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AN ANALYSIS OF SMARTPHONE DEPENDENCE AND USE AMONG STUDENTS WITH LEARNING DISABILITY: A STUDY OF SAUDI ARABIA

Abstract. These days, cell phones and smartphones are ubiquitous among the young people. Because of all the convenient functions that cell phones provide, their use has skyrocketed in recent years. As a result, the concept of smartphone addiction has emerged. Smartphone addiction, an impulsive condition produced by excessive and uncontrolled use of cell phones, is often regarded as one of the most pressing issues of the 21st century. The purpose of this study is to examine the prevalence of smartphone addiction among students with learning disabilities and the factors that contribute to it, including but not limited to gender, daily use time, frequency of control, number of social media accounts, and intended use. A total of 366 pupils made up the study's sample. The Smartphone Addiction Scale and the Personal Information Form were used to compile the data for this study. Kruskal-Wallis and Mann-Whitney-U tests are used to analyse the data. According to the data, there are notable differences in the degrees of smartphone addiction among students based on gender, daily use time, frequency of control, and intended use.

Keywords: smartphone, smartphone addiction, learning disabilities, school students

Introduction. Because of their convenience, portability, and ability to facilitate communication in any setting, mobile phones have quickly amassed a massive user base (Aktas & Yilmaz, 2017). Due to the convenience and speed with which information can be accessed online, mobile phones have become an integral component of modern life (Castellsetal.,2007). Smartphones are the most up-to-date type of mobile phone, always developing further each year. User-friendly mobile devices, smartphones combine a mobile phone with basic computer features such as Internet access (via Wi-Fi or cellular networks), audio and video recording, a programmable application centre and operating system, location-based services (via GPS), and touchscreens (Haug et al., 2015). There have been both beneficial and negative effects on society, business, and education as a result of the proliferation of smartphones (Y. K. Lee et al., 2014a; Minaz & etinkaya-Bozkurt, 2017).

According to the results of a study conducted in China (Zou et al., 2019), smartphone addiction may represent a novel risk factor for hypertension in young people. Smartphones have become almost a necessity in people's day-to-day lives, used for everything from connecting to the Internet and social me-

dia to playing games, using applications, and listening to music for entertainment (Han et al., 2017; Jena, 2015). The majority of today's population, particularly young people, makes use of these relatively new forms of communication (Chóliz,2012; Gezginet al.,2018; Onal,2019; Tukel,2020; Walsh et al., 2011).

Smartphones have become indispensable in modern life as a result of the numerous useful applications available for them (Alfawareh & Jusoh, 2014). They have become the go-to resource for users seeking answers to questions across a wide range of topics. Students in higher education are notorious for not taking notes during lectures but instead snapping pictures with their iPhones (Aktas & Yilmaz, 2017). According to Tossell et al. (2015), going without a smartphone is preferable to giving up things like up brushing, exercising, wearing shoes, eating chocolate, and having a shower. Although it facilitates human existence, over-reliance on a device can lead to addiction, which in turn poses serious concerns.

Excessive use of mobile phones has been linked to a variety of physical and mental health issues, according to a recent epidemiological study. These include headaches, weariness, decreased focus, insomnia, and even hearing loss. Furthermore, research showed that this group typically displays characteristics such as low self-esteem, extraversion, stronger approval motivation, and increased self-monitoring (Danilo, Nami, and Jinsoo, 2019; Asli, Samet, Cemal, Serdar, Onat, and Nesrin, 2016). The late or irregular sleeping patterns caused by mobile ring and vibrations disrupt the sleeping cycle, which can lead to depression, social anxiety, and other instabilities (Kalsoom, Rukiya, Ayesha, Abdullah, and Maryam, 2019; Daniela et al., 2019).

Forty percent of teenagers and adults, according to recent studies illustrating mobile phone use, spend more than four hours every day on their cell phones making calls and sending texts. This sample showed more problems in social and emotional health compared to others who use smart phones for less than 4 hours a day (Pearson & Hussain, 2015; EnezDarcin, Kose, Noyan, Nurmedov, Yilmaz, and Dilbaz, 2016; Aljomaa, AlQudah, Albursan, Bakhiet, and Abduljabbar, 2016; Sarti, Bettoni, Offredi, Tironi, Lombardi, Traficante, and Luisa Lorusso. 2019). The present study tries to explore the status of special learners in Saudi Arabia.

Addiction and Mobile Device Dependence. We might define habits as the things we do routinely that improve the quality of our lives. Existing behaviours can start to develop into addiction if they cause problem-solving failure or become emotionally, socially, or intellectually hazardous (Ozturk, 1989). Addiction comes from the Latin word "addicere," which means "to dedicate, to devote oneself to someone else" (Tarhan & Nurme dov, 2011).Addiction is described as a lack of self-control or desire to abstain from a substance or action by Egger and Rauterberg (1996). An overarching definition of addiction offered by Unal (2015) reads as follows: "the uncontrollable urge to repeat substance intake or action in question, regardless of the negative effects on one's mental and physical health or social life" (emphasis added).Some scholars (Bian & Leung, 2015; Stein et al., 1994) argue that behavioural addictions can be just as harmful as alcohol and substance addictions. According to Griffiths (1999), human-machine interface addictions are the same as other behavioural addictions like gambling and food. Others contend that further study is needed before notions like smartphone addiction can be classified as behavioural addiction (Kardefelt-Winther, 2014; Wang et al., 2015). Although narcotics, alcohol, and tobacco are the first to come to mind when considering the concept of addiction, there are other addictions centred on activity that do not contain physical substances, such as gaming, shopping, or mobile phone addiction (Greenfield, 1999).Kim(2013) To put it plainly, addictions based on behaviour are also known as behavioural disorders. Even if smartphones make it easier and faster to complete many tasks, excessive and unchecked use can lead to psychological, social, and cognitive risks (Han et al., 2017; Y.K. Lee et al., 2014a; Unal, 2015). Specifically, the Physical and mental health issues have been linked to people's increased reliance on cell phones (Kwonet al., 2013).

Literature Review. Nomophobia (Pavithra et al., 2015), problematic (smart) phone use (Wang et al., 2015), and smartphone addiction (Herrero et al., 2019) are only a few examples of mobile phone addictions that have been studied. These ideas are distinct from one another, although they share many commonalities. Some researchers have suggested renaming the condition from "addiction" to "problematic smartphone use" (Kardefelt-Winther, 2014) since they struggled to classify the data collected with a measurement tool as addiction. This is why some academics prefer to focus on problematic

smartphone use, while others employ the concept of smartphone addiction. The concept of smartphone addiction was utilised in this study. According to Bian and Leung (2015), smartphone addiction is an impulse disease characterised by compulsive and excessive smartphone use. Nomadophobia, meanwhile, is described as the worry of being without a mobile device (Jena, 2015). Numerous studies have looked into the different facets of smartphone addiction (Alanoglu & Karabatak, 2021; Demirbilek & Minaz, 2020; Gutiérrez et. al., 2016; Haug et al., 2015; Kaysi et al., 2021; Kwon as al., 2013; Osorio-Molinaet al., 2020; Rahim et al., 2021). Compared to mobile phone addiction, research into smartphone addiction in special learners is scarce. In one of the research investigating smartphone addiction in South Korea, Cha and Seo (2018) looked at the smartphone use patterns, addictive traits, and risk factors among college students. Students primarily use their smartphones for texting, reading the web, playing games, and connecting with friends on social media, according to the study's findings.

Addiction to smartphones was studied by Van Deursen et al. (2015), who found that regular smartphone use was significantly associated with lower EQ, higher social stress, less self-control, and younger age. The extent to which college students in Korea are dependent on their smartphones was examined from a number of different angles in a 2014 study (H. Lee et al. The study found that women are more likely to become dependent on their smartphones. Another research team, Panová et al.(2109), examined the cross-national differences in anxiety and depression ratings in connection to smartphone use (texting, accessing the Internet, uploading social content, reading social content, playing games). Participants' primary smartphone activities were found to be texting, social networking, and surfing the web. Detachment from cell phones, according to research by Cheever et al. (2014), can create anxiety in college students. Students compared the feeling of being disconnected from their phones to that of separation anxiety.

More frequent occurrence of these symptoms was also found to be associated with increased smartphone use. Another study by Soni et al. (2017) indicated that as smartphone use became more common, so did the prevalence of smartphone addiction. The smartphone dependency and utility of college students was investigated by Minaz and Etinkaya-Bozkurt (2017). They observed that there was no correlation between students' smartphone addiction and demographic variables including gender, level of education, or age. In addition, they hypothesised that college students primarily use their smartphones to access social communication networks, and that this usage accounts for four or more hours each day, on average.

Importance of the Study. According to the available research, there are two distinct types of mobile phone dependence: those using smartphones and those involving basic mobile phones. In recent years, researchers have focused on the growing problem of people's unchecked and excessive use of smartphones (Choi et al., 2012; Herrero et al., 2019; Kuang-Tsan & Fu-Yuan, 2017; Kwon et al., 2013). The use of mobile devices, including smartphones, has been shown to decline with age (Sanchez-Carbonell et al., 2008). Several studies (Aljomaa et.al., 2016; Pavithraetal., 2015; Sonietal., 2017) confirm that smartphone addiction is extremely common among today's college students. Since smartphone use is so widespread among college students, this discovery may indicate that some of them are vulnerable to developing an addiction to their devices (Chóliz,2012). It is crucial, therefore, to assess the extent to which college students are dependent on their smartphones and to identify any associated factors. Discovering the root causes of smartphone addiction requires an understanding of how many factors influence the frequency and duration of smartphone use. This allows for more efficient management of preventative measures, therapeutic interventions, and risk evaluation procedures.

Purpose of the study. The purpose of this research is to add to the existing body of knowledge by investigating several aspects of college students' smartphone use and addiction. Researchers looking into the effects of smartphone addiction among special learners will find this study to be a valuable resource. The study aims to address the following issues:

a. Can we assume that male and female students have similar rates of smartphone addiction?

b. Does the degree to which special students are dependent on their smartphones vary considerably according to how often they use them?

c. Do students' degrees of smartphone addiction vary considerably according to the number of times they exercise self-control on a daily basis?

d. Is there a correlation between the amount of social media accounts a student has and their level of smartphone addiction?

e. How much does the purpose of a student's smartphone have a role in their level of smartphone addiction?

Methodology. The screening model, commonly employed in quantitative research, was used to design this study. Opinions, interests, abilities, and attitudes concerning a problem or event are the focus of screening studies, which are undertaken with bigger sampling groups than other research methodologies (Fraenkel & Wallen, 2006).

Research Subjects Sampled. Students enrolled in the 2022–2023 academic year 6 special schools from Rafha, Hafar Al Batin, and Arar made up the study population. Criterion sampling, one of the non-random sampling approaches, was used to determine the research sample. A total of 366 smartphone-using students with learning disabilities (ADHD or dyslexia) from eight different institutions willingly volunteered to take part in this survey. The pupils' basic information is listed in Table 1.

Table 1

Study sample distribution

Variables		N	%
Gender	Male	239	74.45
	Female	112	34.89
Daily usage	1 hour or less	56	15.01
	2–4 hours	215	57.34
	5 hours or more	121	33.21
Daily frequency of control	20 times or less	107	28.08
	21–40 times	127	34.02
	41 times or more	151	41.94
Social Media Account	0	17	5
	1	51	16.98
	2	83	22.78
	3 or more	246	67.26
Intended use	Calling & Chatting	112	30.24
	Internet & Social media	192	48.74
	Other (gaming, texting, etc.)	21	6.36
	All	66	16.24
	Total	321	100

Study Tools. Data collection consisted of using a two-part computerised form. The first section of this form requests basic contact information, while the second section assesses how dependent you are on your smartphone with a series of multiple-choice questions.

Information Collection Form: The researchers created a Personal Information Form with questions about things like gender, grade, average daily smartphone use time, planned use, and frequency of smartphone control.

The Smartphone Dependency Index: The study measured students' smartphone dependence using an Arabic version of the Smart Phone Addiction Scale (Demirci et al., 2014). Kwon et al.(2013) created the first iteration of the scale. The scale's dependability, as measured by Cronbach's Alpha, came up at 0.947. There are 33 components and 7 criteria making up the scale. Problems with daily functioning and tolerance

are the initial signs of addiction, followed by pleasant anticipation, cyberspace-oriented interactions, excessive use, social network addiction, and physical manifestations. The Likert scale's range is 33–198 points.

Analysing the Data: SPSS version 27 demo statistics package software was used to analyse the data collected for the study. Before beginning the data analysis, the normality assumptions were checked by looking at the skewness and kurtosis values. According to the results, the data did not exhibit a normal distribution. Therefore, the analysis of the data involved the use of non-parametric techniques. For comparisons between three or more groups, the Kruskal-Wallis test was employed, whereas the Mann-Whitney-U test was used for pairwise comparisons.

Results of the Research. The significance of the study participants' gender, daily use time, frequency of control, number of social media accounts, intended use of cell phones, and smartphone addiction levels are discussed. To see if there was a statistically significant difference in smartphone addiction between the sexes, a Mann-Whitney-U test was performed. The data analysis outcomes are displayed in Table 2.

Table 2

Smartphone addiction scores compared between sexes using the Mann-Whitney U test.

		Mean	Total	U	P
M	239	158.17	41326.1	09991.8	<0.001
F	112	209.13	25724.9		

The data show that there is a statistically significant difference in the degree to which male and female college students rely on their smartphones (U=09991.5, p0.05). According to the average rankings, women report higher degrees of smartphone addiction than men. Using the Kruskal-Wallis test, we looked at the number of social media accounts, frequency of control, intended usage, and amount of time spent using students' smartphones to see if there was a statistically significant difference. The calculations are displayed in Table 3.

Table 3

Statistical Analysis Using the Kruskal-Wallis Test Reveals Varying Degrees of Smartphone Addiction Based on Average Daily Use, Control, Intended Use, and the Number of Social Media Accounts.

Variables		N	Mean	SD	X2	P	Sig. diff.
Daily usage	1 hour or less	55	112.89	2	55.287	<0.001	3–1, 3–2, 2–1
	2–4 hours	187	167.79				
	5 hours or more	107	236.19				
Daily frequency of control	20 times or less	99	130.55	2	51.675	<0.001	3–1, 3–2, 2–1
	21–40 times	116	157.78				
	41 times and more	139	229.23				
Intended use	Calling & Chatting	112	159.23	3	11.774	0.003	2–1, 2–4
	Internet & Social media	177	201.23				
	Other (gaming, texting, etc.)	13	189.29				
	All	48	159.78				
Social Media Account	0	10	151.00	3	3.001	0.441	-
	1	56	172.79				
	2	73	168.67				
	3 or more	219	189.56				

p<0.05

The findings reveal that college students' levels of smartphone addiction vary considerably according to the length of time spent using the device each day (X^2 =55.287, p0.05), the number of times they exercise control over their usage each day (X^2= 51.675, p0.05), and the purpose for which the device was purchased (X^2 =11.774, p0.05). The number of social media profiles is not a significant factor, though (X^2= 3.001, p>0.05). The results also show that the impacts of smartphone addiction vary with the amount of time spent on the device each day, the degree of control exercised, and the device's intended usage. The Mann Whitney U test, used to determine statistically significant differences between groups, revealed that there were significant differences in daily use time between the 3–1, 3–2, and 2–1 groups; in the frequency of control between the 3–1, 3–2, and 2–1 groups; and in the intended use between the 2–1 and 2–4 groups. According to these data, persons who spend a lot of time with their smartphones, have greater control over them, and use them extensively for accessing the internet and social media are more likely to report symptoms of smartphone addiction. In other words, people who spend more time interacting with their smartphones and who use them primarily for internet and social media purposes are at a higher risk of being addicted to their devices.

Discussion. One of the most potent technological tools in recent years, smartphones make people's lives easier when utilised intentionally (Minaz & etinkaya-Bozkurt, 2017). The widespread and improper use of smartphones in modern society has given rise to new problems, such as smartphone addiction, nomadophobia, and problematic smartphone use (Soni et al., 2017). This research looked at how much time college students spend on their smartphones, how often they feel they have control over their usage, how many social media accounts they have, and how they plan to utilise their devices. This study revealed a statistically significant difference in smartphone addiction severity across the sexes. The levels of smartphone addiction among female students are significantly greater than those among male students. The findings of Kuang-Tsan and Fu-Yuan (2017) are consistent with this observation; they found that female students are more likely to use smartphones than male students. In Saudi Arabia, this may be quite understood because the girls have very limited scope of spending time in co-curricular activities such as going to stadiums to play sports etc. Numerous investigations have found the same thing (S.W. Choi et al., 2015; Kwon et al., 2013; H. Lee et al., 2014, to name a few). While this study finds a correlation between males and smartphone addiction, others (Kuyucu, 2017; Kwon et al., 2013) find no such pattern. According to the available research, smart phone addiction is more common among women than among males. This trend was first noticed by Altunda and Bulut (2017), who attributed it to the fact that women tend to spend more time on their phones and prefer indirect to direct forms of contact. And they pointed out that this could be because women are disproportionately active on social media sites like WhatsApp, Facebook, and Instagram. Gezgin et al. (2018) attributed this trend to the increased smartphone use and reliance among female students. Notable findings also include the fact that smartphone addiction varies considerably according to the amount of time spent on them each day. Addiction levels are higher for people who use their phones for five hours a day or more.

Among the literature's research with similar findings is a Swiss study by Haug et al.(2015) that found regular smartphone use was associated with an increased risk of becoming addicted to the device. The literature review also highlights studies (Aljomaa et al., 2016; Han et al., 2017) that show how students' growing phone use time correlates to an increase in their level of smartphone addiction. Students were evaluated on how often they checked their smartphones and those who checked "41 times and more" were deemed to have the highest smartphone addiction score. This finding suggests that kids who spend more time than necessary on their smartphones throughout the school day are more likely to develop an addiction to their devices. Similar results were observed by Sirakaya (2018), who discovered that more frequent smartphone controls throughout the day raised levels of nomophobia. Furthermore, Lin et al. (2015) found that there is a higher correlation between frequent smartphone use and addiction than there was between long-term use and addiction. Similar findings can be seen in work by H. Lee et al.(2014). All of these research show that smartphone addiction is related to how often one uses one. If this trend continues, it will have serious consequences for

young people's mental and physical health (Keskin et al., 2018; Kuyucu, 2017). Most research on smartphone addiction includes discussions on the role of social media. Based on the data collected and analysed for this study, it was determined that the number of student social media accounts was not a significant predictor of smartphone addiction.

Concluding Remarks & Recommendations

There are studies that corroborate this conclusion (Barnesetal., 2019; Chenetal., 2017). Haugetal (2015) found that activities such as texting, reading the news, and utilising social networks all significantly contribute to smartphone dependency. Isik and Kaptangil (2018) claimed that more time spent on social media will lead to an increase in smartphone addiction. When the findings of the published research are taken into account, it is possible to say that the prevalence of social media use via smartphones among today's students has contributed to the rise in smartphone addiction. In keeping with the most recent studies, we assessed smartphone addiction in light of how people actually use their devices. The results showed that people who use their smartphones for accessing the internet and social media are more likely to become addicted to their devices. Previous studies have had comparable outcomes, as reported in the literature. Gezgin et al. (2018) found that college students regularly utilise their mobile devices for a wide range of activities, including social networking, research, online communication, messaging, media consumption, and more. An additional study that supports these findings indicated that college students use their smartphones for both educational and recreational purposes (Internet use, social media, music, etc.). Another study found that students who used their phones for social networking and retail purchases were more likely to suffer from nomophobia.

Similar studies found that using smartphones for educational, recreational, or news-related purposes had no effect on people's levels of nomophobia (Sirakaya, 2018).There is little doubt that smartphone technology will advance at a faster rate in the years to come. These innovations will greatly simplify many aspects of human life, but they also come with serious risks. Smartphone addiction and nomophobia have been cited as two of the most pressing issues (Han et al., 2017; Pavithra et al., 2015). Many specialists believe that smartphone addiction leads to issues like sleep disorder, anxiety, loneliness, and depression, therefore learning more about it is crucial in social and educational settings. Future leaders in education, medicine, and government can't afford to fall behind the times when they advance in college education. However, these tools necessitate mindful and restrained application. Students can benefit from rules governing the deliberate use of technology in order to raise their awareness of potential risks and opportunities. Therefore, further research is needed to better understand how young people utilise smartphones. Many people attribute their smartphone addiction to social media, however these platforms can also serve as a valuable resource for overcoming this issue. The majority of research on this topic is quantitative and reveals the screening model's big picture. Therefore, in the future, research should be conducted using a variety of research approaches, notably qualitative and experimental.

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АНАЛІЗ ЗАЛЕЖНОСТІ ТА ВИКОРИСТАННЯ СМАРТФОНІВ СЕРЕД СТУДЕНТІВ ІЗ ПРОБЛЕМАМИ НАВЧАННЯ: ДОСЛІДЖЕННЯ САУДІВСЬКОЇ АРАВІЇ

Анотація. Сьогодні мобільні телефони та смартфони є повсюдним явищем серед молоді. Завдяки всім зручним функціям, які надають мобільні телефони, їх використання різко зросло в останні роки. У результаті цього з'явилося поняття смартфонозалежності. Смартфонна залежність, імпульсивний стан, спричинений надмірним і неконтрольованим використанням мобільних телефонів, часто вважається однією з найактуальніших проблем 21 століття.

Мета цього дослідження полягає в тому, щоб вивчити поширеність залежності від смартфонів серед студентів із труднощами у навчанні та чинники, що сприяють цьому, включаючи, але не обмежуючись такими, як стать, тривалість щоденного використання, частоту контролю, кількість облікових записів у соціальних мережах та цільове використання.

Вибірку дослідження склали 366 учнів. Для збору даних для цього дослідження використовували Шкалу залежності від смартфона та Форму особистої інформації. Для аналізу даних було використано тести Крускала-Уолліса та U-критерій Манна Уітні.

У процесі дослідження було з'ясовано, що існують помітні відмінності в ступенях залежності від смартфонів серед студентів залежно від статі, часу щоденного використання, частоти контролю та цільового використання.

Ключові слова: смартфон, смартфонозалежність, труднощі в навчанні, школярі