

The Influence of Facebook Addiction on Depression among Preparatory Students in Addis Ababa

*Kelemu Zelalem Berhanu**

Department of Education, Institute of Education and Behavioral Science, Debre Markos University, Debre Markos, P.O.Box 269 Ethiopia.

*Corresponding Author: Email lkelemu@yahoo.com/kelemu_zelalem_berhanu@dmu.edu.et

Abstract

For the past few years Facebook is a widely used website among students for fulfilling their needs of interaction around the world. Recently, Facebook addiction was a new diagnosis added in the DSM-V and included in the Impulse-Control Disorders section due to the identified characteristics and the effects it has on an individual's life.. Thus, the basic aim of this study was to assess the influence of Facebook addiction on the depression level of preparatory students in Addis Ababa, Ethiopia. The design of the study was cross-sectional. The selected samples size was 305 students (30%) from a total of 1016 target population. The researcher used proportional systematic sampling techniques to determine the number of females and males. To analysis data, descriptive statistics, one sample t-test, independent sample t test, pearson correlation coefficient and hierarchical multiple regression were employed. After conducting confirmatory factor analysis with the LISREL8.7 program, as shown in the findings, student'facebook addiction level was significant and moderate. Also there were not significant differences in level of facebook addiction on the basis of basic socio-demographic characteristics except gender.The majority of students had minimal depression level . Pearson correlation also revealed that there was a positive relationship between the overall Bergen Facebook Addiction Scale (BFAS) and depression at a moderate level. The hierarchical multiple regression also showed 47% of the variance in depression level of students was explained by the grade level of students, mother's education level, marital status of the family, and being Facebook addictive. Thus being facebook addiction was found to be significant factor for students' depression.Thus it is essential that the relevant authorities should educate students about the mental health impacts linked with Facebook addictive usage.

Key Words: Facebook Addiction, Depression, Mental Health, Social Media

1. Introduction

Studying social media has grown rapidly, with the potential association of social media usage and mental health and well-being (Schønning, Hjetland, Aarø & Skogen 2020). Social networking site, Facebook, has become hugely popular in the last few years. As addiction to Facebook may be a specific form of internet addiction, and since the use of Facebook is increasing very rapidly, there is a need for a psychometrically sound procedure for assessing a possible addiction (Andreassen, Torsheim, Brunborg, & Pallesen, 2012).

Facebook is a publication for an organization and personal, usually a college or business, which may include profiles like names, birthdates, pictures and interests, serving the purpose of knowing each other better. There is a tradition in US, the name Facebook stemmed from the colloquial name for the book given to students at the start of the academic year by universities' administrations which was with intention of getting each student familiar with others (Facebook, 2011). Facebook here, however, is a social network site created in February 2004 and is operated and privately owned by Facebook, Inc. By 2010, Facebook is reported to have more than 500 million active users, generating more than 1.6 billion page views each day (Facebook, 2011). In

November 2006, Facebook's directories have been placed on more than 22,000 organizations (Wai Yu, 2011). Networks such as Facebook, Twitter, and MySpace are gaining in popularity and providing social outlets to an increasingly larger audience every day. It has been found that many people flock to these networks to socialize with their friends and acquaintances, to share information with interested others, and to see and be seen (Papacharissi, 2010). Worldwide statistics reveal a mind boggling six billion minutes spent on Facebook, almost twice the time spent on Google (Adamgilicirist, 2011). Young generation, mostly students, is the main subscribers of these users. Most of them use internet only for using Facebook (Rahman & Ahmed, 2018). After ten days, users of Facebook were increased by 6 folds, that means in 2020, Facebook became an integrated part of daily life, with an estimated 3 billion Facebook users worldwide adolescents and young adults in particular (Schønning, Hjetland, Aarø and Skogen 2020). According to Napoleoncat (2019) report, India has the Highest Number of Facebook Users with 416.6 million. There were 5,770, 600 Facebook users in Ethiopia in March 2019, which accounted for 4.8% of its entire population. From this, the majority were men - 69.1% and people aged 25 to 34 (Napoleoncat, 2019).

Facebook Dependent Disorder or facebook addiction was a new diagnosis added in the DSM-V and included in the Impulse-Control Disorders section due to the identified characteristics and the effects it has on an individual's life (Jessica, 2009). Facebook Dependence Disorder (FDD) includes several ways for an individual to meet the criteria for this diagnosis. Facebook usage begins casually with limited friends and interactions of checking it once or twice a day. The consequences of usage is minimal, but increases over a period of six months to be hours spent in inviting friends, searching friends, viewing photos, completing quizzes, learning the new Facebook homepage, and reading other's responses to each of the previous posted statuses. The experiencing of work performance, relational difficulties, and social dysfunction qualify the diagnosis of Facebook dependency disorder (Jessica, 2009). Studies have shown that social-network site use can lead variety of negative consequences such as decrease in real-life communities, worsening of academic performance, and relationship problems (Kuss & Griffiths, 2011). Ellison (2007) and Wai Yu, (2011) found that Facebook usage affects the formation and maintenance of social capital. It appears that the nature of the feedback from peers that is received on a person's Social networking

system (SNS) profile determines the effects of SNS usage on their wellbeing (Daria & Mark, 2011). Studies have shown that teenagers, who are heavy users of social networking websites, are prone to depression (Parth, 2011). However, other studies showed that the students who spent the most time on facebook were less likely to be depressed than those who spent just a few minutes a day on the site (Daily Mail Reporter, 2012). In adolescents, facebook addiction seems to occur equally between sexes and is seen as not completing chores, lowering school performance (Jessica, 2009).

Students who use the internet excessively had psychological problems like depression and loneliness (Heinrich & Gullone, 2006). According to Lou (2010), socially anxious individuals are more inclined to use Facebook in order to reduce their loneliness by relating lower levels of loneliness with Facebook usage. Problematic internet use (Facebook & twitter) is correlated to depression (Yen, Ko & Yen,2007; Young, & Rodgers,1998).Therefore based on different studies across the globe, it can be concluded that using Facebook as a part of moderate levels has beneficial outcome on people, however inordinate use of Facebook results in psychological problems such as depression.

There are many studies, which have shown that Facebook addiction is a condition associated with psychiatric disorders, such as affective disorders, depression. For example, 78% of German students who had Facebook or internet addiction disorder had major depressive disorders, and a correlation was found amongst Internet addiction, depression in South Korean adolescents (Weinstein & Lejoyeux, 2010). In addition, teenagers who had Facebook addiction also suffered from mental health problems (Yu & Shek, 2013). Kulkarni , Deshpande, (2019); Zaffar, Mahmood , Saleem, Zakaria (2015) and Hanprathet, Manwong , Khumsri , Yingyeun ,Phanasathit (2015) revealed that Facebook addiction showed positive correlation with depression in India, Pakistan and Thai students respectively. Feinstein, Bhatia, Hershenberg, and Davila (2012) also found the use of social networking sites can aggravate the symptoms of depression and anxiety among young adults over a period of 3 weeks. Inconsistently with the findings of Feinstein, Bhatia, Hershenberg, and Davila (2012), other researchers found there was no significant relationship between participants' duration of online social media use per day and levels of depression (Pantic, Todorovic, Bojovic-Jovic, and Pantic 2012). Furthermore, a descriptive-correlational research design on selected adolescents found

that there is no significant association between college students' level of depression and the use of Facebook. Thus, depression cannot be sufficiently linked to the use of Facebook (Datu, Valdez, & Datu 2012; Jelenchick, Eickhoff, & Moreno 2012).

Facebook addiction seems to occur more in women two to one compared to males. These women tend to be in contact with distant friends from high school, college, and family. These women and men may become irritable and cranky if they are interrupted and they typically exceed reasonable time spent on Facebook. This stage may be due to learning technology, but typically, it is due to "being nosy" and wanting to learn about others (Jessica, 2009).

In recent years, from the researchers' observation, most Adolescents in Ethiopian use their mobile for chatting Facebook friends, posting irrelevant information than enhancing their academic performance. Moreover, this may leads them to have facebook addiction. In turn, this dependence disorder can be associated with depression, low self-esteem, inadequate social skills, substance dependence, and bi-polar. These are consistent with research supporting the comorbidity of facebook addiction and other mental health diagnosis (Hanprathet et al. 2015; Jessica, 2009; Rosen et al., 2013). Cognizant of the

above facts, the researcher also motivated to examine to investigate Facebook addition level and students' emotional states of depression in students.

Statement of Problem

Facebook plays a major role in connecting people at distance affect the emotional states of the people (Labrague, 2014; Fedigan, 2018 and Maldonado, 2018). Yin et al. (2019) stated that the individuals' post lots of diverse things such political ideas, photos, videos by utilizing Facebook. These Facebook posts bring the positive feelings for a few people, but it affects the positive feelings of some other Facebook users. These studies focus on the general impact of Facebook use but they failed to touch the variables that increase negative feelings. Facebook gives an opportunity for capturing negative emotional states that are compatible with an individual's emotion. The passionate expression within the overhauls and social media postings may show the sentiments of uselessness; pity, powerlessness, and self-hatred that demonstrative of depression. Different researchers on the area showed that Facebook users compared themselves to their peers. This leads to experience depression, as well as compulsive checking behaviors, such as observing posted content and companion recorded (Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). Moreover, Hampton,

Rainie, Lu, Shin and Purcell (2014) found that Facebook usage used as an indicator of upsetting in others' lives for both men and women. The more Facebook friends' individuals have the more as often as possible they like other users' content, the more major occasions they are mindful of inside their network of contacts. Most of the literatures about Facebook showed that Facebook use is associated with increment of depression, anxiety, and stress (Davila, 2012; Feinstein, Bhatia, Hershenberg, and Davila , 2012; Hanprathet et al. ,2015; Marino, Gini,,Vieno & Spada, 2018; Rosen et al. 2013; Yen, Ko & Yen,2007; Young, & Rodgers,1998).On contradictory, other researchers found there was no significant relationship between participants' facebook use and levels of depression (Datu, Valdez, & Datu 2012; Jelenchick, Eickhoff, and Moreno 2012; Pantic, Todorovic, Bojovic-Jovic, and Pantic 2012). Depression cannot be sufficiently linked to the use of Facebook. The above Mentioned studies concerning cross-sectional and longitudinal associations between facebook addiction and depression have provided inconsistent results. Therefore, it needs further confirmation study. Furthermore, in recent years, from the researcher's observation, most adolescents in Ethiopia use their mobile for chatting on Facebook channel with friends than using to

enhance their academic performance. Moreover, this leads them to have facebook addiction. To the opposite, the country is in need of healthier and educated citizens at large. Nevertheless, in Ethiopia in general and in Addis Ababa in particular, there have not been any relevant studies about the psychological impacts of Facebook usage among adolescents. Thus, to fill the gaps, the researcher interested to conduct study on the influence of facebook addiction on students' depression.

The basic questions that the researcher addressed were stated as follows:

1. What is prevalence rate of facebook addiction among students?
2. Are there significant differences in level of facebook addiction on the basis of basic socio-demographic characteristics?
3. What is the prevalence rate of depression among students?
4. How well facebook addiction can predict depression in students?

Objectives of the study

The general objective of the study was to investigate the influence of facebook addiction on depression level of students.

Specific objectives are identified as follows:

1. To assess prevalence rate of facebook

addiction among students

2. To see whether there were significant differences in level of facebook addiction on the basis of basic socio-demographic characteristics
3. To assess prevalence rate of depression among students
4. To predict the students' depression from being facebook addictive

2. Methods

This part of the study contains study design, study area, sample size and sample techniques, data collection instruments, procedures and data analysis methods.

Study Design

The study was mainly quantitative in nature and a cross-sectional design was employed since the researcher collected the data at one point in time from many different students. Cross-sectional study design is also allows researcher to compare many different variables at the same time.

Study Area

The study was conducted in addis Ababa on grade 11th and 12th students of Miskaye Hizunan Medhanealem and Kidist Selalssie Schools, Addis Ababa, Ethiopia. Currently the schools comprise from kindergarten to preparatory classess. The researcher selected these schools since there were high complaints from teachers and parents' side for students'

excessive usage of facebook.

Sample Size and Sampling Techniques

All grade 11th and 12th students of Miskaye Hizunan Medhanealem and Kidist Selalssie Schools, (N=1016) was the target of the study population. According to Yalew Endawok (1998) among the total population, 10-30% can fulfill the sample sizes. Due to this, the researcher believed 30% of the total sample was an adequate number to generalize the finding, which in turn, 305 samples were selected. After students are stratified in their groups (sections), the researcher proportionally determined the number of female and male students. And, then the required sample size of the study subjects was selected by using simple random sampling technique.

Data Collection Instruments

Bergen Facebook Addiction Scale (BFAS)

Andreassen, Torsheim, Brunborg, & Pallesen (2012) have developed the Bergen Facebook Addiction Scale (BFAS), a pool of 18 items, reflecting each of the six core elements of facebook addiction (salience, mood modification, tolerance, withdrawal, conflict, and relapse). The factor structure of the scale was good (RMSEA= .046, CFI = .99) and coefficient alpha was .83. The 3-week test-retest reliability coefficient was .82. At the Bergen Facebook Addiction Scale all items are

scored on the scale of: (1) Very rarely, (2) Rarely, (3) Sometimes, (4) Often, and (5) Very often. Here is a sample item; "You spend a lot of time thinking about Face book or plan use of Face book". In this sample, Cronbach alpha the total dimensions of facebook addiction scale was .904. In order to know the fitness of the instrument with this study, the researcher conducted confirmatory factor analysis (CFA) with LISREL8.7 program. The confirmatory factor analysis (CFA) showed, the fit indices $\chi^2 / sd = 140.2$; RMSEA = .08; GFI = .90; AGFI = .86; CFI = .91; and RMR = .036. All values obtained were good or acceptable as the criterion determined by Schermelleh-Engel, Moosbrugger & Müller (2003).

Beck Depression Inventory (BDI-II)

The BDI-II is a 21-item measure developed by Aron T. Beck in 1994. It was designed to assess DSM- IV defined symptoms of depression such as sadness, guilt, lost of interest, social withdrawal and suicidal ideation. Nineteen of the items are assessed on a 4-point scale according to increasing severity, with a further 2 items allowing the respondent to indicate increase or decrease in sleep or appetite (distinguishing it from the Beck Depression Inventory-IA, which did not assess atypical depressive symptoms). Items are scored on a 0–3 scale, yielding a score

range of 0–63 where higher scores indicate greater depression severity. According to Beck et al. (1996), scores in the range of 0–13 indicate minimal depression, 14–19 mild depression, 20–28 moderate depression, and 29–63 severe depression (Raymond, Erin, & Richard 2005). A number of studies have now documented that the BDI-II exhibits high internal consistency. The average coefficient alpha was .91 (range $_$.89 to .94). The convergent and divergent validity of the BDI-II also appears to be well supported. The BDI-II correlates significantly with other indices of depression and depression-related constructs, including the BDI-IA (r $_$.93); the Hamilton Rating Scale for Depression (r $_$.71), and the BHS (r $_$.68) (Beck et al., as cited in Mark & Daniel 2004). Cronbach alpha the Beck Depression Inventory (BDI-II) in this study was .88.

Data Analysis

After data collection, a statistical package such as SPSS (version 20) was used to analyze the data that were quantified using statistical tools such as descriptive statistics, one sample t-test, independent sample t test, pearson correelation coefficient and hierarchical multiple regression. An independent sample T-test was employed to see the significance difference in facebook

addiction between male and female students. A pearson correelation coefficient was used to show the association between facebook addiction and depression. Hierarchical multiple regression was used to examine the main and interaction effects of the demographic characteristics of the participants and facebook addiction scale on depression.

Ethics Statement

Author declares that all information has been obtained and presented in accordance with academic rules and ethical conduct. This study has been complied with board name of Addis Ababa University Scientific Research and Publication Ethics Committee. Also, required permissions to use the instruments have been got from previous researchers. Author informed the participants about the purpose and process of the research. Participants were informed that their names and institution names would be kept confidential and their privacy rights were protected. Participants were included in the process on a voluntary basis.

3. Results

This part of the study includes the results and interpretation of data obtained from 300 students of Miskaye Hizun an Medhanealem and Kidist Selassie Schools. Five students were excluded from analysis since they didnt complete the questionnaire.

Table 1. Level of facebook addiction of students Test value = 3

N0.	Variable	N	Mean	SD	t-test	Sig
1	Facebook addiction level	300	2.75	.82	-3.60	0.007

The researcher had taken hypothesized test value 3 was to show fifty percent probability i.e. Somewhat agree. So the value of t-calculated is higher than the t-critical value. Therefore, students' level of facebook addiction was significant at $t = -3.600$, $p < 0.05$. In addition, according to Ebtesam's (2021) and Syahrina Hayati's (2011) interpretation of likert scale ($\bar{x} \geq 3.68$ High, $2.34 \leq \bar{x} < 3.67$ Moderate, $\bar{x} < 2.34$ Low; this is come from to formula that $5 - 1/3 = 1.33$), the overall level of facebook addiction was moderate as it was shown in the above table 1, the overall mean level of facebook addiction was 2.75 and st deviation =.82. From this we can

understand level of students' facebook addiction was moderate and needs some psychological intervention and support to relieve from it.

Difference in the Level of Facebook Addiction across respondents' general background

Independent sample t –test on the facebook Addiction scale across respondents' age, grade level, marital status of the family, father and mother's occupation, father and mother's occupation were conducted. All showed that the facebook addiction scale is not significant different except gender.

Table 2. Facebook Addiction Score between Males and Females Students

	Options	N	Mean	Std. Dev	T	df	P
Gender	Male	120	3.0650	.89390	2.331	79.738	.022
	Female	180	2.6614	.81287			

As shown in table 2, the facebook addiction mean score of males (mean=3, 0650, standard deviation=, 89390) is significantly different ($t=2.331$, $d.f=79.738$, $p < 0.05$) from the facebook addiction mean score of females

(mean=2.6614, standard deviation=.81287). That means males are more than females in the usage of facebook. Therefore, there is a gender difference in the facebook addiction scale.

3. Depression level of students

Table 3. Participant in Relation to Their Depression Level

	N	%
Depress Minimal	123	40.4
ion Mild	44	14.4

level	Moderate	70	23.1
	Severe	63	20.2
	Total	300	98.1

As it can be seen from in table 3, from the total sample students, majority of students 70(23.1%) students had severe, mild, 123 (40.4%) had minimal depression level moderate depression level respectively. and the rest 63(20.2%), 44(14.4%),

3. Correlation between facebook addiction and depression.

Table 4. Inter-Correlation Coefficients between Six Dimesions of Bergen Facebook Addiction scores (BFAS) and Beck Depression Inventory (BDI-II) score

Variables	1	2	3	4	5	6	8
Salince							
Tolerance	.668**						
Modification	.708**	.578**					
Relapse	.717**	.590**	.719**				
Withdrawal	.604**	.613**	.602**	.700**			
Conflict	.574**	.510**	.571**	.575**	.52**		
Depression score	.406**	.441**	.462**	.463**	.358**	.370**	

** . Correlation is significant at the 0.01 level (2-tailed).

As it shown in table 4, the pearson product-moment correlation coefficients between six dimesions of facebook addiction and the Beck Depression Inventory (BDI-II) scale were ranges from $r=.370$ to $r=0.719$, $p<0.01$. This result indicated that there is statistically positive relationship between all dimesions of Bergen Facebook Addiction score (BFAS) and

the Beck Depression Inventory (BDI-II) score from lower to strong level. That means as the facebook usuage level increases; students' depression level also increases at moderate level. This is good correlation for doing multiple regressions (Hair, Anderson, & Black, 1998).

Table 5. Inter-Correlation Coefficients between Overall Bergen Facebook Addiction score (BFAS) and Beck Depression Inventory (BDI-II) score

Variables	1	2
Beck Depression Inventory (BDI-II) scale		.503**
Bergen Facebook Addiction scale (BFAS)		

** . Correlation is significant at the 0.01 level (2-tailed).

As showed in table 5, the pearson product-moment correlation coefficients between the overall BFAS and BDI-II scale was $r=0.503$, $p<0.01$. This result indicated that there is statistically positive relationship between BFAS and BDI-II scale at moderate level. That means as the facebook addiction level increases; students' depression level also

increases at moderate level. This is good correlation for doing multiple regressions (Hair, Anderson, & Black, 1998).

4. Predicting scores on depression from facebook addiction score

Table 6. Summary of Hierarchica Regression Analysis for Variables Predicting Scores on Beck Depression Inventory (BDI-II) (N=300).

Predictors	Model 1(Beta)	Model 2(Beta)
Grade level	.482**	
marital status of the family	.251*	
Mother's education level	.184*	
Bergen Facebook Addiction scale (BFAS)		.289**
R square	.457	.517
Adjusted R square	.409	.468
Change R	.457	.06
F-value	9.466	10.379
Durbin-Watson	1.998	

* $p<0.05$, ** $p<0.01$

As shown in table 6, the hierarchical multiple regression was used to examine the main and interaction effects of the demographic characteristics of the participants and facebook

addiction scale on depression. These risk factors were categorized into groups based on their similarity in characteristics. The demographic variables were entered as control

variables on the first step. Facebook addiction scale was entered as the second group on second step. The beta weights, presented in table 6, suggest that grade level of students, mother's education level, marital status of the family and being facebook addiction were contribute to this prediction. The Adjusted R squared value for the first entry was .41. This indicates that 41% of the variance in depression level of students was explained by the grade level of students, mother's education level, and marital status of the family (the first Model). These variables were significant predictor of depression, $F(8, 290) = 9.466$, $p=0.00$; however, the model with addition of the other predictor variable is a better model for predicting depression level of students, $F(9, 289) = 10.379$, $p=0.00$. The Model 2 is better than Model 1 by the increase in adjusted R^2 value from $R^2 = .409$ to an $R^2 = .468$, $F = 11.037$, $p=0.01$. Here the changed R^2 was .06. As a result, 47% of the variance in depression level of students was explained by the grade level of students, mother's education level, marital status of the family, and being facebook addiction. According to Cohen (1988), this is a large effect.

Discussion

The purpose of this study was to investigate the influence of facebook addiction on depression level of students. This paper found

that gender difference on facebook addiction level, but didn't on other background information. This finding is congruent with the study (The Pew Internet Project, 2005). However, in contrast with present finding, Al Mamun & Griffiths (2018) found that there was no statistically significant gender difference between males and females in relation to Facebook addiction (based on chi-square). Inconsistency with this study, Jessica (2009) found that younger women are more likely than younger men to be online and facebook addiction seems to occur more in women two to one compared to males; Andreassen et al. (2016), also revealed being female was significantly associated with addictive use of social media in a large-scale Norwegian study of over 23,000 participants. As it was presented in result section, the findings of this study show that there is a positive relationship between depression score and facebook addiction score. This finding shows that students who more facebook addicted are more likely to be depressed than those who were less addictive. This finding of research is consistent with other studies (Parth, 2011) who reported that the greater time users spend on the site, the higher the chances that they will lose control over their urge to log in. However, this finding is inconsistent with the findings of the researcher, like Grohol as cited

in Daily Mail Reporter (2012) and Jelenchick (2013) who pointed out that there was no relationship between facebook use and depression. The present study congruent with Heinrich & Gullone (2006); Lou (2010) as they reported students who use the internet excessively had psychological problems like depression. Similarly, previous researches also supported the comorbidity of facebook addiction and mental health diagnosis (Hanprathet et al. 2015; Jessica, 2009; Rosen et al., 2013). The present study is also consistent with the findings of Yen, Ko & Yen (2007) and Young, & Rodgers (1998) who reported that problematic internet use (Facebook & twitter mostly used) is correlated to depression; findings of Hanprathet et al. (2015) and Rosen et al. (2013) who found Facebook usage predicted general mental health status, particularly major depressive disorders. In line with the present study, Feinstein, Bhatia, Hershenberg, and Davila (2012); Marino, Gini, Vieno & Spada (2018) found that the use of Facebook can aggravate the symptoms of depression among young adults. Inconsistently with the findings of the present study, other researchers found there was no significant relationship between participants' duration of online social media use per day and levels of depression (Datu, Valdez, & Datu 2012; Jelenchick, Eickhoff,

and Moreno 2012; Pantic, Todorovic, Bojovic-Jovic, and Pantic 2012). depression cannot be sufficiently linked to the use of Facebook.

Conclusion, Implications and Recommendations

The main purpose of the study was to analyze the prevalence rate of Facebook dependency disorder and its association with depression. The present study revealed there was a difference across gender in the prevalence of Facebook addiction. In addition, there was a positive relationship between the overall Bergen Facebook Addiction Scale (BFAS) and depression at a moderate level. The hierarchical multiple regression also showed 47% of the variance in depression level of students was explained by the grade level of students, mother's education level, marital status of the family, and being Facebook addictive. This study also showed that student's level of facebook addiction influence their level depression. So, students who had addicted to facebook were more likely they depressed

This study will be believed to have many implications or significance by giving more explanations about the prevalence rate of Facebook addiction across students' background information and its association with depression. In addition researcher observed that majority of students have symptoms of moderate Facebook addiction. In

this regard, the cross-sectional study among students could have significant policy implications in the future. This study may be helpful for researchers, policy-makers, academicians, and other stakeholders in formulating guiding principles in education and other sectors. School is widely considered a significant component of sustainable human resource development. In a developing country like Ethiopia, sustainable human growth will slow down because of the negative effects of Facebook use among students. Thus behavioral, psychological, and mental treatments should be considered to reduce Facebook addiction and its consequences among students. To manage social media content, strict policies are required, and the government may take effective actions by moderating the timing or duration of Facebook media. Furthermore students must do the following to change and improve their distorted thoughts about themselves and their depression level: first, they should focus on and honest with their goals, substitute facebook with other interested activities. Second, they should get therapy or counseling services, which help those suffering from depression and help a sense of self to ensure a more fulfilling life. The school and teachers should employ schools' curricular and non-curricular channels could hope to have

maximum effects on the reduction of the occurrence of facebook addiction level. Generally it is essential that the relevant authorities educate students about the mental health impacts linked with Facebook addictive usage.

Disclosure

The author declare that they have no competing interests in this work.

Data Availability Statement

All the data supporting the study findings are within the manuscript. Raw data are available from the corresponding author on reasonable request.

References

- Al Mamun, M.A. & Griffiths, M.D. (2018). The association between Facebook addiction and depression: A pilot survey study among Bangladeshi students. *Psychiatry Research*, in press.
- Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study. *Psychology of Addictive Behaviors*, 30(2), 252-262.
- Andreassen, C.S., Torsheim, T., Brunborg,

- G.S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports*, 110, 2, 501-517. DOI: 10.2466/02.09.18.PR0.110.2.501-517
- Calancie, O., Ewing, L., Narducci, L. D., Horgan, S., & Khalid-Khan, S. (2017). Exploring how social networking sites impact youth with anxiety: A qualitative study of Facebook stressors among adolescents with an anxiety disorder diagnosis. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(4).<https://doi.org/10.5817/CP2017-4-2>
- Daily Mail Reporter. (2012). New study disputes link between Facebook and depression. Retrieved on 31 December 30 2020 from: <http://www.dailymail.co.uk/news/article-2171745/New-study-disputes-link-Facebook-depression.html>.
- Daria J. K & Mark, D. G. (2011). Excessive online social networking: Can adolescents become addicted to Facebook? *Nottingham Trent University*, 29, 4. <https://sheu.org.uk/sheux /EH/eh294mg.pdf>
- Datu, J., Valdez, J., & Datu, N. (2012). Does Facebooking make us sad? Hunting relationship between Facebook use and depression among Filipino adolescents. *International Journal of Research Studies in Educational Technology*, 1,2, 83-91. DOI: 10.5861/ijrset.2012.202
- Ebtesam, R. (2021). Re: How to classify the mean of five point likert scale questionnaires as low, medium and high?. Retrieved on 30 December 2021 from: https://www.researchgate.net/post/How_to_classify_the_mean_of_five_point_likert_scale_questionnaires_as_low_medium_and_high/60d9afc460d2be7cb707782b/citation/download.
- Ellison NB, Steinfield C, & Lampe C. (2007). The benefits of Facebook Friends: Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12,4, 1143–1168. <https://doi.org/10.1111/j.1083-6101.2007.00367.x>
- Fedigan, E. (2018). Investigating the impact of social networking on mental health. The effects of Facebook intensity on overall depression, anxiety and stress. Dublin Business School. Retrieved January 13, 2020 from

- <https://www.dbs.ie/docs/default-source/default-document-library/1st-ba-ft-eoin-fedigan.pdf>
- Feinstein, B. A., Bhatia, V., Hershenberg, R., & Davila, J. (2012). Another venue for problematic interpersonal behavior: The effects of depressive and anxious symptoms on social networking experiences. *Journal of Social and Clinical Psychology*, 31, 4, 356-382.
- <https://doi.org/10.1521/jscp.2012.31.4.356>
- Hampton, K.N., Rainie, L., Lu, W., Shin, I., & Purcell, K. (2014). Social Media and the Cost of Caring. Washington, DC: Pew Research Center. Retrieved on March 13, 2020 from <http://www.pewinternet.org/2015/01/15/social-media-and-stress>
- Hanprathet, N., Manwong, M., Khumsri, J., Yingyeun, R., Phanasathit, M. (2015). Facebook addiction and its relationship with mental health among Thai high school students. *Journal of the Medical Association of Thailand*, 98,3, 81-90. <http://www.jmatonline.com>
- Hair, J.F., Anderson, R.E., Tatham, R. L., & Black, W.C. (1998). *Multivariate Data Analysis*. New Jersey.: Pearson Education
- Heinrich, L. A., & Gullone, E (2006). The clinical significance of loneliness: A literature review. *Clinical Psychology Review*, 26, 695–718.
- Jelenchick, L. A., Eickhoff, J. C., & Moreno, M. A. (2013). “Facebook depression?” Social networking site use and depression in older adolescents. *Journal of Adolescent Health*, 52, 128-130. <http://dx.doi.org/10.1016/j.jadohealth.2012.05.008>
- Kulkarni, R. , Anuja Deshpande, A.(2019). Relationship between Facebook Addiction, Depression and Shyness among college students in Mumbai. *Indian Journal of Mental Health*, 6(2),157-164.
- Labrague, L. J. (2014). Facebook use and adolescents' emotional states of depression, anxiety, and stress. *Health Science Journal*, 8(2) , 80-89.DOI: 10.4236/ojd.2014.31005
- Lou, L.(2010). Loneliness, friendship, and self-esteem: first-year college students' experience of using Facebook. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 70, 79-102.
- Maldonado, M. (2018).The anxiety of Facebook. Psych central. Retrieved on

- November 12, 2021
 from <https://psychcentral.com/lib/the-anxiety-of-facebook>
- Marino,C., Gini,G. , Vieno,A. & Spada,M.(2018). The associations between problematic Facebook use, psychological distress and well-being among adolescents and young adults: A systematic review and meta-analysis.*Journal of Affect Disorders*, 226, 274-281.DOI: 10.1016/j.jad.2017.10.007
- NapoleonCat (2019). Facebook users in Ethiopia. Retrieved from Facebook users in Ethiopia - February 2021 | NapoleonCat
- Kuss, D. J., & Griffiths, M. D. (2011).Addiction to social networks on the Internet: A literature review of empirical research. *International Journal of Environmental and Public Health*, 8,3528-3552.
- Pantic, I., Damjanovic, A., Todorovic, J., Topalovic, D., Bojovic-Jovic, D., Ristic, S., & Pantic, S. (2012). Association between online social networking and depression in high school students: Behavioral physiology viewpoint. *Psychiatria Danubina*, 24(1), 90–93.
- Parth Shastri . (2011). 'Facebook addiction causes anxiety, depression in youngsters'. Retrived on 31 December 2020 from:http://articles.timesofindia.indiatimes.com/2011-0124/ahmedabad/28366239_1_social-
- Schermelleh-Engel, K., Moosbrugger, H., and Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness of fit measures. *Method of Psychological Research Online*, 8(2), 23-74.
- Schønning V, Hjetland GJ, Aarø LE, Skogen JC, (2020). Social media use and mental health and well-being among adolescents- a scoping review. *Front Psychol*, 11,1949. Doi:10.3389/fpsyg .2020.01949.
- Syahrina Hayati, M. J. (2011). The relationship between emotional intelligence and teaching effectiveness among lecturers at Universiti Teknologi MARA, Puncak Alam, Selangor (Master Thesis). Selangor: Universiti Teknologi MARA.
- The Pew Internet Project, (2005). Internet & Technology. Retrieved from <http://www.pewinternet.org>
- Rahman, M. And Ahmed, O. (2019). Facebook use, facebook addiction, and mental health of chittagong university students.*Bulgarian*

- Journal of Science and Education Policy*, 12(2), 92-108.
- Rosen, L. D., Mark Carrier, L., & Cheever, N. A. (2013). Face-book and texting made me do it: Media-induced task-switching while studying. *Computers in Human Behavior*, 29, 948-958.
<http://dx.doi.org/10.1016/j.chb.2012.12.001>
- Weinstein A, Lejoyeux M. Internet addiction or excessive internet use. *Am J Drug Alcohol Abuse* 2010; 36: 277-83.
- Yalew Endaweke Mulu.(1998). *Fundamental Principles of Research and its Implementation*. Bahir Dar: Alpha printing enterprise.
- Yen, J., Ko, C., & Yen, C.(2007).The comorbid psychiatric symptoms of internet addiction: Attention deficit and hyperactivity disorder (ADHD), depression, social phobia, and hostility. *Journal of Adolescent Health*, 41,93-8.
- Yin, P., Mahamood, A. F., Ahmad, N., Ramli, A. J., Mokhdzar, Z., Haris, I. I., & Ali, E. (2019). Facebook content analysis: Post affected user emotion. School of Human Development and Techno communication University Malaysia Perlis. *Journal of Humanities, Language, Culture and Business*, 3(12), 38-50
- Young, K. S., & Rodgers, R.(1998).The relationship between depression and internet addiction, *Cyber Psychology & Behavior*, 1, 25–28.
- Yu, L, Shek ,DT.(2013). Internet addiction in Hong Kong adolescents: a three-year longitudinal study. *J Pediatr Adolesc Gynecol*, 26 (3), S10-7.
- Zaffar, M, Mahmood ,S. , Saleem, M., Zakaria, E.(2015) Facebook addiction: Relation with depression, anxiety, loneliness and academic performance of Pakistani students. *Sci.Int.(Lahore)*,27(3),2469-2475