

# Social Media Addiction and Its Relationship to Symptoms of Depression and Generalized Anxiety in Deaf and Hard-Of-Hearing Students

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**Abstracts:** Social media has become a virtual social and entertainment environment for many individuals. In today's society, although social media provide a useful way to connect with peers, it can expose users to addiction to these means, affecting their mental health. Therefore, this study aimed to determine the relationship between social media addiction and symptoms of depression and generalized anxiety in deaf and hard-of-hearing students (DHH). Data was collected from 165 students in integration schools in southern Saudi Arabia. The mean age of the sample ranged from  $M = 18.6$  years,  $SD = 1.81$  years. The Centre for Epidemiological Studies Depression Scale (Andresen et al., 1994) was used. Generalized Anxiety Disorder-7 (Spitzer et al., 2006). The results revealed that more than 50% of DHH students have a moderate level of addiction to social media. More than 25% have a severe level of addiction. In addition, as expected, the results showed a statistically significant positive relationship between social media addiction and both symptoms of depression and generalized anxiety. Linear regression analysis showed that generalized depression and anxiety significantly predicted social media addiction. The study recommended the importance of spreading psychological awareness of the dangers of social media addiction, and the damage it carries to the mental health of individuals. Holding awareness courses and lectures for DHH students and people with disabilities in general on the negative effects of social media addiction on mental health.

**Keywords:** Social Media Addiction, Depression, Anxiety, Deaf and Hard-of-Hearing, Saudi Society.

## 1. INTRODUCTION

The use of social media is one of the popular recreational activities among Internet users. Nearly half of the world's population (49%) or nearly 3.8 billion people are social media users, and these numbers are increasing dramatically daily [1]. There are many social media, the most famous of which are (Facebook, YouTube, Twitter, Instagram, and Tik Tok) [2]. The Internet is used for several reasons, the most important of which are: access to information, recreational activities, and social relationships through social media, which made the use of the Internet an integral part of individuals' daily, lives [3]. The use of social media in interpersonal relationships and education continues to increase [4]. Because of what happened during the COVID-19 pandemic, social media was heavily relied upon in the teaching and learning process [5]. Social media began to be seen as an important educational medium to enhance the learning process, information flow, and communication with peers and teachers, as well as a self-learning method [6]. This has been a risk for teenagers and students in general to spend long periods using social media. Which can cause social media addiction. This is reflected in their mental health.

Online social media addiction is a relatively new addictive behavior among adolescents as a type of Internet-related behavioral addiction [7]. There is an overlap between addictions to online social networks with the classic symptoms of traditional addiction [8]. Earlier literature also suggests that social media is mostly used for social and recreational purposes [7]. Especially among adolescents, because they find many attractions, helped by the spread of smartphones, with the availability of the internet in all places at reduced prices [2]. This has helped many adolescents to overuse social media, and then become addicted, which may affect their mental health [9].

Social media addicts may suffer from symptoms of depression, anxiety, and severe sadness, which may negatively affect relationships with family and those around them from poor concentration and cooperation, and the loss of friends [3, 9]. This may push them to withdraw from real social relationships, and escape to their virtual world through social media, which increases their negative feelings towards themselves and others [10]. Many studies have examined the relationship between social media addiction and depression and anxiety, and some have reported a positive relationship [2, 3, 10-12]. However, whether addiction to these means is a cause or a result of depression or is it a two-way relationship. McDougall, et al., [12] Suggests that sufferers of psycho-emotional

problems that have occurred in the real world escape to social networks. At the same time, overexposure to the virtual community leads to negative emotions. This suggests a two-way link between social media addiction and depression.

Depression and anxiety are major mental health problems, according to the World Health Organization (WHO) More than 264 million people suffer from depression [13]. Depression causes affected individuals to suffer in their daily lives and mainly affects their daily activities. Such as studying, working, and housework, while a severe level of depression can lead to suicide [3]. It was also found that adolescents with depression were 6 times more likely to attempt suicide compared to adolescents who were not depressed [14]. About 800,000 people commit suicide every year, and depression is the leading cause of death among individuals aged 15-29 years [15].

Given the impact of excessive use of social media on the mental health of young people. Especially the level of depression and generalized anxiety, it was considered important to study the relationship between social media and generalized depression and anxiety. Furthermore, it will be interesting to confirm whether social media addiction can be predicted by feeling symptoms of generalized depression and anxiety in this age group. However, among young people, the current study focused on DHH. The reason why the target population was limited to DHH youth was that the use of online social media through mobile phones is integral to their assimilation into the auditory community and communication with other individuals in DHH and hearing [16, 17]. DHH members use social media to integrate into the auditory community without feeling the stigma associated with their disability [13]. Using their phones, social networks provided greater control, without having to reveal their real identities or disabilities [18]. Specifically, social media, such as WhatsApp, WeChat, and Telegram, can help them overcome DHH's directed limitations [13]. In addition, social media has provided users with the ability to understand that they are not alone [19]. There are many forums, support networks, and groups available for DHH on the Internet. These sites range from mental health websites and organizations, such as Beyond Blue and Headspace, to online programs offered by Hear for You [20]. However, excessive use of social media may also expose them to social media addiction, which negatively affects their mental health level [21, 22]. Given the vital role that social media plays in the lives of individuals at DHH, they are therefore at risk of suffering from social media addiction, and exposing them to symptoms of depression and generalized anxiety. It was decided to understand this problem further among DHH youth and derive appropriate practice insights to protect them from the ill effects of excessive use of social media. Moreover, most studies focus on social media and its impact on the people who hear it. DHH is rarely included, especially in Saudi Arabia. Therefore, the current study aims to answer the following research questions:

1. What is the level of social media use for DHH?
2. Is there a statistical correlation between social media addiction and both depression and anxiety in DHH?
3. Can social media addiction be predicted by feeling symptoms of depression and generalized anxiety?

## **2. METHODS**

### **2.1. Participants**

One hundred sixty-five DHH students enrolled in integration programs in southern Saudi Arabia were invited to participate in this study. The age of the study sample is between 17-20 years (mean age 18.6 M = year, SD=1.81). The study sample was used by the appropriate sampling method. There were some criteria in the selection of the study sample (1) that the age of the sample ranges from 17-20 years. (2) The study sample owns a smartphone or laptop and uses it heavily (3) He must have the ability to understand and follow instructions in verbal sign language. (4) The study sample should not have any other disabilities. The hearing level should be from acute to profound hearing loss (> 81 dB HL). (5) The students' hearing level was identified by the school's reports. Communication with the study sample was carried out through sign language

### **2.2. Measures**

*Internet addiction test manual [23]*

The IAT [23] is a short, effective psychometric tool for assessing social media addiction. Although the IAT scale was originally designed to measure Internet addiction, it has been used in several studies to measure the level of social media addiction [3, 24]. IAT consists of 20 paragraphs, and responses to paragraphs consist on the five-point Likert scale (1 = not applicable, 5 = always). The scale mainly covers the diverse effects of social media use on its users' daily routines, social life, feelings, productivity, and sleep pattern. The scale ranges from (20-100) degrees; the higher the level of scores, the higher the level of addiction. The scale designer suggests the score range for the addiction level from 20 to 30, normal; 31-49, mild 50-79 average and 80-100 points is the acute level of addiction (Young, 2010). In this study, CES-D-10 showed adequate reliability and validity, with good internal consistency in this study (Cronbach's  $\alpha = .81$ ).

*Centre for Epidemiological Studies Depression Scale [25].*

The CES-D-10 scale aims to identify an individual's level of depression. The scale consists of ten items, distributed as follows: three elements on the depressing effect, two on the positive effect, and five elements on the physical symptoms. Response scores range from zero to three representing "rarely or none of the time" to "all the time". Scale scores range from (0) to 30. Grades for items 5 and 8 are scored backward because they are statements with a positive effect. Higher scores indicate a greater severity of depression symptoms. CES-D 10 showed good internal consistency reliability in the general population [26, 27]. CES-D 10 has also shown acceptance of good sensitivity and specificity in detecting the diagnosis of depression [28]. In this study, CES-D-10 showed adequate reliability and validity, with good internal consistency in this study (Cronbach's  $\alpha = .81$ ).

*Generalized Anxiety Disorder-7 " GAD-7" [29].*

The GAD-7 scale was developed by [29]. The scale consists of 7 items, the scale aims to assess the frequency of anxiety symptoms based on diagnostic criteria (diagnostic criteria A, B, and C of the Diagnostic and Statistical Manual of Mental Disorders, fourth edition [DSM-IV]) (Frances et al., 2000). Responses consist of zero to four representing "not at all" to "almost every day". Hence, scale scores range from 0 to 21, and scale scores of 5, 10, and 15 represent mild, moderate, and severe anxiety symptoms. The internal consistency of GAD-7 was excellent (Cronbach  $\alpha = .92$ ). The reliability of the retest was (0.83) (Spitzer et al., 2006). GAD-7 has also shown internal consistency and the good reliability in several studies [30-32]. Reliability was checked after data collection, the reliability of the GAD-7 scale in the current study was good (Cronbach alpha = 0.87).

### **2.3. Data Collection Procedure**

Data were collected in October 2021. However, before collecting the data, all participants filled out informed consent forms that made it clear that their participation in the study was voluntary. In addition, it has been clarified that all information and data to be obtained will remain confidential, and that the data will only be used for scientific research purposes. The study obtained ethical approval from the Deanship of Scientific Research at Najran University (NU/RG/SEHRC/11/3) and the Department of Special Education of the General Administration of Private Education. In addition, all actions were carried out by the Declaration of Helsinki. Each student in the study provided informed consent. Questionnaires were given to all DHH youth in their schools. The data collection procedure took 50 minutes, after which participants received some small gifts from the researchers as a token of appreciation.

### **2.4. Data Analysis**

In the current study, 20 SPSS software was used to perform all statistical analyses. Frequency and percentage were used to screen the level of Internet addiction among DHH youth. In addition, methods, standard deviations, and t-tests were used for bivariate analyses taking into account demographic variables. Finally, linear regression analysis was used to examine the relationship between social media addiction and symptoms of depression, and anxiety.

## **3. RESULTS**

Table 1 shows the results of the level of social media addiction for DHH students. More than 50% of DHH

students had social media addiction at a Moderate level. More than 25% of DHH students have a severe level of addiction.

**Table 1.** Percentage of DHH Students on the social media addiction test.

Social Media Addiction Levels	N (%)
Normal use of social media	15 (9.09 % )
Mild addiction to social media	36 (21.81%)
A Moderate addiction to social media	86 (52.12%)
A Severe addiction to social media	28 (16.96%)
Total	165 (100)

Table 2 presents the results of Pearson's association analysis for social media addiction and symptoms of depression and anxiety. A correlation coefficient ( $r = 0.257$ ) was found between social media and depression, and a correlation coefficient ( $r = 0.281$ ) between social media and anxiety, indicating a positive correlation between the variables. In other words, at the level of social media, addiction increases, and the level of depression and anxiety increases in the study sample of DHH. A p-value less than 0.05 was found, so the correlation is statistically significant (at 0.05).

**Table 2.** Correlations between social media and both depression and anxiety variables.

	Depression	Anxiety
Social Media Addiction	0.461**	0.576**

Note: \*\*  $p < 0.001$

A linear regression model was applied to test whether depression and anxiety significantly predicted social media addiction. The result of the regression indicated that depression and anxiety explained 56% of the variance. Which shows that depression and anxiety significantly predicted social media addiction. So, according to the results of Table 3, social media addiction was found to be positively associated with depression and anxiety.

**Table 3.** Regression Analysis Results for predicting social media addiction.

Variables	B	Std. Error	Beta	t	P
Constant	15.18	5.273		2.880	0.005
Depression	1.129	0.182	0.351	6.198	0.00
Anxiety	3.134	0.330	0.538	9.511	0.00

Note.  $R = 0.748$ ;  $R^2 = 0.560$ ; Adjusted  $R^2 = 0.555$ ;  $F (103.190) p < .05$ .

#### 4. DISCUSSION

The main objective of this study was to determine the level of social media addiction in DHH students, as well as, to examine the relationship between social media addiction and both symptoms of depression and generalized anxiety. The results revealed that more than 50% of DHH students have a level of addiction to social media Moderate. More than 25% have a severe level of addiction. In addition, as expected, the results showed a statistically significant positive relationship between social media addiction and both symptoms of depression and generalized anxiety. Linear regression analysis showed that generalized depression and anxiety significantly predicted social media addiction. This is confirmed by evidence from previous studies as well that there is a link between social media use and both depression and anxiety [3, 9]. In some recent studies, adolescents and young adults who spend the most time on social media have been shown to have a significantly higher rate of reported depression and anxiety than those who spend less time on social [11, 33-35]. So according to the results of the study, excessive use of social media caused depression and anxiety. This is what previous studies as well as the current study have shown. In trying to explain the dependence of students in the DHH community on technology and social media, we find that most individuals from DHH use social media to communicate with the rest of the world more than their hearing peers [36, 37]. A limited body of research has investigated DHH users' online activity, experiences, and use of social media. It was found that a lot of DHH face many challenges in making direct friends. Misunderstanding of their peers and impatience of their auditory counterparts are two of the biggest problems DHH

faces while making friends. This drives them to communicate through social media as an easy and quick way to make friends. In addition, there are many applications through which they enjoy games, watch videos, social exchanges, or browse the definition of friends [38].

In the same context, Mendelson, et al., [39] found that children with disabilities had significantly lower social status (the degree to which their peers liked or disliked someone), significantly fewer social contacts, less frequent interactions with friends, and fewer mutual friendships than their peers who usually develop. These children with disabilities reported higher levels of social support via social media (Kingery et al., 2011; Mendelson et al., 2016). Several studies have suggested that social media may exaggerate social norms, especially with regard to body image[40]. This may enable individuals who lack central coherence (i.e., limited ability to understand the context and derive meaning from a great deal of detail [41]. Some more literally exaggerated mental norms or perceptions of certain people or situations [42]. Furthermore, a recent critical review showed how social media use can provoke social comparison and envy, which may have negative mental health consequences [43]. Shoham and Heber [44] Found that the most common topics discussed online in DHH user blogs were the "technical aspects" of being deaf, such as education, access, and communication with people who hear. This study emphasizes the importance of online forums for DHH individuals in both social support and interaction and information sharing.

The results of the study also indicated a relationship between excessive social media use and symptoms of depression and generalized anxiety. Several studies suggest that there are many challenges that social media can cause, including depression and anxiety, loneliness, stress, insomnia, low self-esteem, social bonding, and other variables related to mental health issues [2, 3, 6, 10, 33, 34, 45, 46]. Almost all of these studies have found a positive correlation between internet addiction, depression, anxiety, and other mental health-related variables. From the above, it is clear that many previous studies have indicated a positive relationship between excessive social media use, social media addiction, and many psychological and behavioral disorders such as depression, anxiety, and stress. Especially among teenagers. Hence, the results of this study are related to previous studies. The link between social media addiction and mental health issues such as depression, anxiety, loneliness, and insomnia has been explored in many developed or even developing countries; however, it is very likely that this relationship has not been examined, especially among DHH students within Saudi Arabia. The results of the study confirm that social media addiction is positively associated with mental health problems regardless of geographic location, or in normal or DHH students. In other words, social media addiction is similarly associated with depression and anxiety in developed and least developed countries, and individuals with normal or disability.

## **5. CONCLUSIONS AND IMPLICATIONS**

In summary, the results revealed that DHH's level of social addiction and distraction was Moderate and Severe. In addition, the results revealed that social media addiction is positively associated with symptoms of generalized depression and anxiety among DHH students in southern Saudi Arabia. In other words, the higher the level of social media addiction DHH, the higher their level of depression and anxiety. Furthermore, linear regression analysis also shows that symptoms of depression and anxiety significantly predicted social media addiction. The current study also confirmed that social media addiction was positively associated with mental health problems without considering developed and less developed countries, normal students, or DHH students. The current study recommends future studies to investigate other aspects of problematic use of social media within Saudi Arabia, such as investigating the relationship between social media addiction and self-esteem, students' academic performance, sleep disorders, and several mental health variables.

### **Ethical considerations compliance with ethical guidelines**

Ethical permission was obtained from the Deanship of Scientific Research at Najran University (NU/RG/SEHRC/11/3). The participants were informed about the research's purpose and ensured anonymity and confidentiality of the information. A written informed, voluntary participation consent was obtained from each participant

## DISCLOSURE STATEMENT

The authors report no conflict of interest.

## AUTHOR CONTRIBUTIONS

Conceptualization: Mohammad Hammad and Huda Awed conceived of the presented idea. Mohammad Hammad developed the theory. Mohammad Hammad and Huda Awed verified the analytical methods. Huda Awed performed the calculations. Mohammad Hammad and Huda Awed Writing—review and editing. All authors discussed the results and contributed to the final manuscript.

## ACKNOWLEDGMENTS

Financial support from the Deanship of Scientific Research, Najran University, Saudi Arabia, NU/RG/SEHRC/11/3) is gratefully acknowledged

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DOI: <https://doi.org/10.15379/ijmst.v10i2.1245>

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