

# The Role of Health Promotion Awareness Against Health Risks Caused by Digital Addiction

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## Abstract

**Background:** The concept of digital addiction has gained popularity in recent years. Calls for methods to tackle it are increasing, particularly among teens. While the validity of this phenomenon as a mental health diagnosable issue is still being debated, there is a requirement for preventative and intervention measures that urge people to have better control over their internet use.

**Aim of Study:** The main aim of this study was to assess the impact of health promotion activities on the health risks caused by digital addiction at the King Saud University campus in Saudi Arabia.

**Material and Methods:** A cross-sectional, questionnaire-based study was performed at King Saud University. A total of 516 persons participated.

**Results:** 516 persons completed the questionnaire; 64.9% were male, 35.1% were female, 42.4% were aged between 20-29 years old, and 40.5% had at least a diploma. The results showed that 84% stated that the University implements health programs about digital addiction, and 81% stated that they had benefited from attending this program. Moreover, 82% stated that the University conducted previous studies on digital addiction, 82% believed that the current tools used to measure digital addiction are reliable, and 85% believed that COVID-19 increased the prevalence of digital addiction. Also, 82% knew digital addiction is harmful, and 86% knew that increasing hours spent using smartphones or tablets harms body health. In addition, 83% stated that the University conducts health promotion activities to increase awareness of health risks caused by digital addiction. The results also showed that implemented health programs, conducted studies, tools to measure digital addiction, and health promotion activities all had a moderately positive effect on the impact of health promotion activities on awareness.

**Conclusion:** Prolonged usage of the internet and cellphones has resulted in rising digital addiction, which has severely influenced performance and health. The recommended health promotion initiatives helped raise awareness and decrease addictive digital usage. As a result, this study emphasizes difficulties that should be dealt with in future research.

**Key Words:** Digital addiction – Smartphone addiction – Health promotion – Health risks.

## Introduction

**DIGITAL** addiction has become a significant study subject in recent years. The worldwide frequency of digital addiction varies, ranging from 8.90% in Eastern nations to 4.60% in Western. There is currently no agreement on how to define digital addiction, including what phrase to describe it. Many conceptualizations are used to characterize digital addiction. Usage styles such as time spent on the smartphone or technological devices, excessive attachment to the device, DSM-V diagnosis, and classification for the behavioral disorder as preoccupation, affect regulation, and withdrawal, besides harmful outcomes because of the addictive relationships, are indicated to be major characteristics of digital addiction. According to research, digital addiction is linked to anxiety and sadness, poor sleep quality, difficulties with self-care, everyday tasks, and social connections [1-3].

Health is an important issue that is highlighted in different sources, including news reports. Over the past decade, the costs of healthcare have been increasing, and there have been calls by the government and other agencies to find ways that can be used to reduce the costs [4]. Some major health concerns resulting from modern lifestyles have led to many diseases, such as cardiovascular diseases and other chronic diseases. Lifestyle risk factors are directly linked to the high costs of medical care [5]. Within the United States, over 78% of teenagers between 12 and 17 years old have mobile phones, with 37% having smartphones, but in China, more than 60% of adolescents get a mobile phone [6].

As a result, there has been increased interest in research on health promotion activities to help

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enhance awareness and alleviate these health issues. The health promotion programs are designed to assist in preventing and reducing the negative effects of unhealthy lifestyles. If well designed, preliminary research has shown that health promotion programs influence the awareness, behaviors, and attitudes of the focus population, and in turn, a healthy population is maintained [7].

Digital addiction is one of the factors that have been identified in today's generation. A number of physical and emotional health problems can be linked to digital addiction among university students. Digital addiction, according to Peper & Harvey, is an impulse control disorder that will usually involve an individual being overly obsessive in using digital devices, digital platforms such as the internet, and other digital technologies. The health problems include insomnia, weight gain/loss, vision problems, body aches, and carpal tunnel syndrome. The emotional issues include anxiety, social isolation, mood swings, depression, and aggression. All of these negatively affect university students' academic productivity [8]. Using a smartphone to do these chores daily might lead to a new condition called smartphone addiction. Mobile phone addiction is a behavioral addiction that gives short-term pleasure and may lead to persistent conduct despite knowing the negative repercussions [9].

New health care services rise to address digital addiction after the World Health Organization recognizes gaming disorders. Assessing existing research to determine the characteristics of digital addiction prevention and mitigation studies is essential. Digital addiction is a new research field with few standardized methodologies and metrics; the results will help support future research and practice by filtering studies that lack evidence, classifying extant countermeasure methods, investigating digital addiction screening tools, and discussing future research limitations and opportunities [10].

Even though digital tools have played a key role in advancing education, such as distant learning, it is important not to overlook their negative impact. As a result, many learning institutions have developed health promotion activities to increase awareness of the health risks resulting from digital addiction. However, such health promotion activities vary in content and quality. As noted by Kuss et al., many successful and unsuccessful health promotion activities have been aimed at increasing awareness to motivate healthy behavior change. For learning institutions, investing in health promotion

activities to increase awareness of the risks of digital addiction is paramount to improving their academic performance. Research shows that social marketing is an essential and effective theory and tool for health promotion and social change programs [11,12].

However, there have been limited studies on their impact on raising awareness among university staff and students of the health risks of digital addiction. Also, there is a need for more information to determine how health promotion programs are used at learning institutions to create awareness and how they perform. It is therefore important to analyze health promotion activities' role in increasing awareness regarding health risks, which can help design more effective approaches.

This study will assess the role of the health promotion activities at the King Saud University (KSU) campus towards health risks caused by digital addiction. The universities have the resources and capability to use different activities to create awareness. Some activities include communicating to raise awareness, e.g., media, and health fairs, education to empower behavior change, e.g., through support groups, and making systematic changes through improved laws, rules, and regulations [13].

### **Patients and Methods**

The study used a descriptive research design. This type of research design seeks to get information to systematically describe a given situation, population, or phenomenon. It helps the researchers to answer the where, what, how and when, questions pertaining to a given research problem. In this case, the research information was obtained by use of an electronic survey whereby the surveys were sent to staff and students [14]. Each participant had to meet the criterion of a staff or student within KSU. The sample participants of the study were recruited for the research by being sent a participation request by telephone or email. A purposive sampling approach was used to collect the research participants. This is a deliberate choice of a given research participant based on their qualities [15]. This research seeks to employ the use of survey questionnaires that were sent to the participants through online platforms and through email. This approach was more convenient when the world is battling COVID-19 pandemic and is also cost-effective for the staff and students owing to the limited time available. The questionnaire was written using structured questions and a Likert Rating Scale which was designed based on the

digital addiction scale. A digital addiction scale is a five-point likert type scale that has five sub-dimensions, including emotional state, overuse, dependence, non-restraint, and inhibiting the flow of life [16].

This study was conducted at Riad City from September 2021 – December 2021.

For the questionnaire, the first section focused on the basic demographic information of the participants, including gender, education, and age. Various measures were adhered to ensure that the research instrument meets the validity and reliability requirements. Reliability is realized when the research tool is able to produce similar or nearly similar results every time it is employed in the research. Given that it is near impossible to achieve perfect measurement accuracy, this research focused on achieving a high-reliability coefficient. A homogenous subject selection and clear instructions and questions were applied to retain a good reliability coefficient [14].

The information regarding the health promotion activities and the students in the Department of Community Health Sciences at KSU was collected electronically from the department. The prepared questionnaires were sent to each participant in the research population through email. They were given two weeks to complete the questionnaires. However, a reminder was sent to each respondent by the end of the first week to increase the study response rate by reminding them to complete the questionnaire on time. A pre-pilot test and preliminary review of the survey research instrument were carried out with the help of the supervisor and unit coordinator to assess the quality of the used data collection methods [17].

The data collected using the survey questions were mainly in nominal form, and the data were then summarized using descriptive statistics and analyzed using the SPSS version 26. All the study participants were given a consent form explaining that the study complied with the University's strict requirements for confidential data [18]. In such a sensitive topic, it was expected that the participants have a reasonable expectation that the researcher would inform them of the nature of the research and have the freedom to choose whether to participate. Also, they are expected to not be coerced into participating in the study, and their participation would be voluntary [18]. Therefore, all participants of the study were made aware that they could withdraw from the research at any given time without any repercussions. Also, they were told

that their information and details would remain anonymous. The ethical approval also was obtained from the KSU Ethics Committee No. E-22-7146.

## Results

The result showed that the questionnaire had sent to 534, 96.6% responded, and 3.4% rejected to participate; 64.9% were male, 35.1% were female, 42.4% were from the age group of 20-29 years old, 35.9% were from the age group of 30-39 years old, 14.9% from the age group of 40-49 years old, 5% from the age group of 50-59 years old, and 1.7% from the age group of 60 years old or more. There were 88.6% Saudi and 11.4% non-Saudi; their educational level, 39.5% had Bachelor, 40.5% had a diploma, 15.9% had a master's, and 4.1% had a Ph.D., their income was 41.1% less than 5000 S. R, 31.2% From 5000-9000 S. R, and 27.7% 1000 S.R or more, there were 42.6% single, 57.4% married.

As shown in Table (2), Cronbach's Alpha is between 0.0.667 and 0.0.734, and 0.0.826 for the questionnaire as all, which means the tool of the study (questionnaire) has high reliability.

The results showed that the implementation of any health programs about digital addiction by King Saudi University was high by a relative weight of 79%. The majority of participants (84%) said the University implemented health programs about digital addiction; 68% attended these programs, and the agreement percentage about that the program they attended achieved its aim was 82%. The agreement percentage that they have gained benefits from attending this program was 81%, and the agreement percentage that the future programs at King Saudi University about digital addiction still need many reforms was 82%.

The results showed that there were studies conducted at the KSU campus about digital addiction awareness was high by relative weight 85%, where 82% of the participants said that KSU conducted previous studies on digital addiction, and 90% said that they looked forward to conducting a study on digital addiction. The agreement percentage that these studies were relevant to digital addiction among participants at the KSU was 83%, the agreement percentage that conducting ongoing studies on digital addiction at the KSU has a significant outcome in reducing digital addiction was 85%, the agreement percentage about that future studies at KSU about digital addiction still need many modifications was 83%.

The results showed the KSU measured digital addiction within the institution with reliable tools was high by a relative weight of 80%, where the majority of the participants 70% knew that the tools used by the KSU to measure digital addiction, and 78% said that the University uses references for evaluating the gained estimates after measuring the digital addiction among the students. Moreover, the agreement percentage about that the current tools used to measure the digital addiction are reliable was 82%, the agreement percentage about that the tools used to measure digital addiction still need to be improved was 84%, and the agreement percentage about that COVID-19 increased the prevalence of digital addiction was 85%.

The results showed that the health promotion activities used to increase awareness at KSU campus on health risks caused by digital addiction was high by relative weight 84%, where the majority of the participants (84%) known that what the term 'digital addiction' exactly means. The agreement percentage about that digital addiction is harmful was 82%, whereas the agreement percentage about that overuse of digital devices is out of their purpose was 83%. Also, the agreement percentage about that they have missed opportunities because of spending a lot of time with digital devices was 84%, and the agreement percentage about that increasing hours spent while using a smartphone or tablet harms your body's health was 86%.

The results showed that the impact of the health promotion activities on the awareness at KSU on health risks caused by digital addiction was high by relative weight 84%, where the majority of the participants (83%) said the university conducts health promotion activities on to increase the awareness on health risks caused by digital addiction. The agreement percentage that these health promotion activities increase your awareness was 83%, whereas the agreement percentage that the health promotion activities are useful for controlling digital addiction was 85%. Moreover, the agreement percentage about that the stakeholders must be involved in organizing these health promotion activities was 84%, and the agreement percentage about being asked to participate in these health promotion activities if they were asked was 85%.

The results showed that the implemented health programs about digital addiction by KSU were high, there were studies conducted in the institution about digital addiction awareness was high, the institution measure of digital addiction within the institution by reliable tools was high, the health promotion activities are used to increase awareness

among KSU staff and students on health risks caused by digital addiction was high, and that the impact of the health promotion activities on the awareness among KSU on health risks caused by digital addiction was high, and the implemented any health programs, studies conducted, tools to measure digital addiction, and health promotion activities had a moderately positive effect on the impact of the health promotion activities on the awareness, the more effective was tools to measure digital addiction, then health promotion activities, then studies conducted, then implemented any health programs.

Table (1): Demographic data.

Variables	Categories	Frequency (F)	%
Agreement of participation	Yes	516	96.6
	No	18	3.4
Gender	Male	335	64.9
	Female	181	35.1
Age	From 20-29 years	219	42.4
	From 30-39 years	185	35.9
	From 40-49 years	77	14.9
	From 50-59 years	26	5
	60 years or more	9	1.7
Nationality	Saudi	457	88.6
	Non-Saudi	59	11.4
Education level	Bachelor	204	39.5
	Diploma	209	40.5
	Masters	82	15.9
	PhD	21	4.1
Income	Less than 5000 S. R	212	41.1
	From 5000-9000 S. R	161	31.2
	1000 S.R or more	143	27.7
Marital status	Single	220	42.6
	Married	296	57.4

Table (2): Evaluating the reliability of the questionnaire.

Domains	No. items	Cronbach's Alpha
1 Implemented health programs for digital addiction	5	0.713
2 Studies conducted in the institution about digital addiction	5	0.721
3 Measures digital addiction within the institution	5	0.694
4 Health promotion activities used to increase awareness	5	0.667
5 The impact of the health promotion activities	5	0.734
All questions	25	0.826

Table (3): Health programs about digital addiction at KSU campus.

No.	Item		Yes				No	Mean	%
1	Does the University implement health programs about digital addiction?	F %	432 83.70%				84 16.30%	0.84	84
2	If yes, did you attend any of these programs?	F %	350 67.80%				166 32.20%	0.68	68
			Totally Disagree	Disagree	Neutral	Agree	Totally Agree		
3	If yes, to what extent do you find that the program you attended achieved its aim?	F %	15 2.90%	15 2.90%	103 20.00%	153 29.70%	230 44.60%	4.1	82
4	Have you gained benefits from attending this program?	F %	17 3.30%	25 4.80%	105 20.30%	141 27.30%	228 44.20%	4.04	81
5	Do you think that future programs at King Saudi University about digital addiction still need many reforms?	F %	25 4.80%	21 4.10%	76 14.70%	148 28.70%	246 47.70%	4.1	82
Total domain								2.75	79

Table (4): Studies conducted at KSU campus about digital addiction awareness.

No.	Item		Yes				No	Mean	%
1	Have the University conducted any previous studies on digital addiction?	F %	94 18.20%				422 81.80%	0.82	82
2	Do you look forward to conducting a study on digital addiction?	F %	53 10.30%				463 89.70%	0.9	90
			Totally Disagree	Disagree	Neutral	Agree	Totally Agree		
3	If yes, to what extent do you find these studies relevant to digital addiction among KSU campus?	F %	10 1.90%	15 2.90%	91 17.60%	175 33.90%	225 43.60%	4.14	83
4	Do you think conducting ongoing studies on digital addiction in the University significantly reduces digital addiction?	F %	13 2.50%	17 3.30%	70 13.60%	139 26.90%	277 53.70%	4.26	85
5	Do you think that future studies at King Saudi University about digital addiction still need many modifications?	F %	17 3.30%	20 3.90%	77 14.90%	169 32.80%	233 45.20%	4.13	83
Total domain								2.85	85

Table (5): The measurement of digital addiction.

No.	Items		Yes	No			Mean	%	
1	Do you know the tools used by the University to measure digital addiction?	F %	156 30.20%	360 69.80%			0.7	70	
2	Does the University use any reference for evaluating the gained estimates after measuring digital addiction among the students?	F %	111 21.50%	405 78.50%			0.78	78	
			Totally Disagree	Disagree	Neutral	Agree	Totally Agree		
3	Do you think that the current tools used to measure digital addiction are reliable?	F %	10 1.90%	9 1.70%	107 20.70%	182 35.30%	208 40.30%	4.1	82
4	Do you think the tools used to measure digital addictions still need improvement?	F %	13 2.50%	14 2.70%	80 15.50%	157 30.40%	252 48.80%	4.2	84
5	Do you think that COVID-19 increased the prevalence of digital addiction?	F %	14 2.70%	22 4.30%	64 12.40%	142 27.50%	274 53.10%	4.24	85
Total domain							3.02	80	

Table (6): Health promotion activities used to increase awareness on health risks caused by digital addiction.

No.	Items		Yes	No			Mean	%	
1	Do you know what the term 'digital addiction' exactly means?	F %	85 16.50%	431 83.50%			0.84	84	
			Totally Disagree	Disagree	Neutral	Agree	Totally Agree		
2	Do you think that digital addiction is harmful?	F %	8 1.60%	24 4.70%	85 16.50%	187 36.20%	212 41.10%	4.11	82
3	Do you overuse digital devices for their purposes?	F %	11 2.10%	27 5.20%	73 14.10%	170 32.90%	235 45.50%	4.15	83
4	Have you missed any opportunities because of spending a lot of time with digital devices?	F %	8 1.60%	21 4.10%	66 12.80%	176 34.10%	245 47.50%	4.22	84
5	Do you know that increased hours spent while using the smart phone or tablet harms your body health?	F %	12 2.30%	15 2.90%	53 10.30%	168 32.60%	268 51.90%	4.29	86
Total domain							3.52	84	

Table (7): The impact of health promotion activities on awareness levels of health risks caused by digital addiction.

No.	Items		Yes		No		Mean	%	
1	Does the University conduct health promotion activities to increase awareness of health risks caused by digital addiction?	F %	87 16.90%		429 83.10%		0.83	83	
			Totally Disagree	Disagree	Neutral	Agree	Totally Agree		
2	Do you find these health promotion activities increase your awareness?	F %	4 0.80%	20 3.90%	79 15.30%	195 37.80%	218 42.20%	4.17	83
3	Do you think health promotion activities are useful for controlling digital addiction?		10 1.90%	17 3.30%	62 12.00%	176 34.10%	251 48.60%	4.24	85
4	Do you think that the stakeholders must be involved in organizing these health promotion activities?	F %	7 1.40%	23 4.50%	68 13.20%	169 32.80%	249 48.30%	4.22	84
5	If you are asked to participate in these health promotion activities, will you agree or not?	F %	8 1.60%	18 3.50%	68 13.20%	173 33.50%	249 48.30%	4.23	85
Total domain							3.54	84	

**Discussion**

According to Alavi et al., the idea of addiction isn't simple to be defined, and the utilization of the word addiction has been regarded as contentious; yet, the dependency on a drug or activity is key to its description. Smartphones provide numerous benefits, but users should be mindful of the negative consequences, the most serious among which is smartphone addiction, a disorder characterized by compulsive misuse. Individuals suffering from smartphone addiction may have social, mental, and/or health issues [19,20].

As stated by Ching et al., smartphone addiction is primarily defined by excessively or poorly managed preoccupations, desires, or actions surrounding smartphone usage to the degree that people disregard other aspects of life [21]. According to a recent study, a growing percentage of Internet users worldwide are developing internet addiction, with substantial difficulties appearing among university students. internet addiction is classified into two types: Generalist and particular. To be more specific, generalized internet addiction is a multi-dimensional as well as general behavior of smartphone and internet overuse, which is associated with other issues such as impaired family structure, interactional issues, reduced life satisfaction, as

well as poor emotional well-being and worsening academic performance [22,23].

These younger generations use their gadgets to browse the internet, view movies, and check social networking site updates. Nomophobia, phubbing, or addiction to social media are all terms for smartphone addiction. A recent systematic study concluded that smartphone addiction might harm one's mental and physical health. Interestingly, another research identified a negative but minor correlation between social media addiction measurements and well-being [24-27]. In Saudi Arabia, smartphone use went from 61.54% within 2015 to 65.18% within 2018, with a forecast growth to 66.28% within 2022. Smartphone use, particularly among the country's younger population, has expanded significantly as a result of social media access. For example, more than half of Saudis 54% were active users of social media using mobile phones [28].

Our study included 516 participants who completed our questionnaire, 42.4% of their ages ranging between 20-29 years, and being at higher risk of misuse. Thus, internet addiction is more prevalent among young people, as well as what has shown in Alotaibi et al., study which stated that young adults are more subjected to embracing as well as over utilize smartphones [29,30].

For the implemented health programs about digital addiction by KSU, the majority of participants 84% stated that KSU implements health programs about digital addiction, which considerably agrees with previously published studies which stated that various health experts and educators believe that treatment options for treating the issue of internet addiction should be supplemented by preventative measures that include risk factors prior to progression of addiction to a more severe form. The current scientific consensus advocates for creating well-controlled and methodologically sound treatments based on research-based and theoretical evidence for preventing and managing problematic internet and new technology usage [31].

In our study, 68% of the respondents attended these health promotion programs. 82% stated that these programs achieved their aim, as well 81% stated that they had gained benefits from attending these programs, which is in line with Vondráčková & Gabrhelík's review centered on the prevention of internet addiction, emphasizing the need to improve certain skills with the assistance of experts and other relevant persons as parents and counselors [32].

Moreover, programs' properties were considered important as information provision versus interactive programs. In addition, environmental actions were identified as necessary in certain areas as within countries where internet addiction is a public health issue in which regulation must be strengthened and promoted [33].

For the studies conducted in the institution about digital addiction awareness, the majority of the participants (85%), that conducting continuous studies on digital addiction in the University have significant outcome in reducing digital addiction, that agrees with Lopez-Fernandez & Kuss study which stated that within the European Union, there is a requirement for programs and campaigns aimed at children and teens to raise awareness of the dangers of online activity at the individual level. According to research, educational interventions are normally successful, and they are considerably more effective when they incorporate a psychological element as impulsivity management methods during gaming. Young people should be included in talks and activities about online and offline health, the possible good and negative consequences of excessive online activity, and be given knowledge about alternate pastimes and coping mechanisms that do not involve Internet usage [33].

Our study results showed that 85% agreed that COVID-19 increased the prevalence of digital addiction, which highly agrees with other previous studies' results, as during COVID-19 pandemic, house confinement and social isolation increased internet usage internationally. Some studies link COVID-19-related anxiety and despair to a rise in incidences of smartphone addiction. Also, COVID-19 anxiety was shown to be connected to the intensity of problematic smartphone usage, sadness, and anxiety [34]. Furthermore, Albursan et al., study results demonstrated a significant high prevalence of smartphone addiction 37.4%. In comparison to earlier research, this proportion is similar to what Al Barashdi discovered 33.1%. However, it is higher than what other studies discovered, as Chen, et al., stated it as 29.8%, Karjewska-Kulak, et al., stated 22.9% [35-37].

However, it is lower than what was stated by other studies, such as Buctot, et al., who showed that 62.6% of participants were addicted to smartphones. Similarly, Kwak, et al., found that almost 70% of teenagers had a moderate to severe smartphone addiction. Furthermore, the research results of Albursan et al., revealed that 7.7% of those who had high academic procrastination, whereas 62.8% of those who had moderate procrastination [37-39]. Compared to other past studies, that percentage is near to levels stated by Ebadi, & Shakoorzadeh but lower than that of Al-Qudah, et al., who stated that the percentage of procrastination across University Saudi students was within the moderate level, that was 83.6% [40,41].

For that health promotion activity which are used to increase awareness among KSU staff and students on health risks caused by digital addiction, our study results showed that the agreement percentage about that overuse of the digital devices is out of their purposes was 83%, and as it's well-known that because the students utilize their mobile phones primarily for online access, the indicated agreement in our study (83%) is much greater than what was mentioned in Kolaib et al., study for internet addiction, which claimed that 6% of the students were categorized as internet addicts. However, the incidence of internet addiction in that research is greater than in prior Saudi Arabian studies 1.9-4% [42-44].

Our study found that the agreement percentage about the overuse of digital devices is out of their purposes was 83%, and that they have missed opportunities because of spending a lot of time with digital devices was 84%, which agrees with a previous study within Saudi Arabia that stated

that more than half 54% of Saudis were active users of social media by using their mobile phones. The average usage of mobile phones in Saudi Arabia ranged between 2-6 hours each day in 2016 [28].

Also, the agreement percentage in our study about digital addiction being harmful was 82%, and that increasing hours spent while using a smartphone or tablet harms your body's health was 86%. That highly agrees with what was stated in previous studies, as Alotaibi et al., a study which stated that participants who were addicted to smartphones were also more subjected to experiencing pain in their neck 67.7%, neck 62.2%, and shoulder 39.2% [29].

Furthermore, research has linked smartphone addiction to neck and hand discomfort, as well as visual tiredness. Furthermore, smartphone addiction-induced neck and shoulder discomfort may eventually lead to musculoskeletal diseases. Continuous smartphone usage may also result in faulty postures that produce discomfort in various body parts [45,46].

Other researchers have shown that DeQuervain tenosynovitis, or wrist discomfort, is strongly connected to various electronic gadgets. Texting and conversing on a mobile phone have been linked to De Quervain ten osynovitis. According to this result, smartphone education initiatives should address the physical repercussions of mobile phone addiction and usage [47,48].

For the impact of the health promotion activities on the awareness at KSU on health risks caused by digital addiction, our study found that 83% said the KSU conducts health promotion activities to increase a wareness among the students on health risks caused by digital addiction. It stated that these health promotion activities increase their awareness, and 85% agreed that the health promotion activities are helpful in controlling digital addiction. That goes in line with findings from other studies that have indicated the efficacy of instructional programs for the treatment of internet and new technology addiction. Environmental variables aid the majority of these programs as the school as well as its members, and cognitive elements as self-efficacy and self-regulation. These two elements have a significant impact on addiction.

Educational programs on Internet addiction's prevalence and negative outcomes influence behavioral performance and internet usage positively. As the challenges caused by online time limit the teenage desire to meet academic duties, numerous

educational programs have focused on improving academic motivation and enhancing time efficiency and have shown beneficial in minimizing the pattern of Internet addiction. Most of these programs try to teach effective time management skills and promote learning, motivation, and attention. These goals are critical for managing Internet addiction, particularly among teenagers, since those predisposed to the condition have difficulty effectively limiting the time they spend using the Internet [49,50].

Even though numerous young people are uninformed of the problems connected with new technology, teenagers start to become aware of the dangers inherent in their improper and even addictive usage following interventions by implementing educational programs [51].

Thus, the efficacy of educational programs seems to be founded on individuals being aware of the negative repercussions of their activities, which improves people's drive to embrace healthy habits and avoid addictive behaviors. It was discovered that programs that did not increase knowledge about the seriousness of Internet addiction or did not give practical chances for developing self-control aspects had no meaningful influence on the amount of time spent on the Internet [52].

#### *Conclusion:*

The results support the concept that intervention of health promotion actions and programs are required to avoid and address present issues associated with using the internet and technology gadgets. All of the programs, in one way or another, have focused on sensitizing individuals to and increasing knowledge about the issues linked to excessive internet usage, allowing for a generalized decrease in the maladaptive behaviors of the participants in the various research.

Also, this study's findings can help create a big description of the impacts and rationales for digital addiction to design comprehensive awareness public programs to contain digital addictions among people.

#### *Recommendations:*

Healthcare providers must educate individuals on the signs of digital addiction as well as different ways to reduce internet time consumption through promoting exercise and engaging them in outdoor activities; health practitioners, as well as scientists, should identify a new set of skills, identify the unfavorable technological effects on individual's physical and psychological health as well as the

vulnerabilities of at-risk people; and guide parents and teens on possible health interventions.

Furthermore, scientists are encouraged to develop training programs with recommendations to enhance understanding and attitude toward health threats, such as the physical and psychological effects of cell phones and internet usage. In addition, educate internet users, parents, teachers, and communities on online safety, and engage with experts to assist in continuous messaging that may reach diverse groups.

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## دور التوعية الصحية ضد المخاطر الصحية التي يسببها الإدمان الرقمي

خلفية البحث : مفهوم الإدمان الرقمي اكتسب شعبية في السنوات الأخيرة، تتزايد الدعوات إلى أساليب معالجتها، خاصة بين المراهقين. في حين أن صلاحية هذه الظاهرة كمسألة صحية عقلية قابلة للتشخيص لا تزال قيد المناقشة، إلا أن هناك مطلباً لوضع تدابير وقائية وتداخلية تحص الناس على التحكم بشكل أفضل في استخدامهم للإنترنت.

الهدف من البحث : تقييم تأثير أنشطة تعزيز الصحة على المخاطر الصحية الناجمة عن الإدمان الرقمي في حرم جامعة الملك سعود في المملكة العربية السعودية.

المواد والطرق : تم إجراء دراسة مقطعية مستعرضة قائمة على الاستبيان في جامعة الملك سعود. استجاب ما مجموعه ٥١٦ شخصاً. تم تحليل البيانات بواسطة استخدام برنامج أس بي أس رقم الإصدار ٢٦

النتائج : أكمل ٥١٦ شخصاً الاستبيان ٦٤.٩٪ ذكور و ٣٥.١٪ إناث و ٤٢.٤٪ تتراوح أعمارهم بين ٢٠-٢٩ سنة و ٤٠.٥٪ لديهم دبلوم على الأقل. وأظهرت النتائج أن ٨٤٪ ذكروا أن الجامعة تنفذ برامج صحية حول الإدمان الرقمي، وذكر ٨١٪ أنهم استفادوا من حضور هذا البرنامج. علاوة على ذلك، ذكر ٨٢٪ أن الجامعة أجرت دراسات سابقة حول الإدمان الرقمي، ويعتقد ٨٢٪ أن الأدوات الحالية المستخدمة لقياس الإدمان الرقمي موثوقة، ويعتقد ٨٥٪ أن معدلات الادان الرقمي قد زادت خلال جائحة كورونا. أيضاً، أقر ٨٢٪ أن الإدمان الرقمي ضار و ٨٦٪ علموا أن زيادة الساعات التي يقضونها في استخدام الهواتف الذكية أو الأجهزة اللوحية تضر بصحة الجسم. بالإضافة إلى ذلك، ذكر ٨٣٪ أن الجامعة تقوم بأنشطة تعزيز الصحة لزيادة الوعي بالمخاطر الصحية التي يسببها الإدمان الرقمي. أظهرت النتائج أيضاً أن البرامج الصحية المنفذة، والدراسات التي أجريت وأدوات قياس الإدمان الرقمي أنشطة تعزيز الصحة كان لها تأثير إيجابي معتدل على تأثير أنشطة تعزيز الصحة على الوعي.

الخلاصة : الاستخدام المطول للإنترنت والهواتف المحمولة يؤدي إلى زيادة الإدمان الرقمي، مما يؤثر بشدة على الأداء والصحة. ساعدت مبادرات تعزيز الصحة الموصى بها على زيادة الوعي وتقليل الاستخدام الرقمي للإدمان. نتيجة لذلك، تؤكد هذه الدراسة على الصعوبات التي يجب التعامل معها في البحث المستقبلي.