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A comparative study of national, gender, and academic differences in smartphone addiction among students from Jordan, Saudi Arabia, Oman, and the UAE

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ABSTRACT

This study presents a cross-cultural comparison of smartphone addiction among university students in four Arab countries: the United Arab Emirates, Saudi Arabia, Jordan, and Oman. It extends previous work by examining differences in addiction levels based on nationality, gender, and academic discipline. Data were collected from 513 students using the Smartphone Addiction Scale. Results confirm previously observed trends and reveal significant differences across the four countries, with Jordanian students reporting the highest levels of smartphone use, followed by Saudi Arabia, the UAE, and Oman. The findings underscore the importance of cultural and demographic factors in understanding smartphone addiction and suggest the need for context-specific strategies to address this growing issue.

1. Introduction

As a medium of communication, access to information, and entertainment on a global scale, smartphones have developed into a highly valued and essential technological device. The ease, accessibility, and extensive functionality of cell phones have revolutionized our interactions with one another and the world at large. But we mustn't ignore the widespread problem of this resource's overuse and abuse; it can lead to addiction and other problems (Vaterlaus et al., 2021). Despite the lack of research in this area, the consequences of smartphone addiction are far-reaching and should not be disregarded or undervalued. People often view excessive smartphone use as harmful to their physical health, mental health, and productivity, as the term "addiction" is generally associated with negative outcomes (Moqbel et al., 2023). Isolation, decreased fitness and physical activity, diminished cognitive function, and mental health problems are some of the negative outcomes that can result from an individual's usage and dependence on cell phones. Additionally, having social media, games, and other entertainment options available on smartphones might contribute to addictive behaviors by satisfying a compulsive demand for constant stimulation and reward (Yu and Sussman, 2020). The ability to easily connect with others, access endless information, and engage in immersive digital experiences can be both enticing and habit-forming. However, it is important to note that smartphone addiction does not exist in isolation but rather within a wider contextual framework shaped by various factors. Factors such as national, gender, and academic diversity can significantly influence the prevalence and consequences of smartphone addiction (Jin Jeong et al., 2020). Different cultures, societal norms, and individual characteristics contribute to shaping the relationships individuals have with their smartphones. Consequently, the influence of national, gender, and academic diversity on smartphone addiction manifests both positive and negative consequences (Beirat et al., 2025).

Cultural values and societal expectations play a pivotal role in the development of addiction, as certain cultures place a greater emphasis on the use of smartphones for social interactions and personal expression (Lin et al., 2021). Furthermore, gender disparities can influence smartphone addiction, as research indicates that women generally utilize cell phones predominantly for social interactions, whereas males are more likely to engage in gaming

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or other entertainment activities. Additionally, academic factors can also contribute to smartphone addiction, as high levels of stress and academic demands may lead some students to rely on their smartphones as a means of escape or distraction (Davey et al., 2020). The pressure to constantly multitask and stay connected can exacerbate the addictive tendencies associated with smartphone use. Negative effects on mental health, relationships, and general well-being can result when people struggle to put down their phones and focus on other parts of their lives (Oraison et al., 2020).

In conclusion, while smartphones have undoubtedly revolutionized the way we communicate, access information, and entertain ourselves, it is essential to acknowledge and address the potential risks associated with their misuse and addiction. By thoroughly exploring the contextual factors that contribute to smartphone addiction, we can develop comprehensive strategies and interventions to mitigate its negative consequences and promote healthier smartphone use. Moreover, conducting comparative research across diverse regions can shed light on the complex interplay between individual, societal, and technological factors in the development and management of smartphone addiction, leading to more targeted and effective interventions. Ultimately, fostering a better understanding of smartphone addiction and its underlying factors can empower individuals and communities to make informed decisions regarding their smartphone usage, leading to a healthier and more balanced relationship with this technology. This study aimed to conduct a cross-cultural study that contrasts students from four Arab countries: The United Arab Emirates, Saudi Arabia, Jordan, and Oman.

2. Literature review

Smartphone addiction is one of the earliest technology-related addiction problems and has remained an area of interest for researchers interested in this topic. Smartphones are dominant in individuals' lives, with features to use the internet, apps, games, texts, and calls (Popescu et al., 2022). Especially those aged between 18 and 24 are reported to be the most frequent users and abusers of smartphones. Media-related apps such as Instagram, Snapchat, and Facebook have a strong link with smartphone addiction because of interaction with others and checking news. This age appears especially vulnerable to the development of smartphone addiction due to factors like ease of portability, multifunctionality, connectivity, and attractiveness. Success and beauty are often linked to social media, which constantly tells you how you are being presented or perceived. Smartphone addiction affects many areas of life and people, such as work, family and friends, relationships, and the future.

Smartphones, with their compact size and user-friendly design, have completely transformed and revolutionized our lives in ways that were unimaginable before. These extraordinary devices offer an expansive array of functions and features that perfectly cater to our ever-evolving and expansive needs. From the basic ability to make phone calls and access the vast expanse of the internet, to capturing those cherished and irreplaceable moments through extraordinary photographs and high-definition videos, smartphones have effectively become a fundamental and indispensable tool that we simply cannot imagine living without. However, alongside this incredible convenience and the myriad of benefits, a growing concern has emerged as a pervasive issue of smartphone addiction. In our contemporary society, it has become increasingly rare to encounter individuals, regardless of their age or background, who are not heavily reliant and ceaselessly dependent on their smartphones (Yu and Sussman, 2020). The all-encompassing nature of these devices has engendered a plethora of symptoms closely associated with smartphone addiction, including debilitating withdrawal symptoms, an overwhelming and consuming loss of control, and a host of adverse consequences that negatively impact various facets of life (Pelea, 2023).

Therefore, it is imperative to develop strategies and interventions that promote a healthier balance between smartphone usage and other activities. By implementing measures such as setting boundaries, practicing mindfulness, and engaging in offline activities, individuals can regain control over their smartphone use and reduce the risk of addiction. Educational campaigns and awareness programs can also play a significant role in educating people about the potential risks of excessive smartphone use and promoting responsible and mindful usage (Alotaibi et al., 2022a; Aloufi et al., 2024). While geographical diversity has been explored and examined in certain countries, with a focus on the addictions experienced by diverse groups and their underlying disparities, there is still a need for a comparative study that encompasses the contexts of Jordan, Saudi Arabia, Oman, and the UAE (Rao et al., 2023; AlQaderi et al., 2023). These countries coexist within the same region, sharing similar cultural values and levels of internet and smartphone penetration. Understanding the unique dynamics of smartphone addiction in these countries could provide valuable insights into the role of cultural, social, and technological factors in shaping addictive behaviors.

Examining the impact of cultural values, social norms, and technological advancements on smartphone addiction in these countries can inform the development of targeted interventions and strategies to mitigate its negative effects (Bouazza et al., 2023; Hussein et al., 2024). By identifying the specific risk factors associated with smartphone addiction in each country, policymakers and healthcare professionals can tailor their approaches to address the distinct challenges faced by individuals in these regions (Friedrichs et al., 2022). This comparative research can also facilitate

knowledge sharing and collaboration between countries, allowing for the exchange of best practices and effective interventions.

Indeed, fathers across the globe have reported that their sons often experience pronounced feelings of anxiety, fluster, and nervousness when they are unceremoniously separated from their beloved phones (Nie et al., 2020). This phenomenon has sparked a myriad of concerns about the pervasive and profound impact of excessive smartphone usage on the younger generation. Recent studies have undertaken the monumental task of investigating the prevalence of smartphone usage across diverse regions and demographics (Olson et al., 2022; Tashtoush et al., 2023). These seminal studies have meticulously examined a myriad of factors, ranging from usage patterns and associated expenses to fragmented, sporadic time spent engrossed in the captivating world of smartphones. Notably, one of the crucial findings of these studies is that the younger generation is introduced to the vast online world in an intensive, immersive, and often liberating manner as soon as they receive their initial smartphone (Ncube and Koloba, 2020; Qasimi et al., 2024). This early and unfiltered exposure to the infinite possibilities of the digital universe has forged a unique bond between this generation and their smartphones, further exacerbating the issue of addiction. Interestingly, in the past, researchers often regarded smartphone addiction as a relatively rare phenomenon, confined to a select few individuals (Arturo and Ester, 2021).

Nonetheless, as societal norms, lifestyles, and technological advancements continue to evolve at a breathtaking pace, it has become abundantly clear that this modern affliction can insidiously affect individuals across diverse demographic groups, necessitating immediate and indispensable adjustments to their prevailing lifestyles (Csibi et al., 2021). Additionally, the multifaceted impact of smartphone usage is inherently influenced by an intricate web of factors that transcend mere individual circumstances, such as age, income level, associated costs, and time availability (Jamal and Habib, 2020).

It is worth noting that the term "addictive smartphone use" is often employed as a broad and encompassing phrase to encompass various forms of addiction related to smartphone usage, such as social networking site addiction and internet addiction, among others (James et al., 2023; Shirawia et al., 2024). However, the concept of "smartphone addiction" itself is frequently employed to describe a distinct and identifiable form of addiction. This addiction is empirically characterized by the compelling need for consistent smartphone usage, a profound sense of loss or emptiness experienced without a smartphone, feelings of profound loneliness resulting from defective relationships, and the automation of smartphone usage as a habitual behaviour (Yu and Sussman, 2020).

The term “addiction” is often used in the popular press with somewhat loose connotations. Indeed, non-addictive hobbies may easily turn into addictions (i.e., dependence) if the individual feels psychologically unhappy or lonely due to limited satisfaction in face-to-face communication (Chen, 2023; Harrathi et al., 2024). A normal range of involvement (i.e., heavy use and heavy reliance on social relationships) is not an addiction if the individual feels psychological comfort and stability in a real-world environment. The creation of new terminology is demanded for further emphasis to describe a positive involvement, such as a “high-committed relationship” during smartphone use. Alongside social networking site addiction, internet addiction and smartphone addiction are often shown to have comorbid relationships (Lee et al., 2020).

There are multiple factors contributing to smartphone addiction among individuals, and many of these factors are nation-specific. Many nation-specific research studies showed no consistency between different nation-specific factors on smartphone addiction (Li and Yang, 2024). Such specific factors include intensive study conditions for all academic disciplines, unlimited influence on students from a specific international region of specialization on smartphone manufacturers, and the high similarity of mood among young generations due to the existential crisis caused by the global pandemic (Achangwa et al., 2022). Consequently, both the choice of the academic cluster of the study program and the national specifics of factors contribute to regional consistency in the research studies, including contributing factors to smartphone addiction.

Researchers have extensively investigated smartphone addiction across different cultures and diverse populations, shedding light on its multifaceted and complex nature (Wanqing et al., 2022; Nawaz, 2024; Chen, 2023; Li and Yang, 2024). These thorough investigations have revealed a wealth of information regarding the risk of smartphone overuse, addiction, and negative outcomes associated with mobile phone use. It has become evident that these risks can vary greatly depending on various factors, including age, ethnicity, socioeconomic status, and geographical location (Wanqing et al., 2022; Nawaz, 2024). By taking these factors into account, researchers have been able to gain a deeper understanding of the phenomenon known as smartphone addiction, uncovering the intricate relationship between psychological health disorders and increased susceptibility to developing this addictive behavior. This ever-expanding knowledge continues to expand our understanding of the impact that smartphones have on individuals from all walks of life, inviting further exploration into this captivating field of study (Mourra et al., 2020).

For instance, diligent researchers from around the globe have dedicated extensive efforts to thoroughly explore and unravel the multifaceted concept of 'nomophobia,' which ingeniously refers to the intense and gripping fear of being without a personal mobile phone device or experiencing an

overwhelming sense of anxiety when unable to use one's cherished technological companion (Kara et al., 2021). There is an undeniable link between the high prevalence of nomophobia and the widespread use of mobile phones. Younger people exhibit this interesting trend the most, which is understandable given their natural preference for mobile communications and ongoing desire to stay connected. The undeniable ubiquity of smartphones as the most frequently utilized personal electronic devices across diverse age groups worldwide further supports this notion. New research has revealed many important insights that have helped us learn more about this complicated issue. These insights have helped us understand the many factors that play a part in the development of smartphone addiction, as well as the risks and negative effects that are bound to come with excessive and constant smartphone use across all age groups.

To gain deeper insights into the impact of nomophobia, additional surveys were conducted in various countries, taking into consideration factors such as age, gender, and educational disparities within nations. Recognizing that a student's background holds significant implications for their smartphone usage, researchers have also delved into key psychological resources that influence an individual's propensity for smartphone addiction (Ahmed et al., 2020). Factors such as resilience, hardiness, mindfulness, self-efficacy, school vision, cultural values, socio-emotional development, personality traits, and the role of technology in daily life have been thoroughly investigated to discern their association with smartphone addiction (Kim, 2021). Understanding these psychological strengths and vulnerabilities plays a crucial role in shaping an individual's relationship with their devices and in developing interventions for healthier smartphone usage habits (Girela-Serrano et al., 2024). Expanding on this work, more recent research has looked at how other factors like socioeconomic status, cultural norms, familial relationships, peer pressure, technology, and environmental factors affect a person's susceptibility to smartphone addiction, offering a more thorough understanding of the intricate dynamics at work (Kim, 2021). These results highlight the necessity for comprehensive strategies to address this rising social issue and highlight the complex nature of smartphone addiction.

Furthermore, both mental and physical health are affected by smartphone addiction. Musculoskeletal ailments, eye strain, sleep disruptions, and an increased risk of mental health disorders like anxiety, depression, and poor self-esteem are among the many health issues continuously linked to excessive usage (Alotaibi et al., 2022b). According to D'Addario et al. (2020), the risk of these health concerns is worsened since people become less active due to the sedentary nature of smartphone use. Finally, several serious and far-reaching effects have been shown by the growing dependence on cell phones. All aspects of one's life, including connections with family and friends, social circles, academic performance, health, and the ability to communicate with others, are negatively impacted. So, people need to understand the risks of using their phones too much and try to set healthier limits and practices so they can get their lives back in balance.

One of the primary focuses of these vital intervention programs should be on raising public awareness about the potential dangers and drawbacks associated with excessive and problematic smartphone use. By educating individuals about the risks and impacts of unrestrained smartphone dependency, society can ensure that individuals are fully cognizant of the consequences associated with their actions (Ratan et al., 2021). Additionally, providing crucial education and information on responsible and mindful smartphone usage will enable individuals to make informed decisions and take proactive measures to ensure that their relationship with technology remains well-balanced (Kang and Exworthy, 2022). In addition to awareness and coping strategies, another crucial aspect of intervention programs is to encourage and facilitate digital detoxification practices. This entails allowing individuals to take breaks from their smartphones and consciously disconnect from the online world, even if only for short periods. By promoting and incorporating digital detoxification into daily routines, individuals can gain perspective, reestablish real-world connections, and prioritize their mental and emotional well-being (Radtke et al., 2022).

By comprehensively addressing the intricate and multifaceted nature of smartphone addiction, society can actively work towards creating a harmonious and balanced relationship with technology that enhances overall well-being and facilitates meaningful connections. It is only by recognizing and understanding the potential pitfalls and challenges posed by excessive smartphone use that individuals can take the necessary steps to harness the numerous benefits and advantages that smartphone technology has to offer, all while minimizing its detrimental effects on their overall quality of life (Sela et al., 2022; Rasheed and Tashtoush, 2023). The rapidly growing body of research in this field serves as a resounding testament to the urgency and significance of continued exploration and the development of evidence-based interventions to effectively tackle the myriad challenges that smartphone addiction poses in the modern era (Olasina and Kheswa, 2021).

By diligently striving to address this ever-evolving concern, researchers and professionals can work together to enhance public understanding, develop effective strategies, and implement comprehensive interventions that will assist individuals in navigating the complex landscape of smartphone addiction. Together, society can carve a path towards a future where the full potential of technology can be harnessed while ensuring that the well-being and happiness of individuals remain at the forefront.

3. Methodology

This research examined the prevalence of smartphone addiction among Arab university students across a range of nationalities, genders, and academic specialties. The construct validity and reliability of the Smartphone Addiction Scale were examined in Arabic and other languages once it was translated. The validity of the scale was satisfactorily shown by its dependability on the national, gender, and field of study levels. The study sample included 513 students: 433 males and 80 females. The sample was selected based on the convenience method. The sample was divided as follows: 139 pupils from Jordan, 118 from the Kingdom of Saudi Arabia, 89 from Oman, and 167 from the United Arab Emirates were part of the final sample. The data was gathered using the smartphone addiction scale. Software tools were used to analyze data to highlight the effect of smartphone addiction across various demographics.

The Smartphone Addiction Scale, developed by Albursan et al. (2022) and Aljomaa et al. (2016), was utilized in the most recent study. Eleven elements pertain to excessive smartphone usage, thirteen to technological considerations, twenty-five to psychological and social factors, seventeen to smartphone fixation, and fourteen to health considerations. A total of eighty items makes up the inventory. The study included three categories of smartphone use: under two hours, two to four hours, and above four hours.

Additionally, correlation coefficients were calculated between the scale's components and the whole scale. The range of these coefficients was 0.57 to 0.83. The scale dimensions have correlation values ranging from 0.48 to 0.83. There was statistical significance in every item. Scale reliability was proven using the test-retest procedure. A pilot sample (N = 50) was given the scale twice, separated by two weeks. Pearson correlation analysis. While the scale's dimension coefficients ranged from 0.83 to 0.89, the overall scale correlation coefficient was 0.90. Using Cronbach's alpha, the scale's internal consistency was also determined. Correlation coefficients for scale dimensions and the whole scale ranged from 0.812 to 0.883, according to these findings. Cronbach's alpha was used in this work to assess scale reliability. Reliability coefficients for the Jordan, Saudi Arabia, Oman, and United Arab Emirates samples were 0.812, 0.883, 0.845, and 0.853, respectively. The dependability coefficient was 0.89 overall.

In response to pertinent assertions, scores are assigned using a 5-point Likert scale, with 5 representing "always true of me" and 1 representing "never true of me." One may get a score as low as 80 and as high as 400. 70% or more of the responses on this test indicate addiction, which is the recognized limit for addiction. Scores higher than that indicate that the person is addicted to their smartphone. Therefore, 280 points (out of 400) is the cut-off mark used to distinguish between people who regularly use smartphones and those who are addicted to them. Initially, the scale was developed using Arabic, the native language of the four countries that have utilized it. The scale was given to the participants from the four nations by the study team during the first semester of the 2024–2025 school year. The participants received instructions on how to fill out the scale and the study's objectives. The researchers rated the completed scales and prepared the results for statistical analysis after receiving them.

4. Results

To differentiate between those who regularly used their smartphones and those who were addicted, a cut-off point of 70%, or 280 out of 400, was suggested. The results based on these criteria are shown in Table 1. As can be seen in Table 1, the country with the greatest incidence of smartphone addiction (SA) was Jordan, which had 63.0% of the population, followed by Saudi Arabia, which had 44.0%, the United Arab Emirates, which had 43.0%, and Oman, which had 40.0%. The total prevalence was 48.0% across all four nations under consideration.

The data shown in Table 2 makes it abundantly evident that a significant number of students use their smartphones for a period that exceeds four hours each day. These percentages were 85.0% for the Jordanian sample, 77.0% for the Saudi sample, 85.0% for the Oman sample, and 75.0% for the United Arab Emirates sample. 80.0% was the average for the whole sample that was taken.

Table 3 indicates significant disparities in SA among the following comparisons: (1) the Jordanian sample versus the other three samples, favoring the Jordanian sample; (2) the United Arab Emirates sample versus the Oman sample, favoring the United Arab Emirates sample; (3) the Saudi sample versus the United Arab Emirates sample, favoring the Saudi sample; and (4) the Saudi sample versus the Oman sample, favoring the Saudi sample. An independent sample t-test was utilized to investigate the gender disparities in SA that were present within each nation as well as between the four countries. Table 4 displays these findings.

Table 1: Prevalence of smartphone addiction

Country	Total number	No. of addicts	%
Jordan	139	87	0.63
Saudi Arabia	118	52	0.44
Oman	89	36	0.40
United Arab Emirates	167	71	0.43
Total	513	246	0.48

Table 4 clearly shows that male and female participants in the full SA sample differed statistically ($p = 0.000$). It appears that there were more female participants in SA because these differences favored them. The study found that in the Jordanian, Emirati, and Saudi groups, there were statistically significant differences ($\alpha < 0.05$) between male and female individuals. The results showed that these disparities favored the female participants more than the male participants. The

results showed that the Oman sample did not differ significantly across the genders.

After computing a two-way analysis of variance, the independent variables that were considered were gender and country. 6.530 was the F-value for the interaction, and the p-value was 0.000. The fact that this was the case suggested that there was a substantial relationship between culture (that is, state) and gender. It is clear from looking at Table 5 that students in the humanities demonstrate a higher level of evidence of SA than students in the scientific field.

5. Discussion

In a study involving samples from four Arabic nations, females exhibit greater levels of social anxiety than males; there are intercultural variations in the frequency of social anxiety; and students in the humanities demonstrate higher levels of addiction compared to those in the sciences. Numerous studies on student social media addiction from various countries have revealed comparable findings: females exhibit a higher propensity for addiction than males (Vaterlaus et al., 2021; Moqbel et al., 2023), the severity of the issue fluctuates across cultures (Jin Jeong et al., 2020), and science students demonstrate a lower likelihood of addiction (Lin et al., 2021). Extraversion has been demonstrated to predict addictive behavior (Davey et al., 2020), and females exhibit higher levels of extraversion than males across cultures (Oraison et al., 2020).

When comparing students in the humanities and sciences, it has been shown that the former are less conscientious and more neurotic and extraverted, all of which are linked to addictive behavior (Alotaibi et al., 2022a; Shirawia et al., 2023). We can only make educated guesses about the causes of countries' disparities with the knowledge we currently possess; further research is necessary in this area. Jordan's sample exhibits the highest rate of SA while being generally sex-balanced, so this cannot be the only explanation for why not all the samples are sex-balanced. The incidence of smartphone ownership varies by country, which could be one factor.

Table 2: Usage rates throughout the four countries

Country	Hours of use	Frequency	%
Jordan	Less than 2 hours	0	0.00
	From 2 to 4 hours	21	0.15
	More than 4 hours	118	0.85
Saudi Arabia	Less than 2 hours	2	0.02
	From 2 to 4 hours	25	0.21
	More than 4 hours	91	0.77
Oman	Less than 2 hours	1	0.01
	From 2 to 4 hours	12	0.14
	More than 4 hours	76	0.85
United Arab Emirates	Less than 2 hours	-	0.00
	From 2 to 4 hours	42	0.25
	More than 4 hours	125	0.75
All countries	Less than 2 hours	3	0.01
	From 2 to 4 hours	100	0.19
	More than 4 hours	410	0.80

As a result, countries like Jordan, Saudi Arabia, and the UAE may have a higher SA than others since their students are more likely to have access to mobile phones and stable internet. The cultural difference plays a significant role in the variation in smartphones.

Each country has its own context in the behavior of users. Studies have shown a positive correlation between SA and both general and specific personality traits that increase the likelihood of addiction. Therefore, differences in addiction susceptibility across countries could be another reason, and this could be impacted by things like different average personality profiles around the world (Popescu et al., 2022). According to this theory, smartphone use is higher in the south of Europe than in the north (Friedrichs et al., 2022), and some evidence suggests that the south may have less self-control than the north (Yu and Sussman, 2020).

Table 3: Variance analysis for SA by country

Variable	Variance source	Sum of squares	Degree of freedom	Mean squares	F-value	P-value	Effect size
Country	Between groups	294,402.27	3	98,134.09	39.33	0.000	0.17
	Within groups	317,525.40	509	623.822			
	Total	611,927.67	513				

Table 4: T-test results for gender disparities in SA

Variable	Gender	N	M	SD	T-value	P-value	Effect size
Jordan	Female	26	3.85	0.42	3.140	0.000	0.350
	Male	113	3.76	0.44			
Saudi Arabia	Female	17	3.82	0.41	3.080	0.000	0.320
	Male	101	3.72	0.46			
Oman	Female	14	3.78	0.46	1.020	0.057	-
	Male	75	3.76	0.48			
United Arab Emirates	Female	23	3.84	0.41	3.120	0.000	0.340
	Male	144	3.78	0.47			
All countries	Female	80	3.82	0.36	3.100	0.000	0.335
	Male	433	3.76	0.40			

N: Number of participants; M: Mean; SD: Standard deviation

Table 5: T-test values for disparities

Variable	Discipline in academia	N	M	SD	T-value	P-value	Effect size
Discipline in academia	Humanities	393	3.93	0.40	4.100	0.000	0.450
	Sciences	120	3.77	0.51			

Several academics have voiced their doubts about the increasing recognition of technological addictions. Differentiating between "internet addiction" and "gaming addiction" is "conceptually

significant," according to Nie et al. (2020), who also argued that the idea of "online gaming addiction" is controversial. Rather than being addicted to "the internet," Olson et al. (2022) highlighted that many people are addicted to internet-based applications, including gaming or messaging platforms. One could argue that, rather than being an addiction in and of itself, the internet just makes it easier for people to become addicted. Common "gratifications," like social connection, status-seeking, and reward-seeking, are responsible for 28% of the variation in "internet addiction," according to research (Ncube and Koloba, 2020). The present investigation takes note of the continuing debate over SA's conceptual validity in scholarly works. On the other hand, a lot of academics think it's true (Arturo and Ester, 2021); it gets a lot of media attention, thus adding to its record will help us understand what happened and why more clearly.

A further issue with ideas like internet addiction (and, by extension, smartphone addiction) is quantification. A multitude of individuals frequently utilize the internet and their smartphones due to the demands of their occupations. During their leisure time, individuals engage in shopping, reading, and various other practical or enjoyable activities online. Therefore, we must be unequivocal about the circumstances in which internet usage constitutes addiction. Nonetheless, it might be contended that such concerns are relevant to any form of addiction; however, this does not invalidate the significance of the term 'addiction,' which denotes a compulsive necessity for or utilization of anything. A distinction must be established about when an action qualifies as a 'compulsion,' which is evident in the utilized measuring scale.

6. Conclusion

The results of this study provide evidence of the prevalence of smartphone addiction by sex, culture, and academic field. Most samples who responded to the survey stated that a plethora of people regularly employ the internet and their smartphones according to the requirements of their professions. In their leisure time, folks participate in shopping, reading, and other practical or pleasurable online activities. The gender balance was higher in some samples than in others. The degree of smartphone usage and, by extension, the characteristics of smartphone addiction, are affected by the large economic gaps among the nations from which we obtained samples. Thus, to further understand SA in the Arab world, it would be useful to conduct a similar study but limited to Arab countries with strong economic similarities, like Kuwait. Because it relies on subjective self-evaluation, the used instrument is not ideal. Thus, it would be useful to do a follow-up study using a smartphone-free group of subjects or an instrument that is rated by their peers to get a more objective measure of addiction. In addition, we need more studies that consider smartphone accessibility to understand why there are international differences in South Africa. One possible reason could be modal personality variances, which could be tested through empirical means. Consequently, we must be explicit regarding the conditions under which internet usage qualifies as addiction. However, it might be argued that these concerns pertain to all forms of addiction; nonetheless, this does not diminish the importance of the term 'addiction,' which signifies a compulsive need for or use of something. The measurement scale used shows that there must be a distinction regarding when an activity qualifies as a "compulsion."

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Compliance with ethical standards

Ethical considerations

This study was approved by the Ethical Committee of the Deanship of Scientific Research at King Khalid University, Saudi Arabia (Approval Date: 20/02/2024; Reference No. RGP.2 / 110 /45). All procedures performed in this study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments. Informed consent was obtained from all individual participants included in the study. Participation was voluntary, and all data were collected anonymously and kept confidential.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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