

Usages of Social Media and Symptoms of Attention Deficit Hyperactivity Disorder (ADHD): A Cross- Sectional Study

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Abstract

During the past 10 years the addictive use of advanced online technology such as social media has become an increasingly studied. The rapid development of social networking sites such as Facebook, what's app, Twitter, signal and so on has caused several major changes in the way of communication and interaction between the peoples. Previous studies demonstrated strong association between social media usages and symptoms of attention deficit hyperactivity disorder (ADHD). In the present study 300 youth (150 male and 150 female) ranging from 15- 34 years participated in cross sectional survey examining the association between demographic variables, symptoms of attention deficit hyperactivity disorder (ADHD) and social media usages. The measures used in the this study were socio demographic data sheet (especially designed for the study) to find the general information about youth, The Adult ADHD Self-Report Scale and The Bergen Social Media Addiction Scale (BSMAS). The results of this study demonstrate that the social media usages and ADHD were significantly associated. In demographic variables such as education and developmental ages were also significantly associated with social media usages. The Findings of the study suggest that high social media users were high degree of Attention deficit hyperactivity disorder (ADHD) in compare to average and low social media users respectively.

Keywords: Social media, Attention-deficit/hyperactivity disorder (ADHD).

Introduction

Social media refers to a computer operated technology that facilitates the sharing of thoughts, ideas and information by connecting with virtual platforms and communities. Social media has also become a prominent fixture in the lives of

individuals facing the challenges of psychiatric disorders. In the modern world individuals using social media in many different ways and for many different purposes and activities, whether it be updating their status on Facebook and Instagram with their friends, or tweeting a news story. In 2020, there are 3.81 billion

people actively using social media in all over the world, and this is an increase of 9.2% per year from 3.48 billion in 2019. Due to demographic variances India has large number of peoples using social media. On an average, Indians peoples spend 3 hr and 30 min daily using traditional media and 1 h and 29 min daily using social media, with the most of the time (76%) accessing social networking sites through smart phones. Keipo's analysis, states that the country with the most significant social media growth in 2019-2020 was India, with 130 million new users joining social networking sites. It is equivalent to 9.6% of total population of the country. Attention deficit hyperactivity disorder (ADHD) is a psychiatric disorder affecting children, adolescents, and adults all over the world. In ADHD, "there is a persistent pattern of inattention (not being able to keep focus or keep attention or follow instructions), hyperactivity (excess movement that is not fitting to the setting or feels restless) and impulsivity (hasty acts that occur at the moment without any thought), or both". The prevalence of ADHD in India has been reported to be 1.6–17.9% depending on the diagnostic criteria and the instruments used for assessment. It also varies from culture to culture and depending on the source of information on a patient's condition provided by the patient, parents, teacher, or specialist (Skounti et al., 2007). Based on previous studies, it is expected that there will be an association between social media usages and symptoms of Attention deficit hyperactive disorder (ADHD). It is expected that high social media users having a high degree of ADHD because such advanced

online technologies provide an ideal outlet for constant touching and fidgeting, and frequent shifts from activity to other activity when bored or feeling inattentive (American Psychiatric Association, 2013). Although anybody who has used social media irrespective of gender, age, and education can potentially develop an addictive or excessive use of social media. It is also expected that there will be an association between social media usages and some demographic variables.

Aim

The present study aims at empirically testing the association between social media usage and symptoms of ADHD, and also exploring the impact of socio-demographic status of social media users in a systematic way.

Objective

- To study the demographic variables of social media users.
- To study the relationship between social media usage and attention deficit hyperactive disorder (ADHD).

HYPOTHESIS

H1: Social media users will significantly differ with demographic variables such as Age, Gender, and Education.

H2: Attention deficit hyperactive disorder will significantly be associated with social media usages.

Method

Procedure

For this study, online modes of data collection were used. In online mode, Google form was created and an open-access link of a cross-sectional survey focusing on addictive behavior was shared

with participants. Participants were asked to click on the link to access the survey. Information about the study was also provided on the first page of the Google research questionnaire form and appropriate instruction was also given. Nointervention was conducted. No monetary incentive was provided.

Sample and Sample technique

The sample consists of 300 respondents with a mean age of 22.45 years ($SD = 4.67$), ranging from 15 to 34 years of age. This is divided into three age group, 15- 21 years ($n = 174$), 22- 28 years ($n = 83$) and 29- 34 years ($n = 43$) and the percentage value are 58%, 27.7% and 14.3% respectively. The sample comprised 150 males (50%) and females (50%). In terms of marital status, 32 (10.7%) were married and 268 (89.3%) single. A convenient sampling technique (Non-Probability sampling) was used for this study. This technique is also known as incidental sampling.

Instruments

The Bergen Social Media Addiction Scale (BSMAS)

The Bergen Social Media Addiction Scale (BSMAS) is an adaptive version of the Bergen Facebook Addiction Scale, it consists of six items reflecting core addiction elements. Each item is answered on a 5-point Likert scale ranging from very rarely (1) to very often (5); thus, yielding a composite score from 6 to 30, concerning experiences during the past year. The BFAS has been translated into several languages.

The adaptation (BSMAS) involves replacing the word Facebook with social media only, and social media is defined as "Facebook, Signal, Twitter, Instagram, and the like" in the instructions to participants. In the present study internal consistency of the BSMAS was good (Cronbach's $\alpha = .88$).

The Adult ADHD Self-Report Scale

The Adult ADHD Self-Report Scale contains 18 questions reflecting symptoms of ADHD in adults, and it is based on the DSM-IV criteria for ADHD (American Psychiatric Association, 1994). All items are answered on a 5-point Likert scale ranging from never (1) to very often (5), yielding a composite score from 18 to 90 (For example, "How often do you feel overly active and compelled to do things, like you were driven by a motor?" or "How often are you distracted by activity or noise around you?"). In the present study internal consistency of the Adult ADHD Self-Report Scale was good (Cronbach's $\alpha = .87$).

Data Analysis

Descriptive and inferential statistics were used for this study. Means, and standard deviations (SDs) were calculated. t-test and one-way ANOVA were calculated to assess the association between each pair of the study's variables. Preliminary analyses ensured that there was no violation of the assumptions.

Results**Table 1: The descriptive statistic of social media users.**

Statistic	Values	Standard Error
N	300	
Mean	16.60	
Standard Deviation	4.429	
Skewness	-.15	.14
Kurtosis	-.26	.28

Social media users are distributed with a mean score of 16.59 and the standard deviation is 4.43. The distribution is skewed at -.15 and kurtosis is -.26. It is seen that the skewness and the kurtosis of Social media users are low. That is, the sample is confirming the normal distribution.

Table 2: Social Media Users

	N	Percent
Low users	89	29.7
Average users	152	50.7
High users	59	19.7
Total	300	100.0

The above table shows that the frequency distribution of low, average, and high social media users are 89, 152, 59 and the

percentage values are 29.7%, 50.7%, 19.7% respectively. Its diagrammatically represented in below figure.

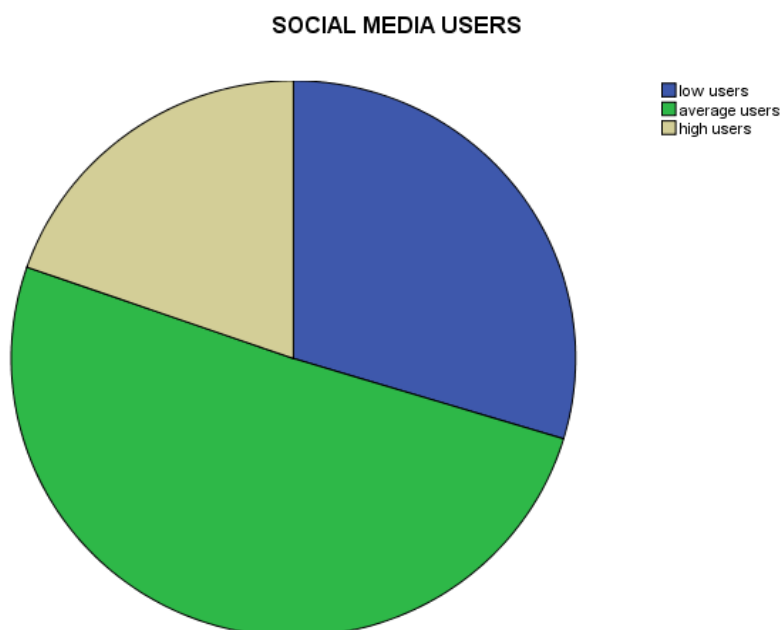


Table 3: Comparison of social media usages with gender.

Variable	Male (n= 150)		Female (n= 150)		t-value
	Mean	SD	Mean	SD	
Social Media Users	16.11	4.33	17.09	4.48	1.925*

*p < .05

There was a significant difference in social media users for male (M= 16.11, SD= 4.33) and female (M= 17.09, SD= 4.48): [t (298) = 1.925, p< 0.05] Based on the result hypothesis H1, “Male social media users

will significantly differ from female social media users” is accepted.

Table 4: Comparison of social media usages with developmental stages of youth.

Variable	15- 21 years (n=174)		22- 28 years (n= 83)		29- 34 years (n= 43)		F (2,297)
	Mean	SD	Mean	SD	Mean	SD	
Social media usages	17.28	4.39	15.51	4.28	15.93	4.39	5.227**

** p < .01

There was a significant difference in social media users for the three developmental stages [F (2, 297) = 5.227, p< 0.01] and the

mean score for 15- 21 years of youth ($M=17.28$, $SD=4.39$) was significantly different from the mean score of 22- 28 years of youth ($M=15.51$, $SD=4.28$) and was significantly different from the mean score of 29- 34 years of youth ($M=15.93$, $SD=4.39$). Based on the above result hypothesis H1, “Different age groups will significantly differ in their social media usages” is accepted.

Table 5: Comparison of social media usages with education.

	UG (n=178)		PG (n=85)		Professional (n=37)		F (2,297)
	Mean	SD	Mean	SD	Mean	SD	
Social media usages	17.19	4.43	15.55	4.51	16.13	3.79	4.254**

Note. UG: Under graduate, PG: Post graduate.

** $p < .01$

There was a significant difference in social media uses for the three educational levels of participants [$F(2,297) = 4.254$, $p < 0.01$] and the mean score of UG participants ($M=17.19$, $SD=4.43$) was significantly different than the mean score of PG participants ($M=15.55$, $SD=4.51$) and was significantly different from the mean score of professional participants ($M=16.13$, $SD=3.79$) based on above result hypothesis H1, “Different education level will significantly

differ in their social media usages” is accepted.

Table 6: Comparison of social media usages and ADHD.

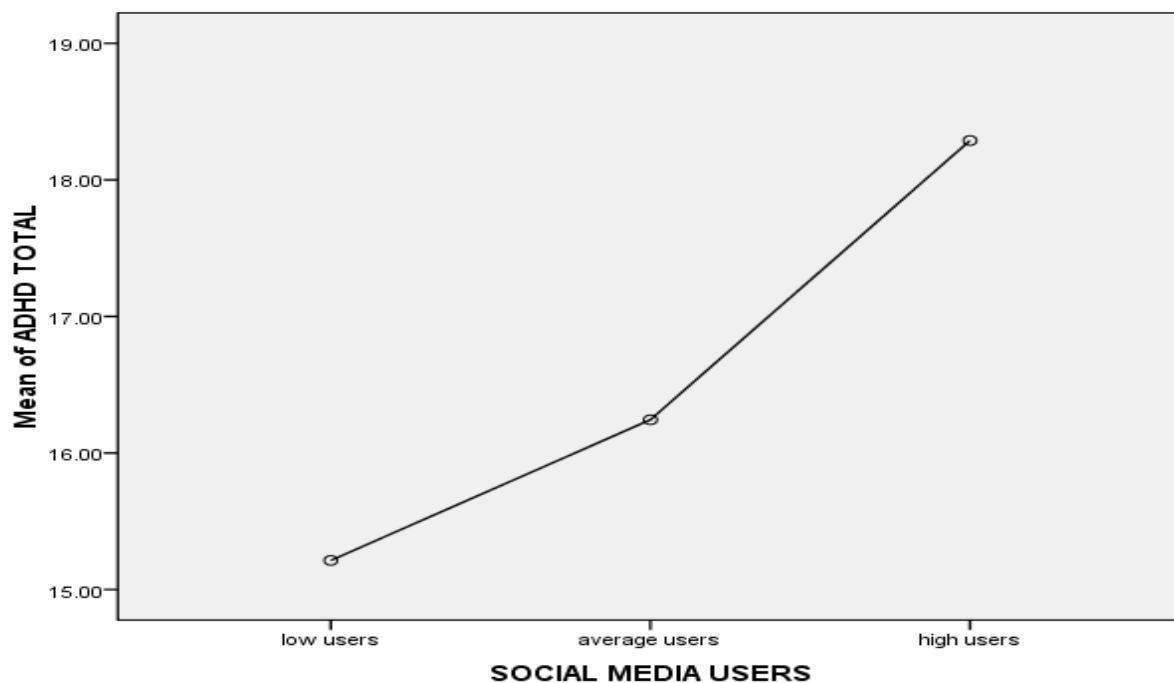
Variables	Low users (n=89)		Average users (n=152)		High users (n=59)		F (2,297)
	Mean	SD	Mean	SD	Mean	SD	
ADHD	15.21	3.18	16.24	3.19	18.29	4.09	14.770***

Note. ADHD: attention deficit hyperactivity disorder.

*** $p < .001$

There was a significant difference in ADHD for three levels of social media users usages [$F(2,297) = 14.770$, $p < .001$], and the mean score of low users ($M=15.21$, $SD=3.18$) was significantly different than the mean score of average users ($M=16.24$, $SD=3.19$) and was significantly different than the mean score of high users ($M=18.29$, $SD=4.09$) based on above result hypothesis H2, “Attention-deficit/hyperactivity disorder will significantly be associated with social media usages” is accepted. This is graphically represented in Figures 1

Figure 1: Mean plot between Social media usages and ADHD.



Discussion

The result in table 3 suggests that the male and female are significantly differ in social media usages. This result suggests that the female is more prone to social media in comparison to male because female frequently use social media for online shopping and chatting. (Ferguson, Coulson, & Barnett, 2011; Davenport, Houston, & Griffiths, 2012; Andreassen et al., 2013; Chiu et al., 2013; Maraz et al., 2015; van Deursen et al., 2015).

The result in table 4 suggests that the youth of 15- 21 years old have more social media users in comparison to 29- 34 years old youth and 22- 28 years old youth respectively because this age group peoples frequently use social media in education provides students with the ability to get

more useful information, to connect with learning groups and other educational systems that make education convenient, games, entertainment and other online activities such as online video conferencing, live television, etc.. (Venugopal, Vasudha, & Peter, Petlee, 2010; Renganayar, Chandra, 2010).

The result in table 5 suggests that the UG participants are more social media users in comparison to professionals and PG participants respectively because UG individuals more frequently use social media for education (eg- connecting the expert on topics, in the research process) as well as for public involvement (Shambare, R et al, 2012; Domizi, 2013).

The result in table 6 suggests that the high social media usages having a high degree of ADHD in comparison to average and low user respectively because

high users provide an ideal outlet for constant touching and fidgeting, and frequent shifts from one activity to other activity when bored or feeling inattentive these are the common ADHD behaviors (American Psychiatric Association, 2013). The present study also suggests that peoples are frequently checking their social networking site (as the activity is often accessed via smart phones) once vibrating or beeping their phones, for new information or updates because of the fear of missing out and that are easily distracted and impulsive to individuals to use social media excessively or compulsively (Zajdel et al., 2012; Zheng et al., 2014; Finlay & Furnell, 2014;).

Limitations

This is a cross-sectional study which's why we can not find any conclusion concerning causality in the significant association variables. The major limitation of this study was to consider the youth of age group of 15- 34 years old general population only as a sample and Participants who already diagnosed with ADHD were excluded. The present study only considers one psychiatric disorder such as ADHD and their association with social media usages but does not consider other psychiatric disorders and their association with social media usages. Due to the small sample size, we can not generalized. No intervention and follow-up were done of the participants.

Conclusion

The present study suggests that symptoms of Attention deficit hyperactive disorder (ADHD) are significantly associated with addictive or excessive social media usages.

Addictive use of social media was highly associated with being female, youngest individuals, and undergraduate individuals. The present study also suggests that Female, youngest individuals and undergraduate individuals were more prone to attention deficit hyperactivity disorder (ADHD).

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