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DISCOVERY
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Evaluating social media addiction and self-medicating behavior in adults in Saudi Arabia: A pilot study

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ABSTRACT

Objectives: This study sought to study how social media addiction and self-medicating behavior are related in adults in Saudi Arabia. *Materials and methods:* We utilized an online self-administered survey using multiple-choice questions, free-text comments, and a five-point Likert scale to evaluate self-medication behavior. We used the validated [Social Media Addiction Scale (SMAS)] to evaluate social media addiction. Survey participation spanned from July 2021 to December 2021. *Results:* 692 participants responded to the online survey. Approximately 71.5% (n=495) of participants reported no self-medication practices. Vitamins were the most used among self-medicating participants (10.5%) followed by analgesics (8.5%). The SMAS scale mean was 41.7±8.76 indicating a moderate tendency to social media addiction with no difference between males and females. Social media addiction showed a weak but statistically significant correlation to self-medication r(692)= 0.036 *p*=0.035. Social media addiction was weakly and adversely correlated to age in a statistical significance correlation r(692)= -0.116 *p*=0.002. *Conclusions:* Saudi adults demonstrated moderate inclination towards social media addiction with positive correlation of social media addiction to self-medication and invers correlation to age.

Keywords: Self-medication, addiction, social media, social networking, smartphone addiction

1. INTRODUCTION

Self-medication is a worldwide phenomenon, defined as using drugs, including [Over the Counter (OTC)] medications, traditional home remedies, and supplements without the guidance of a physician to treat self-recognized health complaints or diseases (Helal et al., 2017; Rahmawati et al., 2017). Self-medication is not necessarily considered a negative behavior as it significantly enhances to self-care, emphasizing the role of the individual in their health. When practiced correctly, self-medication can reduce the load on medical services and the waiting time to seek medical care and reduce healthcare costs. In the United States, self-medication inputs an excess of 102 billion US

dollars into the US healthcare system each year (Helal et al., 2017; Rahmawati et al., 2017; Mortazavi et al., 2017; Noone et al., 2018).

On the contrary, self-medication can lead to inappropriate drug utilization, drug-related problems, delayed seeking of medical care, and an increase in pathogen resistance. Self-medication may also lead to misdiagnosis of diseases, inappropriate medication doses, and inappropriate duration of treatment diseases (Helal et al., 2017; Rahmawati et al., 2017). Utilization of WhatsApp®, Twitter®, Instagram®, and Facebook® has increased over the years (Algarni & Aljohani, 2021). Social media use analysis reported an average increase of about 10% every year in the number of users across major social media platforms. The level of user attachment to social media (evidenced by the growing number of users every year) hints toward the addictive nature of social media. This has prompted researchers to examine the social impact of this phenomenon (Casale et al., 2017; Andreassen et al., 2018). The relationship between social media and many risky behaviors such as Anxiety, depressive symptoms, narcissism, and poor quality of sleep has also been widely reported in the literature (Casale et al., 2017; Jeri-Yabar et al., 2019). The 14-item [Social Media Addiction Scale (SMAS)] has a maximum score of 70 (highest addiction potential) and a minimum score of 14 (lowest addiction potential). SMAS is a customized and validated tool to measure social media addiction. The next section discusses the participants and instruments used in this study.

2. MATERIALS AND METHODS

Study Design and Setting

The cross-sectional survey was designed using Google forms survey platform and administered in Arabic. We sent an invitation in July 2021 to take part in the study to 2,000 individuals across Saudi Arabia through various social media outlets (Twitter®, WhatsApp®, Telegram®) and collected data until December 2021. The inclusion criteria include Saudi adults 18 years of old or older.692 participants fit the inclusion criteria and were analyzed in this study.

Instruments

We developed a survey to evaluate Saudi adults' self-medication behavior, which included multiple-choice questions, free-text comments, and five-point Likert scales. The survey consisted of 30 questions, divided into three main sections: (1) Participants' demography, (2) Use of social media, (3) SMAS.

Data Analysis

Descriptive statistics were utilized to summarize general self-medication and social media addiction trends. An alpha error of 0.05 or less was deemed statistically significant. Data entry and analysis were performed utilizing the IBM SPSS® version 26 software.

3. RESULTS

From 2,000 invitations sent, 692 responses fit the inclusion criteria and were analyzed in this study. Approximately 69% (n=477) of participants were females and the mean age of participants is 23 years. Detailed participants' demographics are shown in (Table 1).

Table 1 Demographics of study participants

Characteristics	N (%)
Age (year), mean±SD	23.14±8.7
Gender Female Male	 477 (69%) 215 (31%)
Educational level Intermediate Secondary Diploma Bachelor and above	 34 (5%) 277 (40%) 381 (55%)

Medical History	
None	554 (80%)
Diabetes Mellitus	14 (2%)
Heart Disease	13 (1.9%)
Lung Disease	42 (6.1%)
Kidney Disease	2 (0.3%)
Other	67 (9.7%)
Prescription medication use	
Yes	517 (74.7%)
No	175 (25.3%)

Approximately 97.8% (n=677) of participants visit social media sites daily and 2.2% (n=15) visit on most days of the week. Furthermore, 74.7% (n=517) reported frequently using Twitter®, 16.9% (n=117) use Snapchat®, 5.3% (n=37) use WhatsApp®, 0.4% (n=3) use Facebook® and 2.6% (n=18) use other platforms. For device use preference to surf social media sites, 97.5% (n=675) of participants prefer smart phones and 1.6% (n=11) use computers. When asked whether precipitants pay attention to self-medication practice on social media, 59.5% (n=412) answered no, 33.1% (n=229) reported paying attention often and 7.4% (n=51) reported paying attention to self-medication practices on social media. Self-medication stories attracted 17.5% (n=121) of participants, while 50.7% (n=351) reported not attracted to personal stories, where 31.8% (n=220) get attracted often to stories on self-medication on social media. Around 16.3% (n=113) of participants reported that they would order supplements based on influence of social media and 83.7% (n=579) reported that social media does not persuade them to order supplements as shown on (Table 2).

Table 2 Frequency & characteristics of social media use of study participants

Variable	Category	N (%)
Access to social media	Daily	677 (97.8%)
	Most days of the week	15 (2.2%)
Preferred surfing device	Smart Phone	675 (97.5%)
	Computer	11 (1.6%)
	Others	6 (0.9%)
Favorite social media platform	Twitter®	517 (74.7%)
	Snapchat®	117 (16.9%)
	Facebook®	3 (0.4%)
	WhatsApp®	37 (5.3%)
	Other	18 (2.6%)
Attention to self-medication practices on social media	Yes	51 (7.4%)
	No	412 (59.5%)
	Often	229 (33.1%)
Attracted to personal stories of self-medication practices on social media	Yes	121 (17.5%)
	No	351 (50.7%)
	Often	220 (31.8%)
Would order supplements based on influence of social media	Yes	113 (16.3%)
	No	579 (83.7%)

When asked about self-medicating, 71.5% (n=495) of participants reported no self-medicating. For the most used medications and supplements, 10.5% (n=73) self-medicate with vitamins, 8.5% (n=59) use analgesics, 3.9% (n=27) use food supplements, 1% only (n=7) use antibiotics and 4.5% (n=31) use other agents as indicated in (Figure 1).
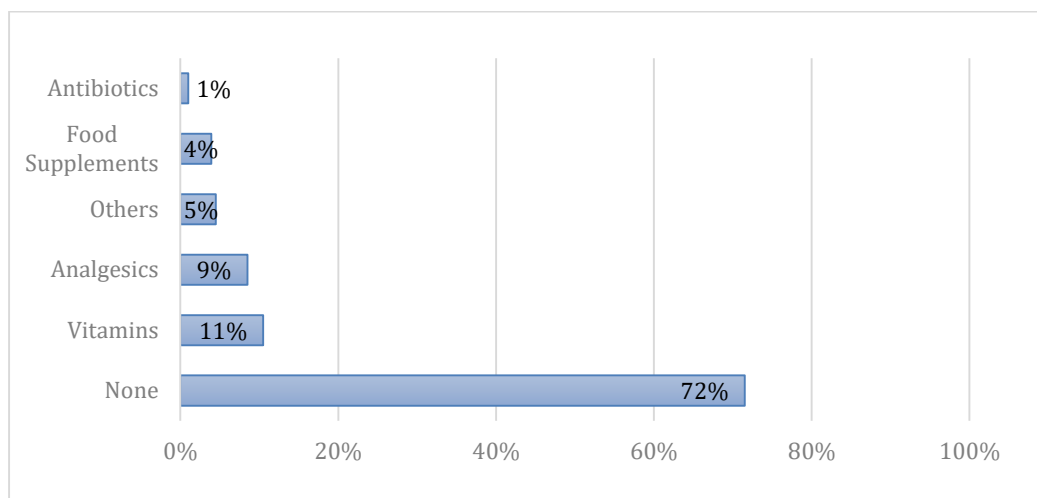
Figure 1 Common agents used in self-medication

As for reasons for self-medication practices, 72.8% (n=504) reported no specific reason, 6.1% (n=42) self-medicate for headache, 4.6% (n=32) self-medicate for vitamin deficiency, 4.5% (n=31) self-medicate for other reasons, 3% (n=21) self-medicate for hair and skin health, 2.9% (n=20) self-medicate for pain control, 1.9% (n=13) self-medicate for immune support, 1.2% (n=8) self-medicate for either anemia or abdominal pain, 0.9% (n=6) for sleep, 0.7% (n=5) for teeth pain, 0.3% (n=2) for menstrual pain. As for side effects experienced because of self-medication, 96% (n=646) reported no side effects. Frequency of side effects and reported use of medications are shown in (Figure 2).
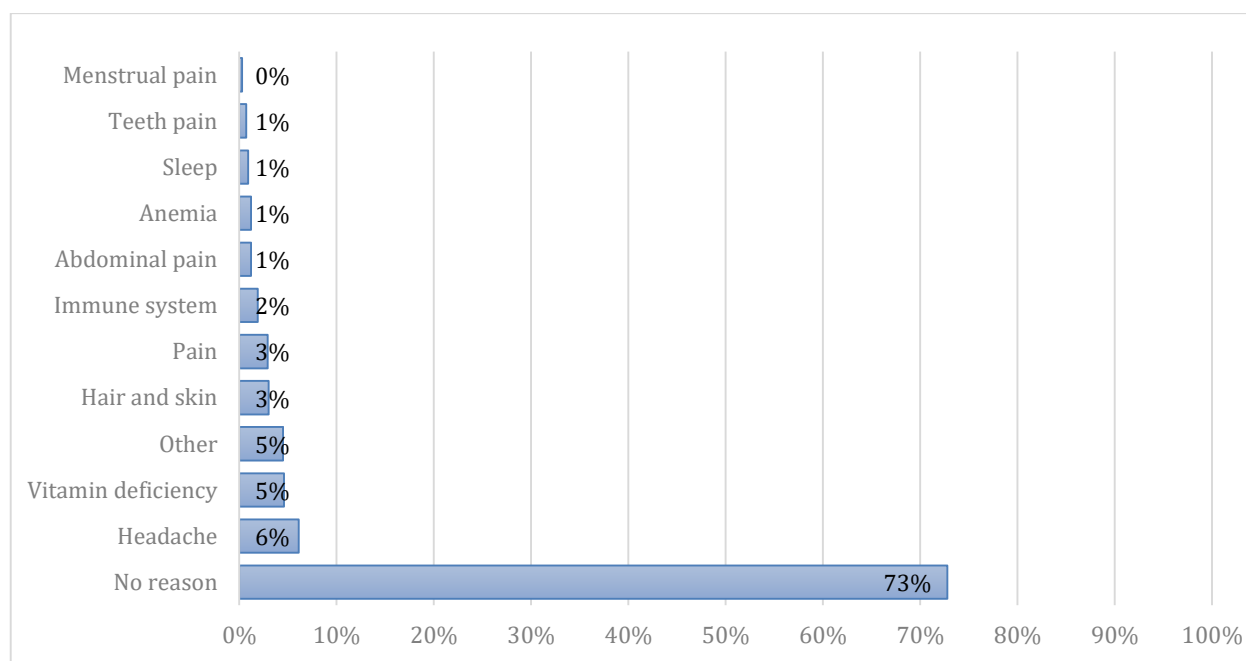
SMAS results for social media addiction showed a mean of 41.7±8.76 indicative of moderate social media addiction tendency. The correlation of SMAS results for social media addiction to self-medication tendency shows a weak statistically significant correlation r(692)= 0.036 *p*=0.035. Furthermore, Social media addiction was weakly and adversely correlated to age in a statistical significance correlation r(692)= -0.116 *p*=0.002.

4. DISCUSSION

Young's Internet Addiction Measure (IAT) is a scale used prominently in the assessment of internet use and addiction studies (Young, 2009). The IAT scale has been examined by many investigators. A factor analysis of the IAT was performed by (Widyanto

et al., 2004). They suggested that IAT is a valid and reliable instrument to assess internet addiction despite their comparatively small sample of 86 consisting of 29 males and 57 females between the ages of 13 and 67. Another study by (Jelenchick et al., 2012) also concluded that IAT is a valid tool to assess addiction to social media among learners. A validation study of the IAT scale in the Arabic language included 817 individuals intermediate and secondary school students across Lebanon and concluded that the IAT in Arabic is a valid tool to measure internet addiction among youngsters (Hawi, 2013).

SMAS, as an extension of IAT, is customized to measure social media addiction, rather than the internet. In 2015, a study of the SMAS in its Arabic language format with results from a sample of 1,327 undergraduate students between the ages of 18 and 25 showed that it is a true and accurate method for measuring addiction to social media in the Arab world (Al-Menayes, 2015). The prevalence of self-medication among Saudi adults was quite low. Our study contradicts the findings of (Albatti et al., 2017; Al Essa et al., 2019). They reported the prevalence of self-medicating among adolescents as 94.5% with hormones being the most common agent used in self-medication. This might be due to the different populations in question. With social media, the participants demonstrated a high inclination to addiction, the mean of social media addiction was 41.7±8.76. This is partly in line with Hoffman's findings of 96% reporting their social media use (Albatti et al., 2017; Al Essa et al., 2019). Although reports from studied individuals show that social media carries low implication on self-medication practices, we still noted a weak positive and statistically significant correlation of social media and self-medication. Furthermore, the inverse correlation of age to social media addiction is expected.

The mean age of our participants was relatively young, 23.14±8.7 year. This might be the reason behind low reports of self-medication practices as this age group would understandably have fewer medical complaints requiring self-medicating. We would expect self-medicating practices reporting to increase as the mean age of participant's increases.

5. CONCLUSION

Social media addiction tendency is moderate among Saudi adults. Social media addiction correlates positively to self-medication and inversely to age. Our study participants were relatively young with few medical complaints that could affect self-medication practices self-reporting. Further research is needed to collect more insight into other variables and their correlation to social media addiction and self-medicating behavior.

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