually. As SNSs inevitably evolve and the popularity of a particular site waxes and wanes over time, individual examination of SNSs will become even more important.

Previous research has demonstrated the importance of the Internet in general to the work-related activities of health professionals.<sup>39,40</sup> Similarly, professional usage of mobile applications and SNSs by students and qualified health professionals is well-established.<sup>36,41–44</sup> It is for this reason that usage rates must be seen in light of students' use of SNSs for work-related activities. In terms of the current study, generalisations about work-related SNS usage were difficult—not only was Twitter used less than the other two SNSs, it was also used far less for work-related activities than the other sites. The same difficulty applies in determining general and non-work-related addiction rates. Nonetheless, rates of general addiction observed in this study were similar to those determined in other studies.<sup>17,24,25</sup> Importantly, however, addiction rates were much lower when the results were adjusted to exclude work-related social media activity. Unfortunately, only one of the comparative studies mentioned above considered work-related activities when calculating addiction rates, so further comparisons were not possible.<sup>25</sup>

Interpretations of SNS usage and addiction may be a pessimistic indictment of the way in which students are viewed by the rest of society. Abnormal dependence on social media for personal activities is generally considered an addiction, while the same dependence on social media for work-related activities may instead be considered to denote an admirable work ethic. As such, future studies on this topic might consider the pressures placed on students. These pressures are of such magnitude that their time and dedication spent on these activities could be considered an addiction, were it not for the fact that their academic performance is so highly valued. From the results of the current

study, it could easily be argued that several of the students were addicted, not to SNSs, but to their studies; SNSs were merely one of the means to feed their addiction to high academic performance.

Nevertheless, as far as SNS addiction can be discussed, data from the present study indicate that this sample of health sciences students in Oman appeared inappropriately dependent on SNSs. This is especially disquieting considering that the majority of these students will graduate and become health professionals in the near future. Given the association between Internet or SNS addiction and certain personality traits, it is possible that there will be an impact on patient care.<sup>22,27–35</sup> Indeed, studies have shown that these same personality traits impact directly on work performance;<sup>45,46</sup> in health-related fields, this will have affect the quality of patient care. Therefore, it would be beneficial for future research to focus on the possibility of a direct link between these addictions and negative repercussions on patient care. Additionally, these studies should also consider measures to reduce the potential consequences that this may have on the delivery of healthcare in Oman.

Apart from the standard limitations of a self-reported survey, it is important to note that this study was conducted with a single class of students at a single institution. As a result, generalisations are difficult, although the comparisons made with other studies conducted under similar circumstances remain valid. This study chose to investigate only three of the hundreds of existing SNSs. In addition, there is currently debate regarding whether YouTube should be considered an SNS, as some sites—including Reddit (Reddit Inc., San Francisco, California, USA), Snapchat (Snapchat, Venice, California, USA), Wikipedia (Wikipedia, San Francisco, California, USA) and WhatsApp (WhatsApp Inc., Mountain View, California, USA)—may not easily fit a narrow definition of an SNS and yet are still frequently included in this category.<sup>47</sup> Future studies should take this into account. Finally, although administrative data indicated high homogeneity among the cohort with respect to age (all students were between the ages of 20–25 years old), it would have been useful to confirm this information for further analysis. This should be corrected in future studies.

## Conclusion

Overall addiction rates among this group of health sciences students in Oman were found to be similar to rates reported in other studies. The implications of this finding need to be addressed in terms of future healthcare delivery in Oman. The variety of usage rates

observed strongly indicates that SNSs should not be combined into one group, but rather be examined individually. Furthermore, addiction rates decreased notably when work-related activity was taken into account which demonstrates that rates need to be adjusted according to purpose. These two key points should be considered when conducting similar studies.

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## CONFLICT OF INTEREST

The author declares no conflicts of interest.

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