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**SCHOOL OF PSYCHOLOGY**

**COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES**

**FACEBOOK USE AND STUDENTS' EMOTIONAL STATES  
OF DEPRESSION, ANXIETY, AND STRESS IN SELECTED  
POLYTECHNIC COLLEGES OF ADDIS ABABA**

BY

**Animut Kelkay Ayenew**

A Thesis Submitted to the School of Psychology, Addis Ababa  
University in Partial Fulfillment of the Requirements for the Degree of  
Master of Arts in Counseling Psychology

**March, 2021**

**Addis Ababa, Ethiopia**

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**This is to certify that the thesis prepared by Animut Kelkay Ayenew entitled "Facebook use and Students' emotional states of depression, anxiety, and stress in selected polytechnic colleges of Addis Ababa" complies with the rule and regulations of the university and meets the accepted standards with respected to originality and quality.**

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## Abstract

*Most of recent researchers found that Facebook use is related to students' emotional states of depression, anxiety and stress. The objective of study was to investigate the relationship of using Facebook on students' emotional states of depression, anxiety, and stress. A research design of descriptive correlational was used to investigate this research. And also linear regression and multivariate tests used to analysis the data. Cross-sectional research was selected from time perspective. The population of this study was 360 students who attend their education in 2020 academic calendar at the 3/three/ (General Wingate, Tegibard, and Entoto) Polytechnic colleges of Addis Ababa. The instrument of this study was standardized instruments i.e. Facebook Intensity Scale, and Depression, Anxiety and Stress (DASS-42/ scales. The data was collected in December first 2020. Correlation coefficients indicated that Facebook use and emotional states of depression( $r=0.155$ ,  $P=0.03$ ), anxiety( $r=0.138$ ,  $P=0.009$ ) and stress ( $r=0.110$ ,  $P= 0.038$ ) had a significant relationship. Time spent on Facebook correlated significantly with depression ( $r=0.162$ ,  $P =0.002$ ) and Anxiety ( $r =0.145$ ,  $P=0.006$ ). Number of Facebook friends and emotional states of depression, anxiety and stress did not have any significant relationship. The three emotional states/ depression, anxiety and stress/ had a significant relationship. Linear regression coefficients (Beta) showed that there was a significant relationship between Facebook intensity, and emotional states of depression, anxiety and stress. Moreover, the result showed that there is significant evidence that relationship exists between Facebook intensity, and depression, anxiety and stress. There was no gender difference statistically found on time spent on Facebook and prevalence of depression, anxiety and stress. From the data collected and analyzed conclusions have been drawn.*

**Key words: Facebook, Facebook Intensity Scale, Depression, Anxiety and stress and Depression, Anxiety and Stress scales (DASS-42)**

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**ABBREVIATION**

EDU	Education
SMN <sub>s</sub>	Social Media Networks
DASS	Depression, Anxiety and Stress Scale
FIS	Facebook Intensity Scale
SN <sub>s</sub>	Social Networks
FoMo	Fear of Missing out
FB	Facebook

## **CHAPTER ONE**

### **INTRODUCTION**

This chapter consisted of background of the study, statement of the problem, basic research questions, and objective of the study, significance of the study, scope of the study and definition of important terms.

#### **1.1. Background of the study**

Facebook is the largely utilized social media network on the internet, by taking consideration the numbers of Facebook users and name recognition (Maina, 2018). Facebook was born in 2004. It capable people all over the world to connect, communicate, build up and sustain fellowships. It is the cost effective mechanism and way of expressing compels and also named as the world's most well-liked social network (Labrague, 2014).

Trepte, Reinecke, and Juechems's study, conducted in 2012 (as cited in Zaki, Sayed & Elattar, 2018), stated that Facebook is the most recognizable social networking websites among students, and it played vital portion of their life action (Zaremohzzabieh, Omar, Bolong, Samah, & Kamarudin, as cited in Jakobsdottir, 2016). Of 550 populations, 57% used Facebook on a day to day basis and the average time they were spent per day actively using Facebook was 107.95 minutes (Marshall, Lefringhausen & Ferenczi, as cited in Jakobsdottir, 2016).

According to Facebook users' information report of Ethiopia (December 2019) based on sex & age statistics data indicated that between 13-17 age Men 3500 and women 2500; 18-24 age Men 650,000 and women 380,000; and 25-34 age Men 2600, 000 and women 1200, 000 were Facebook users. It impacts on day to day exercises, genuine social life, interpersonal relations, and mental well-being. A common indication of Facebook over use may be a strong uncontrolled want for being continuously online. This adversely influences other circles of life. As the persistent use of Facebook lead to habit and users' mental health problem. Facebook usage increment mental health issues like alteration and self-esteem. The College students had more grounded enthusiastic association and spent more time on the Facebook (Andreassen & Pallesen, as cited in Rahman& Ahmed, 2018).

Lewis, Kaufman, Christakis's study, conducted in 2008 (as cited in Labrague, 2014) stated that college undergraduates uncover their mental health concerns on Facebook status upgrades. A Moreno et al.'s study, conducted in 2011 (as cited in Labrague, 2014) indicated that 25% of respondents uncovered one or more depressive side effects on status overhaul. Such revelations may be used to encourage referral for conceivable mental health concerns. Besides, Facebook may serve as a great road for raising mindfulness with respect to depression, anxiety and stress.

Researchers stated that there is a negative relationship between Facebook usage and mental health. Facebook utilization is related to negative emotional results i.e. increase of depressive, anxiety, and stress (Faelens, Hoorelbeke, Fried, Raedt, & Koster, 2019). It is the biggest among social networking sites which enable the individuals' connect each other and share information about real-life events. It affects the persons' standard of living. For unreasonably using of Facebook raises the depression, anxiety and stress; obstruct adjustment and diminish self-esteem. Facebook usage leads to increase the emotional states of depression, anxiety and stress.

Cognizant of the above facts the researcher raised to investigate Facebook use and students' emotional states of depression, anxiety and stress in polytechnic college students.

## **1.2. Statement of Problem**

Facebook play a major role in connecting people at distance and it helps to exchange information among the followers. It is an undeniable truth that Facebook usage affects the emotional states of the people (Labrague, 2014; Fedigan, 2018 and Maldonado, 2018). According to Jakobsdottir (2016) Facebook use has an incredible effect on individuals' lives because of spend enormous time on it. Facebook can affect the feeling of people emphatically and adversely. Yin et al. (2019) stated that the individuals' post lots of diverse posts 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.

A study by Labrague (2014) showed that more than 95% of the colleges' health students in Philippines keep up a Facebook profile; it could a way and give inventive openings for school chairmen to distinguish individuals at the chance. 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. This study doesn't indicate the demographic variables (age and gender) relationship with prevalence of depression, anxiety and stress.

Different researchers on the area showed that Facebook users compared themselves to their peers. This increased anxiety, 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. The two studies tell us that there is association between Facebook use; and depression, anxiety, and stress but they do not indicate there is weak or strong relationship between two.

Most of the literatures about Facebook showed that Facebook use is associated with increment of depression, anxiety, and stress (Kross et al. and Verduyn, Ybarra, Resibois, Jonides & Kross, as cited in Faelens, Hoorelbeke, Fried, Raedt, and Koster, 2019). The intensity of Facebook utilize isn't significantly connected to their levels of depression, anxiety, and stress. But, Facebook use, and depression, anxiety and stress relationship depends up the time spent on it. Time spent on Facebook increased the development of depression anxiety and stress (Labrague, 2014). The above mentioned studies have contrast ideas. Therefore, it needs to be proved or disproved by investigation.

Facebook use related to depression, anxiety, and other mental state outcomes (Kaye, 2019). The time spent on Facebook increased the developing of depression and anxiety (Labargue, 2014). Similarly, Muzaffar et al. (2018) also indicated that increased the number of Facebook friends and the time spent per day on Facebook; increased arousal symptoms were each significantly associated with increased Facebook behaviors and repetitive Facebook behaviors. Facebook is one of the social media platforms which affects emotional states i.e. depression, anxiety, and stress due to envy, self-consciousness and upward social comparisons (Hughes, 2018). The individuals feel depressed after passing time on Facebook and then they feel bad by comparing themselves to others (Steers, Wickham, & Acitelli, 2014). Additionally, Fedigan

(2018) forwards that the presence of a critical relationship between how numerous Facebook friends a participant has and his/her depression, anxiety and stress. The more Facebook companions predicted the more clinical indications (Rosen, Whaling, Carrier, & Cheever, 2013). These studies show that the association of time spent and comparing with others with Facebook use but they don't explain the difference between Male and Female.

Facebook is social media network which accompanied debates, rumors, gossips, arguments facts and fictions are posted, and some have contents which may ignite to crises on the nations to feel followers' frustration and fear. It is also notifies the where about of friends and their life situation which may leads to "I am here and others are changed" which may leads to frustrations, resentments and feelings that exacerbate depression, anxiety and stress. This needs deeper investigation and exploration this research is justified to explore.

Generally, in different areas of the globe different researches were conducted in related to Facebook use and emotion related topics. These researches mainly related to the connection of Facebook use and depression but there is no consideration to the variables of anxiety and stress. Facebook use and related emotional outcomes where researched on different areas of the globe especially in Western and developed nations. However, there is no any evidence of research were found in Africa particularly in Ethiopia. Additionally, the link between Facebook usage; and depression, anxiety and stress has not studied in Ethiopia. So this research focuses on the connection of Facebook use and students' emotional states of depression, anxiety and stress in selected Polytechnic Colleges in Addis Ababa.

### **1.3. Basic Research Questions**

This study had to deal with the subsequent basic research questions:

- Is Facebook use related to the students' emotional states of depression, anxiety and stress?
- Is time spent and number of friends related to the depression, anxiety and stress rating scores?
- Are Facebook use, and depression, anxiety and stress related to gender and age?
- Is there gender difference in time spent on Facebook and prevalence of depression, anxiety and stress?

## **1.4. Objective of the study**

### **1.4.1. General objective**

The general objective of this study was:

- To investigate the effects of using Facebook on students' emotional states of depression, anxiety, and stress in the three Polytechnic colleges of Addis Ababa.

### **1.4.2 . Specific objectives**

The specific objectives of this study were:

- To investigate the effect of Facebook usage on students' emotional states of depression, anxiety, and stress.
- To explore the relationship of time spent and numbers of Facebook friends exposition to depression, anxiety and stress in Facebook use.
- To explore the differences of gender and age on Facebook utilization.
- To identify the gender difference time spent on Facebook and prevalence of depression, anxiety and stress.

## **1.5. Significance of the Study**

This study will have the following significances:

- It will create awareness about the effect of Facebook usage on students' emotional states of depression, anxiety and stress.
- It will be used as an input for mental health policy makers and other concerned bodies so as to design and implement mental health strategies in addressing problems related to Facebook use and negative emotional states.
- It will serve as an input for further research on the area.

## **1.6. Scope of the Study**

This study was conducted in Polytechnic colleges which were found under Addis Ababa city administration for analysis of Facebook use and students' emotional states of depression, anxiety and stress. In this case three/3/ Polytechnic colleges/ General Wingate, Tegbard and Entoto/ were selected due to their accessibility, experience and geographical nearness. In the selected colleges there are students from level I up to level V with different age groups. Moreover the research conducted on students who are attending their education in 2020 academic calendar and it was solely focus Facebook use on emotional states of depression, anxiety and stress issues. This study delimited to Facebook use related to friendship and

related relationships due to their age and philosophy of life. In other side different researchers forwarded 6(six) health related problems i.e. depression, anxiety, stress, fear of missing out, loneliness, attention, and hyper activity disorder in relation to Facebook use due to researchers interest and eagerness but this study delimited to depression, anxiety and stress dimensions. Also this research focused on the time spent on Facebook use; number of friends and dose effects has on its own role.

### **1.7. Limitation of the study**

This study did not finish based on the timeline because of the occurrence of COVID-19 in our country. The data could not collect based on the action plan.

### **1.8. Definition of Important Terms**

**Facebook:** is a well-known social networking site where people can add companions, exchange photos, take off comments on friend's walls, send private emails, discussion lives on chat and subscribe to pages of intrigued (Jacobson, 2011).

**Depression** - is emotional state that's stamped by sentiments of low self-worth or blame and a decreased capacity to appreciate life (Encyclopedia Britannica).

**Anxiety-** is a feeling characterized by sentiments of pressure, feeling of worry, stressed considerations and physical changes like increased blood pressure(American Psychological Association).

**Stress-** is a feeling of being over-burden, wound- up/aroused tight/miserly, tense and stressed (Australian Psychological Society, 2012).

**Emotional state** - is the state of a person's feelings particularly with respect to joy or despondency; his/her emotional state depended on his/her conclusion; he/she was in great spirits; his/her soul rose and Vis versa (free dictionary by frlex).

**Polytechnic College-** is a school of higher education offering instruction in an assortment of vocational, technical and scientific subjects (free dictionary by frlex).

## **CHAPTER TWO**

### **REVIEW OF LITERATURE**

This section presented a review and synthesized the relevant literature available on the study topic. The review of literature focused on Facebook use and persons' emotional states of depression, anxiety and stress. It captured the understanding of Facebook use and persons' emotional states of depression, anxiety and stress from discrete dimensions and covers an overview of different journals that are done in different countries. The section also reviewed the general literature on Facebook use and persons' emotional states of depression, anxiety and stress. Finally, it linked the aspect of Facebook use and persons' emotional states of depression, anxiety and stress based on the existing evidence from the Journals or literatures.

#### **2.1. General overview of Facebook Use**

Facebook had a base started from the Harvard College campus. The originators, Harvard undergraduates Mark Zuckerberg, Dustin Moskovitz, Chris Hughes, and Eduardo Saverin had created the network merely for Harvard Undergraduates but it continuously penetrated to other colleges around the Boston zone and past, permitting as it were individuals with a college e-mail address finishing with (.Edu) to attach Facebook broke the record of SMNs enrollment in July 2010 when it detailed its 500 millionth portion (Wauters, as cited in Ezumah, 2013).

The previous study indicated that in Philippines Facebook among adolescents, about 90% of its users are college undergraduates and spent 90 minutes on their Facebook account. The highest number of age group Facebook users was 18-24. This can be often an admission that Facebook is still the favored approach to social networking among college undergraduates fundamentally since of the instinctive offer brought approximately by this innovation. Facebook gives its users with a freedom to share data around themselves in their profiles, counting pictures, favorite music or recordings, and indeed their contact data. It is worth watching that about half of the time spent on social networks increased and vice versa. This may be due to the reality that contributing so much time on Facebook, similar to with other social media may increment the plausibility of experiencing negative comments, unequivocal news, and negative upgrades from Facebook companions that will trigger the developments of these emotional states (Labrague, 2014).

A study by Steers, Wickham, & Acitelli (2014) upheld the idea that the longer one spends utilizing Facebook, the more prominent the possibility that they would engage in unrestricted upward social comparison and as a result involvement negative emotional state routinely and in this way increasing their hazard to depression. In this study researchers stated that variety of contributing components to this involvement, which incorporate; high status people were sharing the leading parts of their lives/self-enhancing which makes the highlight reel impact specified priority, they indeed found a negative impact on the prosperity between descending social comparisons and also the person, expressing it may be characteristic of prevents.

Facebook allows for detached utilize by exploring through the site without posting or restricting to content. Inactive use incorporates perusing of news feeds (i.e., a collection of posts shared by companions), seeing through users' profiles, analyzing one's claim profile, and investigating old statuses or messages. Protection settings permit users to routinely alter who has gotten to, and who is blocked from seeing their shared content (Shaw, Timpano, Tran, & Joormann, as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). Inactively utilizing Facebook evokes social comparisons (Verduyn, Ybarra, Resibois, Jonides, & Kross, 2017). As teenagers continually compare themselves to their peers and look for positive criticism from them, it is likely that increased use of Facebook may adversely influence their feelings when they get no or negative input (Harter, as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017).

According to psychologist Allen's study, conducted in 2017 (as cited in Yin et al., 2019), the clients said to her that Facebook makes them feel negative feelings such as pity, envy or may be plain fair not great sufficient. Facebook constantly keeps users to upgrade their sentiments, assortment of posts and inactive utilization of news. The larger parts of these upgrades are positive. According to Tandoc, Ferrucci, & Duffy's study, conducted in 2015 (as cited in Yin et al., 2019), presentation to the positive post on Facebook may activate envy and lead to depression since the Facebook users post or share contents which can cause the user feeling repulsive for illustration the photo of a misfortune, children adorable, family savagery, assault or others news which will influence user's feeling without channel or analyze the reality of the news.

### **2.1.1. Facebook use and Time spent**

As researchers acknowledged that the way individuals use Facebook can influence emotional states of youths. Students who habitually utilized Facebook were more likely to concur with the phrase 'life is unfair' (Chou & Edge, as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). Frequent utilize of Facebook is assumed to be related to certain behavioral changes. Agreeably to the researchers' clarification among Serbian high school students, everyday time spent on Facebook was emphatically related to higher inventory (Pantic et al., 2012). Similarly, Labrague (2014) identified that time spent online correlated significantly with anxiety; markedly the amount of time spent on Facebook predicted higher levels of anxiety captured by depression, Anxiety and Stress Scale. Time spent, and depression and anxiety had a significant correlation. Chen & Lee (2013) noticed that frequent Facebook interaction is linked with greater distress directly and indirectly by way of a two-step pathway that increases communication overload and reduces self-esteem. In line with a multivariate investigation by inquiring people demonstrated those individuals who have utilized Facebook longer concurred quite others were more joyful, and concurred that life could be less reasonable, and other people investing longer on Facebook each week concurred over others were more joyful and had way better lives. Moreover, those included more persons whom they did not really know as their Facebook friends concurred quite others had superior lives (Chou & Edge, as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). The more individuals utilized Facebook at one time point, the worse they felt the following time text-messaged to them; the more they utilized Facebook over two-weeks, the more their life fulfillment levels declined over time (Kross et al., 2013). Similarly, a researcher recommended that frequent overhauls from Facebook companions and the plausibility of experiencing negative comments may contribute to the development of negative feelings (Labrague, 2014).

A survey reviewed focus that to Facebook utilize and adolescents' emotional states; the researcher pointed out that the intensity of Facebook utilize isn't significantly connected to their levels of depression, anxiety, and stress. In any case, time spent on Facebook increments the probability to create depression and anxiety (Labrague, 2014).

### **2.1.2. Facebook users' Statistics by considering Demographic**

Facebook is the largest among social network sites which has highest number of users. According to the internet the world states report (June 30, 2017), Facebook users' information within the world where 26.3% (1,970,703,530) from the entire population of 7,519,028,970. Within Africa the entire population was 1,246,504,865. From this entire population, 12.9% (160,207,000) are Facebook users. According to December 2019 report Facebook users' information in Ethiopia from the whole population, 6134 000 31% women 69% men are Facebook users. This accounted for 5.4% of its whole population. Individuals age 25 to 34 were the biggest user group (3 800 000). The highest distinction between men and women happens inside individuals age 25 to 34, where men lead by 1 400 000 (Facebook users' information report of Ethiopia, December 2019).

### **2.1.3. Facebook use and Gender**

Gender difference has been related to Facebook use. According to researchers' comparison of both sexes; females are active users of Facebook than males. Female accounted around 60% of all Facebook users (Kiser, as cited in Simoncic, 2012). Females' subjective time investing in Facebook was higher than males'. Females were more likely to treat Facebook as a necessary portion of life to be mindful, self-presenters and data searchers than males. Besides, the number of Facebook friends appeared significant trend toward noteworthiness in favor of females. There were no gender contrast views in terms of time investing in Facebook, being celebrity on Facebook or being Admirer page parted. This showed that sex is noteworthy variable in terms of utilizing Facebook (Biernatowska, Balcerowska, & Bereznowski, 2017).

Thompson & Loughheed's study, conducted in 2012 (as cited in Biernatowska, Balcerowska, & Bereznowski, 2017), women spend a better rate of their everyday Internet time on Facebook which isn't obvious when they are inquiring approximately the sum of minutes spent on the Facebook. Further, women report that they are more likely than men to spend a lot of time. This make them feel worried when they cannot get into Facebook and in some cases feeling dependent on it.

According to the findings of Maglunog & Dy (2019), in terms of the relationship of sex category with depression level, there is a weak positive association between them. There are

more female understudies who involve gentle and major depression levels than males. Peden, Rayens & Beebe's study, conducted in 2000; (as cited in Maglunog & Dy, 2019) expressed that sex includes a critical part within the presence of depression in female students'. Generally, there was a significant difference in depression, anxiety and stress between males and females (Fedigan, 2018).

#### **2.1.4. The Effect of Facebook usage**

Different studies indicated that people with higher levels of Facebook use were linked with poor rest quality, lower self-esteem and increased anxiety and depression. Individuals who encounter a better obsessive association with Facebook feel disturbed and disconnected when they are unable to get to the social network site such as Facebook (Woods & Scott, 2016). That's, Facebook frequently utilized to preserve a sense of association (Wilson & Gosling, as cited in Faelens, Hoorelbeke, Fried, Raedt, & Koster, 2019). As a result, people who were more emotionally attached in Facebook and passed less time on the site were more situated toward their appearance when access to Facebook is restricted. People who had more Facebook friends had more positive views of their appearance (Rutledge, Gillmor, Gillen, 2013).

Teenagers who utilized social media/Facebook more both by and large, and at night and those who were more sincere contributed in Facebook experienced poorer rest quality, lower self-respect and higher levels of anxiety and depression. Night time particular Facebook use anticipated poorer rest quality after controlling for anxiety, depression and self-esteem (Woods & Scott, 2016). Prior research tries to make a distinction between 'active' and 'passive' Facebook use. An active Facebook use indicates "activities that encourage interaction between the user and other Facebook friends" (Frison & Eggermont, as cited in Faelens, Hoorelbeke, Fried, Raedt, & Koster, 2019). According to Verduyn, Ybarra, Resibois, Jonides, & Kross (2017) findings, passively using Facebook provokes social comparisons and envy. And also it makes social capital and fortifying sentiments of social connectedness.

Low self-esteem in depressed people results in upward social comparison and this brings about envy more likely. This impact would regularly happen in online social networks like Facebook since they permit for simple impression administration and subsequently give high comparison measures. In an online study, depressed and non-depressed participants demonstrated their self-esteem and then displayed Facebook profiles that were either appealing or unattractive.

Participants were inquired to compare themselves to the profile owner and to the sentiments of inadequacy and envy. Depressed members were more jealous, particularly after seeing the attractive profile. Envy was related to higher self-reported mediocrity additionally related adverse with self-esteem. The association between depression and envy is illustrated with an experimental elicitation of envy for the primary time (Appel, Crusius, & Gerlach, 2015).

## 2.1. 5. Advantage and Disadvantage of Facebook

### 2.1. 5.1. Advantages of Facebook

According to the review of Jacobson (2011), Facebook has the following benefits to mental health:

- It has been found in a past study that such sites as Facebook offer assistance the inconveniences of ‘homesickness’ during a transition of moving absent from a community of close friends and family. Use of Facebook can offer assistance keep up contact with family and companions who might live distant way.
- The individuals are utilizing Facebook as a strategy to keep bonds with long-distance companions and relations.
- Facebook can offer assistance a few introverts in communicating with others since it gives a context in which they are more comfortable to conversation in; it can permit them to communicate their sentiments without as much weight as face-to-face contact.
- Facebook as a strategy for recognizing depression.

Facebook permits people to post “status updates” on their “wall” in arranging to advise Facebook companions around their day by day contemplations, activities and feelings. It was checked that university students commonly express symptoms connected with depression, through Facebook statuses.

As Day (2011) review indicated that, Facebook has health benefits in the following ways.

- **Fuel self-esteem:** In a Cornell College study, understudies felt better almost themselves after they repaired their Facebook profiles. A control gathers of understudies who didn’t log onto the site didn’t encounter such a mood lift. According to a Michigan State College study, students with low self-esteem and happiness levels who utilized Facebook more

habitually felt more associated to companions and campus life than those who logged on less frequently.

- **Strengthen friendship bonds:** In a small ponder of overwhelming Facebook-using youthful British adults between ages 21 and 29, Lancaster College researchers found that the site made a difference fortify positive interactions among companions. Both private messages and wall posts permitted Facebook users to trust in their companions, surf down a memory path, and chuckle out uproarious, promoting upbeat feelings.
- **Stamp out shyness and loneliness:** In a soon-to-be-published Carnegie Mellon study, researchers who overviewed more than 1,100 devoted Facebook-using grown-ups found that getting messages from companions and expending data from friends' news feeds boosted sentiments of connectedness, particularly in individuals with self-described "low social skills." Authors say that for bashful individuals, gathering data from news bolsters and profiles can offer assistance begin discussions they something else might not be comfortable sufficient to strike up.

#### **2.1.5.2. Disadvantages of Facebook**

According to the review of Jacobson (2011), Facebook encompasses a few commonly examined disadvantages:

- Critics of Facebook have detailed the loss of human interaction and its substitution with online interaction; which they contend might be a conceivable trigger for depression.
- In spite of the fact that an awfully genuine issue, these incidences are decently unprecedented and don't pose as a significant risk to the majority of Facebook users.
- Evidence has been found of a remarkable relationship between Facebook habit, low-self-esteem, depression and lack of social abilities.

As Day (2011) review indicated that, Facebook had the following health risks:

- **Cause depression:** The people spend much time on Facebook, leading them to show to drug abuse, risky sexual hones, or forceful or self-destructive behaviors.
- **Split up marriages:** Individuals reconnecting with high school sweethearts or other impacts from the past that may result in emotional, just in case not real, cheating. Generally, for many individuals, how or whether Facebook influences their mood (Day, 2011).

## **2.2. Facebook use and Emotional states of Depression, Anxiety and Stress**

### **2.2.1. Facebook and Depression**

Depression is a common illness around the globe that influenced more than 264 million individuals. It is distinctive from normal mood changes and short-lived emotional reactions to challenges in standard of living. When long-lasting and with direct or serious intensity, depression may be gotten to be a real health condition. It can cause the influenced individual to endure incredibly and work ineffectively at work, at college and within the family. Above all depression can result in suicide. Approximately, about 800, 000 individuals die on because of suicide every year. Suicide is the second rank to reason of death in 15-29-year-old (World Health Organization, 30 January 2020).

According to Belmaker and Agam's study, conducted in 2008 (as cited in Hughes, 2018), depression is related to sentiments of pity. These sentiments don't transmit indeed when the cause of the feeling disseminates and is frequently unbalanced to their unique cause. Kross et al's study, conducted in 2013, (as cited in Hughes, 2018) tries to analyze the people groups Facebook utilization and how inclined they are to sentiments of life disappointment with their cross-sectional study. They found that fulfillment levels declined with over use of Facebook through a two week period. Moreover, Roberts (2015), indicates that College students who use Facebook frequently inclined to social comparison, negative self-evaluation, rumination, envy or general feeling of inadequacy, it puts them at greater risk of developing depressive symptoms.

According to Maglunog & Dy (2019), the number of minutes spent on Facebook is directly related to the depression level. Those who were within the category of major depression spent more minutes on Facebook/day compared to those within the negligible depression category. There was a measurably critical relationship between over use of Facebook (in terms of the number of hours and recurrence) and depression level of the under studies. Similarly, a Croatian study of Pantic et al. (2012) found that high school students' daily time spent on Facebook was definitely related with depression. These findings were reflected by Rosen, Whaling, Rab, Carrier, & Cheever, (2013), who found that participants who spent more time online and those who performed more Facebook picture administration prove more clinical indications of major depression. The individuals have higher levels of depression, anxiety and

stress when they have high numbers of connections or number of Facebook friends (Fedigan, 2018). Moreover, according to Kalpidou, Costin & Morris (2011), college undergraduates who detailed having higher numbers of Facebook companions experienced a lower passionate alteration to college life.

Steers, Wickham, & Acitelli (2014) found that Facebook may affect users' mental health when users tended to compare themselves with others. Their study shows that investing a part of time on the website had a remarkable association with the tendency to compare one to others. Since individuals feel depressed after investing an incredible deal of time on Facebook, they feel bad when they compare themselves to others. Kross et al.'s study, conducted in 2013 (as cited in Jakobsdottir, 2016) indicated that in a brief period of time, Facebook has changed how individuals associated, indeed in spite of the fact that it is obscure whether the utilize of Facebook predicts changes in welfare over time. The researchers contacted eighty two participants five times a day for two weeks and found out that Facebook uses anticipated lessening in influence and life fulfillment over time. Collaboration with Facebook during one time period, made members feel more regrettable afterward on during the same day. Forest & Wood (2012) expressed that Facebook would diminish the perceived riskiness of self-disclosure, in this way, empowering the individuals with low self-esteem. Normal Facebook utilize over the two weeks encounter inspecting periods anticipated diminish in life fulfillment over time. Frequent Facebook use predicts depression (Kross et al., and Steers, Wickman, & Acitelli, as cited in Jakobsdottir, 2016).

According to Feinstien et al. (2013), examination of the tendency to contrarily compare one with others in Facebook use leads to increase in depressive symptoms. The negative social comparison would lead to extend in rumination; and this inactive and repetitive focus on trouble would in turn be related to depressive symptoms. Another vital factor that can make somebody more susceptible to Facebook depression is the way in which they utilize the site. Much of the research literature breaks Facebook down into active behaviors and inactive behaviors or observation use (Simoncic et al., as cited in Robert, 2015). According to the findings of researches, Facebook use on its claim does not straightforwardly lead to depression. Facebook can be entertained and seem offer assistance ease boredom or indeed loneliness. This impact can be clarified by social rank hypothesis. The social rank hypothesis could be a

hypothesis of depression that goes with competition over resource. When we are incapable to gain the resources that we require, we feel lacking or subordinated. Those who feel subordinate are at a better chance of creating depression. In terms of Facebook, one of the resources over which we compete is positive self-image, or social attraction. When we feel others are more socially engaging than we are, we feel second rate and start jealous of their positive self-image. In numerous cases, this will contribute to the advancement of Facebook Depression. When Facebook use contributes to negative self-image, low self-esteem, and envy; Facebook can get to be a terrifying part (Tandoc, Ferrucci & Duffy, 2015).

Youth adults between 18-23 age ranges regularly encountered critical change in their lives. Many individuals are moving to college and taking off the boost framework of their domestic town for the primary time. This combined with the stress of living themselves and going to college classes for the primary time, together with more prominent independence, can make these people create a depression, without considering the impacts that Facebook can have (Tandoc, Ferrucci & Duffy, 2015). All of this new stress can make youth grownups feel they are falling flat. When combined with the exceedingly altered, positively-spun nature of Facebook, college understudies may feel inferior when compared to their apparently fruitful and cheerful classmates which increments the probability of encountering Facebook depression. According to a longitudinal study, the more individuals used Facebook, the worse they felt over time (Kross et al., as cited by Robert, 2015). The more frequent a student visit his/her Facebook account, the higher his/her depression level (Subrahmanyam, Smahel, & Greenfield, as cited in Maglunog & Dy, 2019).

According to Appel, Crusious, & Gerlach (2015), depressiveness is related to higher levels of jealousy which results from social comparison. Low self-esteem in depressed individuals' leads to upward social comparison and this make envy more likely. This impact ought to habitually happen in online social networks like Facebook since they permit for simple impression administration and give high comparison guidelines. The people compare themselves to the other profile owner and the result of this feeling of inferiority; and envy after utilizing Facebook leads to the Facebook users greatly vulnerable to encounter Facebook depression, which may likely increment their symptoms.

Tandoc, Ferrucci & Duffy (2015) indicated that heavy users of Facebook experienced higher levels of Facebook envy and symptoms of depression than light viewers. In addition, the study found that heavy Facebook users engaged in Facebook observation, which was parallel to envy. In other words, those who were overwhelming Facebook users experienced higher levels of envy and depression than light users. Facebook users frequently engage in observation around others and this increase their depression level (Whiting & Williams, as cited in Maglunog & Dy, 2019).

According to the review of Maldonado (2018), Facebook has the power to influence one's mood and indeed spread temperament all inclusive. According to a research on the patterns and their impact on a person's mood, negative patterns make individuals feel gloomy and disclose terrible character while positive patterns possess positive mood and make individuals cheerful.

### **2.2.2. Facebook Use and Anxiety**

Anxiety could be an ordinary response to stress and can be advantageous in a few circumstances. It can warn individuals to threat and offer assistance and to get ready and pay consideration. Anxiety disorders contrast from ordinary sentiments of apprehension or anxious, and include excessive fear or anxiety. Anxiety disorders are the foremost common of mental disorders and influence about 30 percent of grownups at a few points in their lives. But anxiety disorders are treatable and a number of viable medications are accessible. Treatment makes a difference most individuals' lead typical, profitable lives (Parekh, 2017).

According to Essau, Lewinsohn, Olaya, & Seeley (2014), adolescent anxiety anticipated poor total adjustment, poor adjustment at work, poor family connections, less life fulfillment, poor adapting aptitudes, and more incessant stress. Wittchen, Kessler, Pfister, Hofler, & Lieb, (2000), recommend that most anxiety disorders are essential disorders that significantly increase the hazard for secondary depression. Relationships with social indices (e.g., separate rates, wrong doing rates) recommend that diminishes in social connectedness and increments in natural threats may be responsible for the rise in anxiety (Twenge, 2000). Though studies indicate a notable attachment between the use of Facebook and mental health issues in healthy youths, there's a scarcity of research examining how Facebook use affects young people who are diagnosed with an anxiety disorder. Facebook use seem endorse different characteristic features like comparison to peers, fear of judgment, concerns over protection and approval

seeking (Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). Graham's study, conducted in 2016 (as cited in Hughes, 2018) states in a commentary that Facebook may cause youth person's anxiety by advertising a stage that straightforwardly evaluates their fellowships, offers social comparisons and providing real time data almost social occasions that the person isn't portion of, these variables come together to create an inevitable world of steady social anxiety that can show for lengthened periods of time.

College students who have a high level of Facebook intensity are in danger of developing anxiety (Roberts, 2015). A researchers finding showed that Facebook use may lead to increased anxiety. Many socially fearful individuals regularly use computer-based communication in order to decrease their anxiety when engaging in social interaction. This can often lead to a phenomenon called "Facebook anxiety." This often happens when the pressure that they already feel offline to present themselves in the best light possible is magnified through the high availability of their online personality to others on social media. Since Facebook can keep positive and negative information of all individuals' online, it may expose the wrong doings of individuals and harm the positive images of users. These lead to anxiety provoking (Farquhar & Davidson, 2014).

A study conducted by Muzaffar et al. (2018) stated that the increased the number of Facebook friends, and increased time spent per day on Facebook, leads to increase anxious arousal indications which is associated to increase Facebook behavior and repetitive behavior. The increased Facebook behavior and repetitive Facebook behavior and the increased adolescent generalized anxiety symptoms have direct relationship. But Social anxiety indications, depressive indications, and common distress were each not related to Facebook behavior and repetitive Facebook behavior. The study indicated that Facebook intensity, characterized as the amount of time somebody spends on Facebook, their number of friends, and how imperative the site is for them in common, and would be an indicator of both Facebook-specific anxiety and social anxiety. In addition, the researchers found that social anxiety and Facebook-related anxiety are positive indicators of each other, which women are more likely to involve both sorts of anxiety than men (Farquhar & Davidson, 2014). Using Facebook can increase people's stress levels, create anxiety and contrarily influence a person's sense of self. According to the review of Maldonado (2018) using Facebook might cause an individual to develop a mental

health disorder or worsen an existing one. Facebook increments people's anxiety levels by making them feel insufficient and creating abundance worry and stress. Facebook can increase the amount of social anxiety an individual has upon meeting somebody for the main time. In opposite, Awing et al, (2017), states that Social anxiety had a weak relationship with Facebook concentrated utilization.

Adolescents with anxiety disorders, generally have low self-esteem, poor problem-solving, and a strong want to be acknowledged. A focus group study which demands individuals points of view related to Facebook under six Facebook stressors such as seeking approval, fearing judgments, escalating interpersonal issues, wanting privacy, negotiating self and social identify shows that Facebook can impact users' anxiety. Many of the participants reported that fear of getting negative comments make them post less contents while comparing themselves with friends make others be obsessed with observing posted content and friend lists. This increases anxiety. An exploratory study propose there are different mechanisms through which Facebook may exacerbate anxiety in teenagers who have pre-existing anxiety disorders and subsequently may make them vulnerable to negative online encounters (Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017).

### **2.2.3. Facebook use and Stress**

Baum's study, conducted in 1990 (as cited in Hughes, 2018) characterizes stress as an enthusiastic involvement accompanied by unsurprising biochemical, physiological and behavioral changes. These physiological changes can be created through use of Facebook and there are a number of hypotheses as to why Facebook use may cause stress.

Stress appears when users try to maintain an enormous network of Facebook friends, feeling jealous by comparing themselves with friends' abilities and living standards, poor skill of answering content messages, the fear of lost out and poor skills in organizing pictures. For the study, the researchers include grown-up Americans to investigate the connection between using technologies and stress. They tested the plausibility that a specific action is also connected to worry. It's possible that technology users particularly people who use social media like Facebook are more mindful of stressful events within the lives of their friends and family. This raises the notice of others live to the stressful events because the stressful events

may contribute to the stress individuals have in their claim lives (Hampton, Rainie, Lu, Shin & Purcell, 2014).

Researchers portray two critical factors which offered assistance to clarify how SNS like Facebook use can activate stress and negative feelings. To begin with, a study exploring physiological markers of stress related to social media found that youth Facebook users with higher numbers of Facebook friends were found to have elevated cortisol levels, when controlling for sexual orientation, age, stress, and time the endocrinological sample was collected (Morin-Major et al., as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017).

According to Ponzi, Muehlenbein, Geary, and Flinn, (2015) study showed that children characterized by a lower pre-interview cortisol concentration and lower salivary alpha-amylase reactivity to the interview detailed the highest density of fellowships. The discourse of the researchers show that in light of the multisystem approach to the study of children's behavioral results, emphasizing that the future work of this kind is required in order to get it the cognitive and biological mechanisms fundamental children's and adolescents' social perceptual predispositions. Another study showed that online social systems (i.e., number of Facebook companions) don't give stress barrier the same way in-person social networks have been found to do. Moreover, a longitudinal study found that Facebook users' individuals detailed that more online bolster leads to the users to higher levels of stress and lower life satisfaction (Utz & Breuer, 2017).

A study conducted by Center Data Science Team on Facebook, Inc. viewed that when positive expressions on an individual's Newsfeed were controlled to become decreased, individuals successively created less positive posts on their possess profile. Contrarily, when negative expressions were diminished, individuals created few negative posts (Kramer, Guillory, & Hancock, as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). Minkel et al.'s study, conducted in 2012 (as cited in Hughes (2018), indicated the impacts of sleep deficiency on stress levels and found out that less sleep leads to high levels of stress when compares with a healthy sleep. This might be another contributing figure within the way Facebook affects stress levels.

A study shows Facebook really can make individuals miserable. Researchers for their study checked out 82 youth and frequent Facebook users, 53 females and 29 males. They were sent content, messages with joins to an online overview that inquired how they felt, whether they were stressed, just in case they felt forlorn, how frequently they need to utilize Facebook, and the way frequently they were connecting specifically with individuals (Maldonado, 2018).

Generally, many researchers stated about Facebook use and the individuals' emotional states of depression, anxiety and stress: According to Wang, Jackson, Zhang and Zu's study, conducted in 2012 (as cited in Faelens, Hoorelbeke, Fried, Raedt, &Koster (2019), finding the indicators of Facebook utilize would be elevated depressive, anxiety, and stress related indications – by means of social comparison and self-esteem. Individuals, who report higher levels of Facebook utilize, encounter the next enthusiastic and more grounded got to be associated. This is the case for all sorts of Facebook utilize, since they all show a strong association with Facebook concentrated, which was in turn connected to the psychopathology indicators through social comparison and self-esteem. This is in line with past research findings, indicated that an increased have to be belong and an increased require for popularity were related with an increased utilize of Facebook. These connections were intervened by FoMo/fear of missing out/, which, in turn, was related to increased stress related to Facebook utilize (Beyens, Frison, & Eggermont, 2016). According to the previous researcher finding Facebook intensity and DASS had not a significant relationship. The same is true for the number of Facebook friends and DASS. Depression, anxiety and stress had a significant correlation (Labrague, 2014).

### **2.3. Survey of Tools Used to Assess Facebook Use, Depression, Anxiety, & Stress**

Facebook intensity scale and Depression, Anxiety and Stress (DASS-42/ scales are standardized tools that used to assess Facebook Use, Depression, Anxiety, & Stress

#### **2.3.1. Descriptions of the Tools**

##### **2.3.1.1. Facebook Intensity Scale**

Facebook intensity scale created to examine the individuals' social networking site utilization and social capital. This scale completely contains 12 questions and measures the active engagement with Facebook exercises, the degree to which people were associated with

Facebook and how the Facebook movement influences the users' everyday lives. The Facebook intensity scale has 8 questions to degree active engagement and passionate association. Illustration questions are "Facebook accurately shows my relationship with others; I use Facebook to find new friends; and Facebook is part of my everyday activity." Additionally, four questions contain two extra measures the Facebook action. The Facebook intensity scale two questions to a degree how individuals utilized Facebook to meet new individuals and interface with existing offline contacts. And also, the two questions have gone through online on an ordinary day (Labrague, 2014).

### **2.3.1.2. Depression, Anxiety and stress scale (DASS-42)**

The DASS is a 42 items instrument used to measure over the past week, indications of depression, Anxiety and stress. Each of the three scales consists of 14 items (Brown, Chorpita, korotisch and Barlow, 1997). The DASS- 42 scale measures the negative emotional states of depression, anxiety and stress. The Depression scale evaluates miserable, self-deprecation, need of intrigue, Inertia, dysphoria and anhedonia. Anxiety scale surveys situational uneasiness, autonomic excitement, muscle impacts and subjective involvement on edge influence. The stress scale evaluates apprehensive excitement, being aggravated, bad-tempered, and anxious and trouble unwinding (Labrague, 2014).

## **2.3.2. The Instruments used to assess the Major Variables**

### **2.3.2.1. Facebook Intensity Scale**

#### **2.3.2.1.1. Origin**

Ellison, Steinfield & Lampe in 2007 developed Facebook intensity scale which contains 8/eight/ items with other scales that do not related to negative emotional states depression, anxiety and stress in their study of the title "The benefits of Facebook "friends" Social capital and college students' use of online social network sites." From the Ellison, Steinfield, & Lampe's Facebook intensity scale 8/eight/ items; the 6/six/ items used by Lababrgue to developed Facebook intensity scale in 2014. By using those Ellison, Steinfield, &Lampe's six items as background Labrague in 2014 developed Facebook intensity scale which contains 12 items by preparing additional 6 items in his study of the title "Facebook use and adolescents' emotional States of depression, anxiety and stress." The Ellison, Steinfield, &Lampe (2007) six items are: "Facebook is part of my everyday activity; Facebook has become part of my daily

routine; I feel out of touch when I haven't logged onto Facebook for a while; I am proud to tell people I'm on Facebook; I feel I am part of the Facebook; and I would be sorry if Facebook shut down."

#### **2.3.2.1.2. Reliability**

Reliability is degree of quality in a quantitative study that the precision of an instrument. In other words, the degree to which a inquire about instrument reliably has the same result on the off chance that it is utilized within the same circumstance on rehashed event (Heale & Twycross, 2015). The Facebook intensity scale which it's approved for its reliability results in measureable value of 0.83 (Cronbach's alpha). It was made in order to get a better; a much better; a higher; a stronger; an improved higher degree of Facebook utilization than frequency or term records. This degree incorporates two self-reported assessments of Facebook behavior, outlined to measure the degree to which the member was effectively locked in Facebook exercises: the number of Facebook companions and the sum of time spent on Facebook on a typical day. This measure besides incorporates a series of Likert-scale attitudinal questions outlined to tap the extent to which the participant was emotionally associated to Facebook and the extent to which Facebook was coordinates into his/her every day exercises (Ellison, Steinfield, & Lampe, 2007). The reliability of this scale checked by the investigation the title Facebook use on adolescents' emotional states of depression, anxiety and stress at Samar University in Philippines by using 76 nursing student participants. The FIS was validated for its reliability resulting in statistical value of 0.90 (Cronbach's alpha) (Labrague, 2014).

#### **2.3.2.1.3. Validity**

Validity is defined as the degree to which a concept is precisely measured in a quantitative research (Heale & Twycross, 2015). Labargue developed the Facebook intensity scale by using the concept of Ellison, Steinfield, & Lampe (2007) as baseline and widening their idea. Used a sample of responses 76 students enrolled within the Bachelor of Science in nursing program from a government university in Samar, Philippines by Labargue in 2014; during studied of his research on the title "Facebook use and adolescents' emotional states of depression, anxiety and stress". In his research the scores were subsequently checked for validity associated with Facebook use and adolescents emotional states. The scale used samples 10 years old and above (Labargue, 2014).

### **2.3.2.2. Depression, Anxiety and Stress Scale (DASS-42)**

#### **2.3.2.2.1. Origin**

The DASS-42 developed by Lovibond, S.H. & Lovibond, P.F in 1995 at Sydney (Australia). The DASS-42 is a 42 items self-report scale designed to degree the negative emotional states of depression, anxiety and stress. The central esteem of the DASS in a clinical setting is to clarify the locus of emotional unsettling influence, as portion of the broader task of clinical assessment. The basic work of the DASS is to survey the seriousness of the center side effects of depression, anxiety and stress. As the scales of the DASS have been appeared to have high inner consistency and to yield significant discriminations in a variety of settings, the scales ought to meet wants of both researchers and clinicians who desire to assess current state or alter in state over time (e.g., within the course of treatment) (Lovibond, & Lovibond, 1995).

#### **2.3.2.2.2. Reliability**

The reliability scores DASS in terms of Cronbach's alpha scores rate was 0.91, 0.84 & 0.90 respectively for the three scales/ depression, anxiety & stress each scale/ within the normative sample. The means of depression, anxiety and stress scales are 6.34, 4.7 & 10.11 respectively. And also 6.97, 4.91 & 7.91 standard deviations for depression, anxiety and stress scales respectively. The mean scores within the standardizing test did change marginally between sexes as well as shifting by age; in spite of the fact that the edge scores for classifications don't alter by these varieties. The standard threshold requirement of Depression and Stress scales was 0.9 for investigate; and the Anxiety scale for threshold for clinical applications was 0.7, and is still near to the 0.9 required for investigate (Lovibond, & Lovibond, 1995). The DASS-42 was validated for its reliability resulting in statistical value of 0.89 (Cronbach's alpha) (Brown, Chorpita, Korotich and Barlow, 1997 & Labrague, 2014).

#### **2.3.2.2.3. Validity**

The DASS was created using a sample of 504 participants a test of reactions from an endeavor by the understudies, taken from a test of 950 to start with Year university students' responses. The test was normed on a test of 1044 males and 1870 females' age between 17 and 69 a lengthened time, members of different foundations, holding college understudies, and medical caretakers. The scores were along these courses checked for validity in contact with outpatient group counting patients feel torment from uneasiness and depressive clutters, light

sleepers, dead tissue patients, and patients encountering treatment for sexual, menopausal , and depressive disorders. While the test was not normed against tests young than 17, due to the straightforwardness of language, there has been no compelling prove against utilize of the scales for comparison against children as young as 12(Lovibond, & Lovibond, 1995).

## 2.4. Empirical Review Literature

Since the establishment of Facebook different researches were conducted. In the following table empirical review literatures related to the topic understand so far were summarized.

<u>NO</u>	<b>Topic</b>	<b>Authors</b>	<b>Years of Publication</b>	<b>Major findings</b>	<b>Remarks</b>
1	Gender differences in using Facebook: preliminary analysis	Adriana Biernatowska, Julia Maria Balcerowska, & Piotr Bereznowski	2017	Gender is significant variable in terms of utilizing Facebook.	
2	Facebook use & adolescents' emotional states of depression, anxiety, and stress.	Leodoro Labrague	2014	Intensity of Facebook utilization and negative emotional states has not directly relationship. But, time spent on Facebook use increments depression and anxiety scores.	
3	The Association of Adolescent Facebook Behaviors with Symptoms of Social Anxiety, Generalized Anxiety, and Depression	Muzaffar et al.	2018	The increased Facebook behavior and repetitive Facebook behavior leads to increased youthful generalized anxiety indications.	
4	Investigating the Impact of Social Networking on Mental Health. The Effects of Facebook Intensity on Overall Depression Anxiety and Stress	Eoin Fedigan	2018	The people have number of associations or companions on Facebook; they can have higher level of depression, anxiety and stress. These people age are 18 years or over.	

<b><u>NO</u></b>	<b>Topic</b>	<b>Authors</b>	<b>Years of Publication</b>	<b>Major findings</b>	<b>Remarks</b>
5	Is Facebook creating “iDisorders”? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety	L.D. Rosen , K. Whaling, S. Rab, L.M. & Carrier, N.A. Cheever	2013	Technology-related anxieties essentially anticipated clinical symptom of the disorders. After figuring anxiety, Facebook and chosen innovation employments anticipated clinical indications with Facebook utilize impression administration and fellowship being the leading indicators.	
6	Are Personality and Facebook Use Related to Depression and Anxiety?	Caroline Roberts	2015	Social comparison and Facebook-specific social comparison connect with depression and anxiety. Negative social comparison related with inactive utilize.	
7	Facebook Use and the Association With Self-Esteem and Depression	Ragnhildur Tinna Jakobsdottir	2016	Depression, stress, and self-esteem all had noteworthy affiliation with regularly the understudies changed their profile picture. The more stress understudies changed their profile picture; the lower their depression and self-esteem scores were recorded. The understudies who spent more time on Facebook did not appear more prominent depression indications.	

<b><u>NO</u></b>	<b>Topic</b>	<b>Authors</b>	<b>Years of Publication</b>	<b>Major findings</b>	<b>Remarks</b>
8	Facebook content analysis: Post affected user emotion	Yin et al.	2019	There are five types of Facebook posts. These five types are amusing posts, accident posts, family violence posts, normal calamity posts and contamination posts. The amusing posts bring the positive feelings to the Facebook users. The rest posts bring negative enthusiastic to the users.	
9	Exploring how social networking sites impact youth with anxiety: A qualitative study of Facebook stressors among adolescents with an anxiety disorder diagnosis	Olivia Calancie, Lexi Ewing, Laura D. Narducci, Salinda Horgan, & Sarosh Khalid-Khan.	2017	In adolescents Facebook may exacerbate anxiety that have pre-existing anxiety disorders. This may make the teenagers vulnerable to negative online encounters.	
10	Social media and the cost of sharing	Keinth Hampton, Lee Rainie, Weixu Lu, Inyoung Shin, & Kristen Purcell	2014	Facebook users are more mindful of upsetting occasions within their family and companions that lead to stress have their own lives.	

<b><u>NO</u></b>	<b>Topic</b>	<b>Authors</b>	<b>Years of Publication</b>	<b>Major findings</b>	<b>Remarks</b>
11	Seeing everyone else's highlight reels: How Facebook usage is linked to depressive symptoms	Mai-Ly N. Steers ,Robert E. Wickham & Linda K. Acitelli	2014	The persons investing a great deal of time on Facebook feel depressed since they feel gravely when comparing themselves to their companions.	
12	Facebook use, envy, and depression among college students: Is facebooking depressing?	Edson C. Tandoc Jr. , Patrick Ferrucci , & Margaret Duffy	2015	The findings demonstrated that the impact of surveillance utilize of Facebook on depression is interceded by Facebook envy. Be that as it may, when Facebook envy is controlled for, Facebook utilize really reduces depression.	
13	Facebook Usage and Depression Levels of Selected Filipino College Students	Grace Pauline A. Maglunog and Marison Felicidad R. Dy.	2019	<ul style="list-style-type: none"> <li>✓ The number of minutes spent on Facebook and depression level has moderate positive relationship.</li> <li>✓ Frequency of Facebook visits and depression level has a weak positive relationship.</li> <li>✓ Depression emphatically connected to Facebook activities.</li> </ul>	

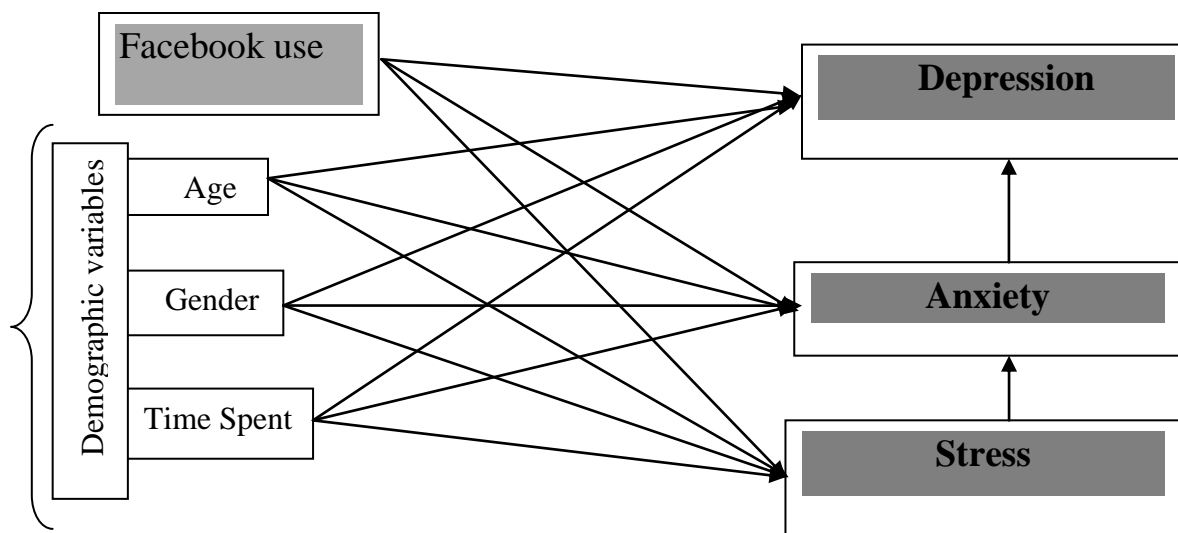
<b><u>NO</u></b>	<b>Topic</b>	<b>Authors</b>	<b>Years of Publication</b>	<b>Major findings</b>	<b>Remarks</b>
14	“I Don’t Want to Miss a Thing”: Adolescents’ Fear of Missing Out and its Relationship to Adolescents’ Social Needs, Facebook Use, and Facebook Related Stress	Ine Beyensa , Eline Frisonb , & Steven Eggermont	2016	The results demonstrated that an increased need to belong and an increased require for popularity were related with an increased utilize of Facebook. These connections were interceded by FoMo, which, in turn, was related with increased stress related to Facebook utilize.	
15	Sharing, Liking, Commenting, and Distressed? The Pathway Between Facebook Interaction and Psychological Distress	Wenhong Chen & Kye-Hyoung Lee	2013	Directly and indirectly more prominent distress and Visit Facebook interaction have related with by increments communication over-burden and diminish self-esteem.	
16	The Anxiety of Facebook	Marissa Maldonado	2018	Facebook increments people’s anxiety levels by making them feel insufficient and generating overabundance worry and stress.	
17	Facebook Frets: The Role of Social Media Use in Predicting Social and Facebook-Specific Anxiety	Lee Farquhar, & Theresa Davidson,	2014	The result indicated that Facebook utilize may lead to increase anxiety.	

<b><u>NO</u></b>	<b>Topic</b>	<b>Authors</b>	<b>Years of Publication</b>	<b>Major findings</b>	<b>Remarks</b>
18	A Correlational Study between Facebook Intensity Usage and Social Anxiety of Senior High School Students	Awing et al.	2017	Social anxiety has weak relationship with Facebook intensity utilization.	
19	Why people with anxiety disorders become depressed? A prospective longitudinal community study	Wittchen, H. U., Kessler, R. C., Pfister, H., Hofler, M., & Lieb, R.	2000	Most anxiety disorders are essential disorders that significantly increment the hazard for secondary depression.	

The implications of the above review literatures are showing the correlation between the Facebook use; and depression, anxiety and stress. Moreover, these literatures indicated that depression, anxiety and stress had significant relationship because stress leads to anxiety; and also anxiety leads to depression. So the empirical literatures indicated that the correlation research design is meaningful to investigate the research title because the above mentioned researches approved there is relationships.

## 2.5. Conceptual Framework

The key point of this research was to investigate the effects using Facebook on students' emotional states of depression, anxiety and stress. Analogous to the previous study works conduct on the effects using Facebook on students' emotional states of depression, anxiety and stress; this research used students' emotional states of depression, anxiety and stress as dependent variable whereas Facebook use as independent. The dependent variables were selected since they were prevalence in polytechnic colleges because of the students' friendship. So, this research examined the strength of relationship between Facebook use and students emotional states of depression, anxiety and stress that prevalence in the polytechnic colleges by adopting conceptual framework existed in most Journals.



There is relationship between Facebook use and Students' emotional States of Depression, Anxiety, and Stress. Time spent and number of Facebook friends has significantly with the students' emotional states of depression, anxiety and stress. The three emotional states (depression, anxiety & stress) correlate significantly each other. In Facebook use, age and gender have statistical difference in the prevalence of depression, anxiety and stress. Facebook use increase or exacerbate anxiety level by generating excessive stress meaning stress leads/ ends up in anxiety, and anxiety results in the occurring of depression. Furthermore, the above diagram shows that knowing the strength of relationship is important to cover Facebook use and students' emotional states of depression, anxiety and stress by obtaining awareness about the association between the Facebook use and negative emotional states(Source: Own construction).

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This section of the research includes research design, population, sampling techniques and sample, data collection methods, data collection procedure, pilot study and ethical consideration of the research.

#### **3.1. Research Design**

This study focused to investigate the Facebook use and students' emotional states of depression, anxiety and stress in selected Polytechnic colleges. Through the Facebook intensity scale and DASS-42 scales, a descriptive correlational research design was utilized to investigate the relationship between Facebook use and students' emotional states of depression, anxiety and stress. Correlation measures the strength of the relationship between two variables (Daniel & Terrell, 1995). This research design utilized at Samar University in Philippines by using 76 nursing student participants in the investigation of the title Facebook use on adolescents' emotional states of depression, anxiety and stress (Labrague, 2014). In addition, the researcher employed linear regression analysis and multivariate tests as data analysis method. Different scholars confirmed regression to show strength of dependent variable to independent variable. It can also fix the value of the regressor variable and observe the corresponding value of the response Y (Montgomery, Peck & Vining, 2012). It used to identify the strength of the effect that Facebook use has on students' emotional states of depression, anxiety and stress. Multivariate tests used to show variation of demographic factors on dependent variables. Cross sectional study also involves measuring participants at a specific point of time (Institute for Work & Health, 2015).

#### **3.2. Population**

The population for this study was students who were found in 3/three/polytechnic colleges. These were General Wingate, Tegibard, and Entoto polytechnic colleges' students. In these colleges there were 5636 regular students. Out of this 2187 students were in General Wingate; 1572 students were in Tegibard and 1877 students were in Entoto to use as the population of this study.

### 3.3. Sampling Techniques and Sampling Procedure

There are 16 Technical & Vocational education and training (8 polytechnic, 4 industrial and 4 manufacturing) colleges under Addis Ababa city administration. Among these due to their accessibility and the number of students they attend 3/three/ polytechnic colleges, namely General Wingate, Tegibard and Entoto polytechnic colleges which were purposively selected to use as the research site.

Out of 5636 students in the selected colleges; the researcher took 360 student respondents by using the sample size determination proportionate formula of the Krejcie & Morgan (1960).

Based on the students' attendance the participants were selected by using lottery method/simple random sampling technique. Simple Random sampling refers to the method of sample selection which gives each possible sample combination an equal likelihood of being picked up and each participant within the whole population to have an equal chance of being included within the sample (Kothari, 2004). The data collected in December first. Lastly, the researcher accompanied a pretest by using 50 participants to affirm the sampling techniques and sample size for the feasibility of the research.

In other way, additionally to the Krejcie & Morgan (1960) sampling size determination formula to the sample size proportionate from each college Yamane(1967) used i.e. calculated by sample size multiple by hundred and divided by the total population gives the obtained percent which is 6.39% (gotten by calculating  $360/5636*100 = 6.39\%$ ). The same is true for gender. The 6.39% of each college students were the sample that used for the study as participants.

Table 1: Polytechnic colleges and the respondents taken:

No	Name of Colleges	Regular Students			Samples			
		Number		Total number	6.39 % of Gender/samples		6.39 % in each college	Adjust Samples
		Male	Female		Male	Female		
1	Entoto polytechnic	1301	576	1877	83	37	119.94	<b>120</b>

2	General Wingate polytechnic	1132	1055	2187	72	67	139.69	<b>140</b>
3	Tegibared polytechnic	875	697	1572	56	45	100.45	<b>100</b>
	<b>Total Number</b>	<b>3308</b>	<b>2328</b>	<b>5636</b>	<b>211</b>	<b>149</b>		<b>360</b>

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Source: Addis Ababa city Technical & Vocational Education and Training Agency (2020)

### 3.4. Data Collection Methods

The self-report questionnaire comprised of three parts to gather data: the first part is the demographic information; the second and third parts are standardized instruments. The instruments are Facebook intensity scale and depression, anxiety and stress scale/DASS-42/ respectively; these instruments be delivered personally by the researcher. To increase the return rate of the questionnaire the researcher distributed 387 Papers. Among the distributed questionnaires the researcher wanted percentage were returned.

#### 3.4.1. Instruments

The instruments of this research were standard scales which served as the main data gathering tools for this study to collect the necessary data. The type of instruments employed was Facebook Intensity Scale (FIS) (Labrague, 2014) and Depression, Anxiety, Stress Scales (DASS) (Lovibond & Lovibond, 1995). The nature of the instruments was the closed ended. The instruments/questionnaire was prepared in English and translated to Amharic to ease data collection session.

##### 3.4.1.1. Facebook Intensity Scale

The Facebook Intensity Scale (FIS) is a 12 items questionnaire which was developed as part of investigation undergraduates' social networking site usage and social capital, the resources collected through being part of a network. This scale measures Facebook intensity, including the active engagement with Facebook activities, the extent to which individuals were emotionally connected to Facebook and how well Facebook was integrated into users' daily lives. Participants answered each question from these scales on a five point Likert scale with 1=strongly disagree and 5=strongly agree. Other Facebook variables were also included in the questionnaire such as the number of Facebook friends and time spent online on a typical day. For

example the samples of items are: I use Facebook to better understand the interests and activities of my friends; and Facebook has become part of my daily routine (Labrague, 2014).

### 3.4.1.2. Depression, Anxiety, Stress Scales (DASS-42)

The DASS is a 42-items questionnaire which holds three variables scale/depression, anxiety and stress/outline to measure the negative emotional states of depression, anxiety and stress. Each of the three scales has 14 items, divided into subscales of 2-5 items with the same content. The Depression scale assesses hopelessness, devaluation of life, inertia, self-deprecation, anhedonia, lack of interest/involvement, and dysphoria. The Anxiety scale measures situational anxiety, autonomic arousal, subjective experience of anxious affect and skeletal muscle effects. The Stress scale is sensible to levels of chronic non-specific arousal. It assesses nervous arousal, irritable/over-reactive, difficulty relaxing, being easily upset/agitated and impatient. Respondents requested to use 4-point severity/frequency scales to rate the extent to which they have actual feeling each state over the past week. The score for each of the respondents over each of the sub-scales will be evaluated as per the severity-rating (Labargue, 2014).

Table 2: The score interpretation of DASS-42 (Lovibond & Lovibond, 1995)

Level of Emotional States	Depression (D)	Anxiety (A)	Stress (S)
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Sever	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

### 3.5. Data Collection Procedure

After securing the approval of the proposal by advisor; the data was collected by using the questionnaire. The data was collect through the administration of a questionnaire demographic 9 items and to the scales 54 items in December first 2020. The researcher of this study followed the ethical considerations in order to feasible this study. Firstly, prepare the questionnaire/ scales in an organized way. Then the research proposed the scale/ questionnaire to the advisor and asked for approving. After approving the questionnaire; the researcher asked a request a permission letter from the Addis Ababa University; School of Psychology department for seeking of the work. Second, after securing approval; the researcher submitted the permission letter to the Polytechnic colleges by asking consent from the administrators. Thirdly, reproduced what the researcher wanted amounts to distribute the paper for the participants. Fourthly, to collect the information; the researcher gave an orientation to the researcher collaborative friends how to fulfill and distribute the questionnaire. After that the questionnaire was administered on the study sample in classroom settings. Purposes and importance of the study was explained to the respondents.

### 3.6. Pilot Test Result

Before the main data collection section were started the questionnaire were dispatched to the 50 students in polytechnic colleges. Through the reliability test of the questionnaire to FIS and DASS was 0.76 and 0.78(Cronbach Alpha) respectively.

Table 3: Reliability of the Tools

Pilot groups	Issues	Number of Items	Original reliability the items	Reliability of Items after piloting
Students	Test the reliability of FIS items	12	0.90	0.76
	Test the reliability of DASS items	42	0.89	0.78

### **3.7. Data Analysis**

After the data collected the analysis session was started. The data filled in the SPSS, version 20. Frequencies and percentages used in analyzing the select demographic data and respondents' responses to the Facebook Intensity Scale and DASS 42. Demographic factors on dependent variable analyzed by multivariate test. Pearson's coefficient of correlation (r) utilized to test the link between Facebook variables and negative emotional states variables like depression, anxiety, and stress. It predicted or estimated values of negative emotional states variables from Facebook variables. A p value  $\leq 0.05$  was considered statistically significant.

### **3.8. Ethical Consideration**

After observing of the overall situation and securing the endorsement of the polytechnic colleges, the researcher discussed and obtained the permission. Then, the questionnaire was distributed to the respondents. Confidentiality and anonymity of the respondents was been maintained throughout the investigation. The respondents assured about the usage and confidentiality of their responses. Then, written instructions were given to them along with the questionnaire. They were requested to read every items of the questionnaire carefully and also instructed to express their answer by in a circle the appropriate response in the table those were the best expression of their feelings. They also instructed not to skip any item in the questionnaire. All participants administered the questionnaire which took an average of ten minutes to complete. They were given thanks by the researcher for their cooperation in the study. Lastly, after collected the data the research was been gone to analysis and interpretation of the data.

## CHAPTER FOUR

### RESULTS

The questionnaires were dispatched and returned neatly for analysis session. To increase the return rate of the questionnaire the researcher distributed 387 Papers.

#### 4.1. Demographic characteristics of the study Participants

Table 4: Characteristic of the respondents

Characteristics	Categories/Choices	N (%)
Age	a. 17 – 24 years old	256 (71.1)
	b. 25-34 years old	104 (28.9)
	c. Above 35 years old	-
Gender	a. Male	211 (58.6)
	b. Female	149 (41.4)
Year level	a. Year 1	121 (33.6)
	b. Year 2	94 (26.1)
	c. Year 3	82 (22.8)
	d. Year 4	63 (17.5)

Fifty nine and Forty one percent of the students were male and female respectively and their age range between 17-34 years old. More than half the respondents (121, 33.6% and 94, 26.1%) were first and second year students.

## 4.2. Respondents' use of FB

Table 5: The respondents Facebook related Variables

Characteristics	Categories/Choices	N (%)
Do you have you Facebook account?	a. Yes, I have	360 (100.0)
	b. No, I haven't	-
How many years of you have been Facebook membership?	a. 1 year	24 (6.7)
	b. 2 years	31 (8.6)
	c. 3 years	26 (7.2)
	d. 4 years	66 (18.3)
	e. 5 years	75 (20.8)
	f. 6 years	59 (16.4)
	g. 7 years and above	79 (21.9)
Facebook Friends	a. 100 or less	3 (.8)
	b. 101-500	20 (5.6)
	c. 501-1000	32 (8.9)
	d. 1001-1500	41 (11.4)
	e. 1501-2000	60 (16.7)
	f. 2001-2500	53 (14.7)
	g. 2501-3000	62 (17.2)
	h. 3001 or more	89 (24.7)
Time Spent on FB (per day)	a. 0-30 minutes	67 (18.6)
	b. 31 minutes to 1 hour	87 (24.2)
	c. 1-2 hours	109 (30.3)
	d. 2-3 hours	64 (17.8)

The respondents answered to do you have you Facebook account; More than half respondents /n=264, 73.7/said that we had more than 1501 or 2000 Facebook friends.

Table 6: Comparison and Facebook use

Characteristics	Categories/Choices	N (%)
Did you compare yourself with others in Facebook use?	a. Yes	151(49.9)
	b. No	209(58.1)
You feel as low self-worth, worry and tense?	a. Yes	58 (16.1)
	b. No	302(83.9)

Table 6 showed that the respondents answer to the question “You feel as low self-worth, worry and tense?” respondents (302, 89.3) replied we had not felt as low self-worth, worry and tense. But respondents (58, 16.1) said that we had felt as low self-worth, worry and tense.

### 4.3. Percentage of the Facebook usage

Table 7: Responses of the respondents to the Facebook intensity scale

No	Statements	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)
1.	I use Facebook to find new friends	34 (9.4)	57 (15.8)	121 (33.6)	106 (29.4)	42 (11.7)
2.	I use Facebook to better understand the interests and activities of my friends	46 (12.8)	68 (18.9)	126 (35.0)	96 (26.7)	24 (6.7)
3.	Facebook accurately displays my relationships with others	46 (12.8)	73 (20.3)	119 (33.1)	95 (26.4)	27 (7.5)
4.	I use privacy settings to select what parts of my profile I share with others	35 (9.7)	51 (14.2)	84 (23.3)	85 (23.6)	105 (29.2)

5.	I use Facebook “Lists” to create different levels for friends like “Close Friends,” “Home Town Friends,” “College Friends,” etc.	49 (13.6)	68 (18.9)	133 (36.9)	89 (24.7)	21 (5.8)
6.	Facebook helps me feel closer to my friends	32 (8.9)	54 (15.0)	101 (28.1)	147 (40.8)	26 (7.2)
7.	Facebook is part of my everyday activity	58 (16.1)	115 (31.9)	95 (26.4)	62 (17.2)	30 (8.3)
8.	I am proud to tell people I'm on Facebook	68 (18.9)	122 (33.9)	105 (29.2)	47 (13.1)	18 (5.0)
9.	Facebook has become part of my daily routine	73 (20.3)	109 (30.3)	75 (20.8)	76 (21.1)	27 (7.5)
10.	I feel out of touch when I haven't logged onto Facebook for a while	71 (19.7)	106 (29.4)	87 (24.2)	67 (18.6)	29 (8.1)
11.	I feel I am part of the Facebook community	40 (11.1)	69 (19.2)	126 (35.0)	83 (23.1)	42 (11.7)
12.	I would be sorry if Facebook shut down	59 (16.4)	80 (22.2)	100 (27.8)	75 (20.8)	46 (12.8)

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According table 7 showed that the Facebook intensity scale (FIS) (n=148, 41.1%) of the respondents said that we used Facebook to find new friends. Among the respondents /n=122, 33.9%/ claimed that Facebook accurately displays their relationship with others. The response of respondents in using of Facebook /n=190, 52.8%/; used privacy setting to select what parts of their profile they share with others.

#### 4.4. The prevalence of depression, Anxiety, and stress

Table 8: The interpretation of depression, Anxiety, and stress prevalence

Emotional States	Level of Emotional States					Over all
	Normal	Mild	Moderate	Severe	Extremely Severe	
Depression	161(44.72)	117 (32.5)	80 (22.22)	2 (0.6)	0	199(55.32%)
Anxiety	126 (35)	42(11.67)	109 (30.28)	65 (18.06)	18 (5)	234(65.01%)
stress	276 (76.67)	67(18.61)	15 (4.17)	2 (0.6)	0	84(23.34%)

This table 8 reveals that the prevalence of depression, Anxiety, and stress among polytechnic college students. The respondents (depression =44.72%, anxiety=35% and stress = 76.67%) were free from depression, anxiety and stress symptoms. Prevalence rates of depression, Anxiety and stress among respondents were 55.32%, 65.01% and 23.32% respectively.

#### 4.5. The correlation of Facebook Intensity scale and DASS

Table 9: The correlation Matrix between respondents' selected Facebook variables and DASS/subscales

Variables		FIS	FB friends	Time spent on FB	Depression	Anxiety	Stress
FIS	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	360					
FB friends	Pearson Correlation	-.008	1				
	Sig. (2-tailed)	.882					
	N	360	360				
Time spent on FB	Pearson Correlation	.100	-.010	1			
	Sig. (2-tailed)	.059	.846				
	N	360	360	360			
Depression	Pearson Correlation	.155**	.049	.162**	1		
	Sig. (2-tailed)	.003	.355	.002			
	N	360	360	360	360		
Anxiety	Pearson Correlation	.138**	-.037	.145**	.518**	1	
	Sig. (2-tailed)	.009	.484	.006	.000		
	N	360	360	360	360	360	
Stress	Pearson Correlation	.110*	-.086	.089	.596**	.553**	1
	Sig. (2-tailed)	.038	.105	.092	.000	.000	
	N	360	360	360	360	360	360

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

\* . Correlation is significant at the 0.05 level (2-tailed)

This table 9 shows the correlation between respondents' selected variables, FIS and DASS/subscales. Pearson product moment correlation coefficients were calculated for selected Facebook variables and the DASS scores. A correlation coefficients of ( $r=0.155$ ,  $P=0.03$ ), and ( $r=0.138$ ,  $P=0.009$ ) and ( $r=0.110$ ,  $P=0.038$ ) were identified between FIS and emotional states of depression, anxiety and stress scales indicating a significant relationship respectively. Time spent on

Facebook correlated significantly with depression ( $r=0.162$ ,  $P =0.002$ ) and Anxiety ( $r =0.145$ ,  $P=0.006$ ). Number of Facebook friends and emotional states of depression ( $r =0.049$ ,  $p=0.355$ ), anxiety( $r =-0.37$ ,  $p=0.484$ ) and stress( $r =-0.086$ ,  $p=0.105$ ) did not have significant relationship. The three emotional states / depression, anxiety and stress/ correlated significantly.

Regression is more powerful than correlation to show strength of relationship. So in this study tried to show strength of relationship between Facebook us and depression, anxiety and stress by using linear regression.

#### 4.6. Linear regression of Facebook Intensity scale and DASS

Table 10: The linear regression of Facebook Intensity and DASS/subscales

##### 1. Depression

##### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	196.912	1	196.912	8.787	.003 <sup>b</sup>
	Residual	8022.618	358	22.410		
	Total	8219.531	359			

a. dependent variable: Depression

b. predictor(Constant),FIS

##### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.392	1.139	.155	5.612	.000
	Facebook Intensity	.094	.032		2.964	.003

a. dependent variable: Depression

This table indicated that Facebook intensity and depression have significant relationship ( $B=0.155$ ,  $P=0.003$ ).

As the table 10 analysis table P-value of relationship between Facebook intensity and depression is ( $P=0.003$ ) is less than the significance value 0.05, the result shows that there is significant evidence that relationship exists between individual Facebook intensity and

depression. Beta value of relationship between Facebook intensity and depression  $B=0.94$  is positive and it shows the positive relationship between the two variables.

## 2. Anxiety

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	236.803	1	236.803	6.925	.009 <sup>b</sup>
	Residual	12241.985	358	34.195		
	Total	12478.789	359			

a. dependent variable: Anxiety

b. predictor(Constant),FIS

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.482	1.407	.138	4.607	.000
	Facebook	.103	.039			.009
	Intensity				2.632	

a. dependent variable: Anxiety

This table 10 indicated that Facebook intensity and depression have significant relationship ( $B=0.138$ ,  $P=0.009$ ).

As the above analysis table P-value of relationship between Facebook intensity and depression is ( $P=0.009$ ) is less than the significance value 0.05, the result shows that there is significant evidence that relationship exists between individual Facebook intensity and Anxiety. Beta value of relationship between Facebook intensity and Anxiety  $B=0.103$  is positive and it shows the positive relationship between the two variables.

### 3. Stress

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	111.738	1		4.354	.038 <sup>b</sup>
	Residual	9188.237	358	111.738		
	Total	9299.975	359	25.665		

a. dependent variable: Stress

b. predictor(Constant),FIS

#### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.277	1.219	.110	6.790	.000
	Facebook Intensity	.071	.034		2.087	.038

a. dependent variable: Stress

Facebook intensity and stress have significant relationship (B=0.110, P=0.038).

The tables 10 showed that by calculating linear regression coefficients (Beta); there was a significant relationship between Facebook intensity, and emotional states of depression (B=0.155, p=.003), anxiety (B=0.138, p=.009) and stress (B=0.110, p=.038. 95% is the confidence interval for Beta. As the above analysis table P-value of relationship between Facebook intensity and depression is (P=0.038) is less than the significance value 0.05, the result shows that there is significant evidence that relationship exists between individual Facebook intensity and stress. Beta value of relationship between Facebook intensity and stress B=0.71 is positive and it shows the positive relationship between the two variables.

## 4.7. General linear model

### 4.7.1. Depression, anxiety and stress variation with age and gender

Table 11: Multivariate Tests Age

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	
Intercept	Pillai's Trace	.820	539.999 <sup>b</sup>	3.000	356.000	.000	.820
	Wilks' Lambda	.180	539.999 <sup>b</sup>	3.000	356.000	.000	.820
	Hotelling's Trace	4.551	539.999 <sup>b</sup>	3.000	356.000	.000	.820
	Roy's Largest Root	4.551	539.999 <sup>b</sup>	3.000	356.000	.000	.820
Age	Pillai's Trace	.012	1.421 <sup>b</sup>	3.000	356.000	.236	.012
	Wilks' Lambda	.988	1.421 <sup>b</sup>	3.000	356.000	.236	.012
	Hotelling's Trace	.012	1.421 <sup>b</sup>	3.000	356.000	.236	.012
	Roy's Largest Root	.012	1.421 <sup>b</sup>	3.000	356.000	.236	.012

a. Design: Intercept + Age

b. Exact statistic

This table 11 showed that there was no statistically difference the prevalence of depression, anxiety and stress between Ages by considering the mean value. There was no significant statistical differences among different Ages when considered jointly on the dependent variables such as stress and depression and anxiety Wilks  $\lambda=.988$ ,  $F(3,356) = 1.421$ ,  $p=0.236$ , partial square  $=.012$  separate ANOVA was conducted for each independent variables with each ANOVA. With each ANOVA evaluated at an alpha level of 0.05. And the mean value each dependent value didn't show any significant differences. And the observed covariance matrices of the dependent variables are equal across the groups.

#### 4.7.2. Variation of gender on dependent variables of Depression, Anxiety and Stress

Table 12: Multivariate Tests on gender

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	
	Pillai's Trace	.844	641.025 <sup>b</sup>	3.000	356.000	.000	.844
	Wilks' Lambda	.156	641.025 <sup>b</sup>	3.000	356.000	.000	.844
Intercept	Hotelling's Trace	5.402	641.025 <sup>b</sup>	3.000	356.000	.000	.844
	Roy's Largest Root	5.402	641.025 <sup>b</sup>	3.000	356.000	.000	.844
	Pillai's Trace	.013	1.550 <sup>b</sup>	3.000	356.000	.201	.013
	Wilks' Lambda	.987	1.550 <sup>b</sup>	3.000	356.000	.201	.013
Gender	Hotelling's Trace	.013	1.550 <sup>b</sup>	3.000	356.000	.201	.013
	Roy's Largest Root	.013	1.550 <sup>b</sup>	3.000	356.000	.201	.013

a. Design: Intercept + Gender

b. Exact statistic

This table 11 showed that there is no statistical difference the prevalence of depression, anxiety and stress between genders by considering the mean value. There was no significant statistical differences among different gender when considered jointly on the dependent variables such as stress and depression and anxiety Wilks  $\lambda=.987$ ,  $F(3,356)=1.55$ ,  $p=0.13$ , partial square  $=.013$  separate ANOVA was conducted for each independent variables with each ANOVA. With each ANOVA evaluated at an alpha level of 0.05. And the mean value each dependent value didn't show any significant statistical differences between gender differences. And the observed covariance matrices of the dependent variables are equal across the groups.

### 4.7.3. Variations of Time spent on Facebook and dependent variables

Table 13: Multivariate Tests on time spent on Facebook

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.832	581.482 <sup>b</sup>	3.000	353.000	.000	.832
	Wilks' Lambda	.168	581.482 <sup>b</sup>	3.000	353.000	.000	.832
	Hotelling's Trace	4.942	581.482 <sup>b</sup>	3.000	353.000	.000	.832
	Roy's Largest Root	4.942	581.482 <sup>b</sup>	3.000	353.000	.000	.832
	Pillai's Trace	.046	1.370	12.000	1065.000	.174	.015
Time spent on FB	Wilks' Lambda	.955	1.374	12.000	934.242	.172	.015
	Hotelling's Trace	.047	1.377	12.000	1055.000	.171	.015
	Roy's Largest Root	.037	3.274 <sup>c</sup>	4.000	355.000	.012	.036

a. Design: Intercept + Time spent on FB

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

The table 13 showed that there is no statistical difference the prevalence of depression, anxiety and stress between times spent on Facebook by considering the mean value. There was no significant differences among different years on Facebook when considered jointly on the dependent variables such as stress, depression and anxiety Wilks  $\lambda=.955$ ,  $F(12,934)=1.374$ ,  $p=0.172$ , partial square  $=.015$  separate ANOVA was conducted for each independent variables with each ANOVA. With each ANOVA evaluated at an alpha level of 0.05. And the mean value each dependent value didn't show any significant statistical differences between times spent on Facebook use differences. And the observed covariance matrices of the dependent variables are equal across the groups. There is no gender difference the time spent on Facebook use statistically.

## **CHAPTER FIVE**

### **DISCUSSION**

The major objective of the study was to investigate the effects of using Facebook on students' emotional states of depression, anxiety, and stress in the three Polytechnic colleges of Addis Ababa. In this study four research questions were covered and the major results of the study questions were discussed in the context of theoretical perspectives/journal review and empirical findings that were sat at review literature part as follows.

#### **5.1. General discussions about Facebook use**

Facebook is the appropriate social media among the Polytechnic colleges' students. The previous study indicated that in Philippines Facebook among adolescents, about 90% of its users are college understudies and spent 90 minutes on their Facebook account (Labrague, 2014). According to December 2019 report Facebook users' information in Ethiopia from the whole population, 6134 000 31% women 69% men are Facebook users. This accounted for 5.4% of its whole population (Facebook users' information report of Ethiopia, December 2019).

The present study pointed out that 100% respondents were Facebook users and spent time on Facebook. More respondents passed time on Facebook about 1-2 hours. The current study stated that the largest age group of Facebook user respondents was 17-24. The previous study indicated Facebook gives its users with a freedom to share data around themselves in their profiles, counting pictures, favorite music or recordings, and indeed their contact data. It is worth watching that about half of the time spent on social networks increased and vice versa. This may be due to the reality that contributing so much time on Facebook, similar to with other social media may increment the plausibility of experiencing negative comments, unequivocal news, and negative upgrades from Facebook companions that will trigger the developments of these emotional states. The highest number of age group Facebook users was 18-24(Labrague, 2014). Youth adults between 18-23 age ranges regularly encountered critical change in their lives. Many individuals are moving to college and taking off the boost framework of their domestic town for the primary time. This combined with the stress of living on own and going to college classes for the primary time, together with more prominent independence, can make these people create

a depression, without considering the impacts that Facebook can have (Tandoc, Ferrucci & Duffy, 2015).

The present study showed that there was no statistically difference on the prevalence of depression, anxiety and stress between ages by considering the mean value. Teenagers who utilized social media/Facebook at night experienced poorer rest quality, lower self-respect and higher levels of anxiety and depression (Woods & Scott, 2016).

The present study showed that more than half respondents had more than 1501 Or 2000 Facebook friends; and spent time more than 31 minutes and above per day to share, post, and see news. It may leads to develop negative emotional states when they get negative situations. This finding supported by studies Shaw, Timpano, Tran, & Joormann's study, conducted in 2015 (as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017) pointed out that Facebook allows for detached utilize by exploring through the site without posting or restricting to content. Inactive use incorporates perusing of news feeds (i.e., a collection of posts shared by companions), seeing through users' profiles, analyzing one's claim profile, and investigating old statuses or messages. Protection settings permit users to routinely alter who has gotten to, and who is blocked from seeing their shared content. And also, according to Tandoc, Ferrucci, & Duffy (2015); as cited in Yin et al. (2019), presentation to the positive post on Facebook may activate envy and lead to depression since the Facebook users post or share contents which can cause the user feeling repulsive for illustration the photo of a misfortune, children adorable, family savagery, assault or others news which will influence user's feeling without channel or analyze the reality of the news.

## **5.2. Gender and emotional states of depression, anxiety and stress**

According to researchers' comparison of both sexes; females are active users of Facebook than males. Female accounted around 60% of all Facebook users (Kiser, as cited in Simoncic, 2012). The present study indicated that there is no statically difference the prevalence of depression, anxiety and stress between genders. There was no statically significant difference among different gender when considered jointly on the dependent variables such as stress, depression and anxiety. And the mean value each dependent value didn't show any statically

significant differences between gender differences. Oppositely, according to the findings of Maglunog & Dy (2019), in terms of the relationship of sex category with depression level, there is a weak positive association between them. There are more female understudies who involve gentle and major depression levels than males. Peden, Rayens & Beebe's study, conducted in 2000(as cited in Maglunog & Dy, 2019) expressed that sex includes a critical part within the presence of depression in female students'. Generally, there was a significant difference in depression, anxiety and stress between males and females (Fedigan, 2018). Females were more likely to treat Facebook as a necessary portion of life to be mindful, self-presenters and data searchers than males (Biernatowska, Balcerowska, & Bereznowski, 2017). Similarly, Women are more likely to involve both sorts of anxiety than men (Farquhar & Davidson, 2014).

The current study indicated that that there is no statically difference the prevalence of depression, anxiety and stress between Ages. The highest distinction between men and women happens inside individuals age 25 to 34, where men lead by 1 400 000 (Facebook users' information report of Ethiopia, December 2019). The present study showed that there is no statically gender difference on the time spent on Facebook use. This finding contradicting by the previous studies there were no gender contrast views in terms of time investing in Facebook, being celebrity on Facebook or being Admirer page parted. This showed that sex is noteworthy variable in terms of utilizing Facebook. Females' subjective time investing in Facebook was higher than males' (Biernatowska, Balcerowska, & Bereznowski, 2017). Similarly, the Thompson & Loughheed's study, conducted in 20129(as cited in Biernatowska, Balcerowska, & Bereznowski, (2017) indicated that women spend a better rate of their everyday time on Facebook which isn't obvious when they are inquiring approximately the sum of minutes spent on the Facebook. Further, women report that they are more likely than men to spend a lot of time. This make them feel worried when they cannot get into Facebook and in some cases feeling dependent on it. The women students experienced fearing of missing out (FMO).

### **5.3. Time spent on Facebook and emotional states of depression, anxiety and stress**

The present study indicated that time spent on Facebook correlated significantly with depression and anxiety. The reverse was true for stress. In the support of current study, the longitudinal study indicated that the more individuals used Facebook, the worse they felt over time (Kross et

al., as cited by Robert, 2015). Similarly, Kross et al., (2013) indicated that more individuals utilized Facebook at one time point, the worse they felt the following time text-messaged to them; the more they utilized Facebook over two-weeks, the more their life fulfillment levels declined over time. Moreover, according to a study conducted by Steers, Wickham, & Acitelli (2014) upheld the idea that the longer one spends utilizing Facebook, the more prominent the possibility that they would engage in unrestricted upward social comparison and as a result involvement negative emotional state routinely and in this way increasing their hazard to depression. Roberts (2015), indicates that College students who use Facebook frequently inclined to social comparison, negative self-evaluation, rumination, envy or general feeling of inadequacy, it puts them at greater risk of developing depressive symptoms. Also, a Croatian study of Pantic et al. (2012) found that high school students' daily time spent on Facebook was definitely related with depression. These findings were reflected by Rosen, Whaling, Rab, Carrier, & Cheever, (2013), who found that participants who spent more time online and those who performed more Facebook picture administration prove more clinical indications of major depression. According to a study conducted by Muzaffar et al. (2018) stated that increased time spent per day on Facebook, leads to increase anxious arousal indications which is associated to increase Facebook behavior and repetitive behavior. Lastly, as is evidenced in literature and confirmed by the result that time spent on Facebook correlated significantly depression and anxiety.

The finding was consistent with study conducted by Labrague (2014) identified that time spent online correlated significantly with anxiety; markedly the amount of time spent on Facebook predicted higher levels of anxiety captured by depression, Anxiety and Stress Scale. In another way, the probability of creating depression and anxiety increases the time spent on Facebook. Also in the support of current study Maglunog & Dy (2019), pointed out the number of minutes spent on Facebook is directly related to the depression level. As the previous study, the present studying finding also did not showed time spent on Facebook correlated with stress significantly.

#### **5.4. Number of Facebook friends and emotional states of depression, anxiety and stress**

As it is evidenced in the literature and confirmed by the results number of Facebook friends and emotional states of depression, anxiety and stress did not have significant

relationship. According to relationship Labrague (2014), the number of Facebook friends and DASS had not a significant. But Labrague (2014) recommended that frequent overhauls from Facebook companions and the plausibility of experiencing negative comments may contribute to the development of negative feelings. Nevertheless, unlike the present finding, the study investigated stated that the individuals have higher levels of depression, anxiety and stress when they have high numbers of connections or number of Facebook friends (Fedigan, 2018). Moreover, according to Kalpidou, Costin & Morris (2011), college understudies who detailed having higher numbers of Facebook companions experienced a lower passionate alteration to college life. Similarly, a multivariate investigation by inquiring people demonstrated those individuals who have utilized Facebook longer concurred quite others were more joyful, and concurred that life could be less reasonable, and other people investing longer on Facebook each week concurred over others were more joyful and had way better lives. Moreover, those included more persons whom they did not really know as their Facebook friends concurred quite others had superior lives (Chou & Edge, as cited in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017).

The previous studies also explained that higher numbers of companions for Facebook users contribute to their stress level increase. Physiological markers of stress related to social media found that youth Facebook users with higher numbers of Facebook friends were found to have elevated cortisol levels, when controlling for sexual orientation, age, stress, and time the endocrinological sample was collected (Morin-Major et al., as cited in in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). According to a study conducted by Muzaffar et al. (2018) stated that the increased the number of Facebook friends leads to increase anxious arousal indications which is associated to increase Facebook behavior and repetitive behavior.

### **5.5. Compare the respondents themselves with others and emotional states of depression, anxiety and stress**

The present study result indicated that the high number of respondents did not compare themselves to others in their Facebook use. In opposite to this less than half respondents compare themselves to others in their Facebook use. Among the respondents who compare themselves to others sixteen percent of them felt as low self-worth, worry and tense. These are the symptoms of the respondents' emotional states of depression, anxiety and stress. The current study supported

by studies such as Steers, Wickham, & Acitelli (2014) found that Facebook may affect users' mental health when users tended to compare themselves with others. Their study shows that investing a part of time on the website had a remarkable association with the tendency to compare one to others. Since individuals feel depressed after investing an incredible deal of time on Facebook, They feel bad when they compare themselves to others. Researchers finding indicated that teenagers continually compare themselves to their peers and look for positive criticism from them, it is likely that increased use of Facebook may adversely influence their feelings when they get no or negative input (Harter, as cited in in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan,, 2017).

On the other hand, the Verduyn, Ybarra, Resibois, Jonides, & Kross (2017) findings indicated that passively using Facebook provokes social comparisons and envy. And also it makes social capital and fortifying sentiments of social connectedness. The finding of Roberts (2015) indicates that College students who use Facebook frequently inclined to social comparison, negative self-evaluation, rumination, envy or general feeling of inadequacy, it puts them at greater risk of developing depressive symptoms. In else way, according to Feinstien et al. (2013), examination of the tendency to contrarily compare one with others in Facebook use leads to increase in depressive symptoms. The negative social comparison would lead to extend in rumination; and this inactive and repetitive focus on trouble would in turn be related to depressive symptoms. According to Appel, Crusious, & Gerlach (2015), depressiveness is related to higher levels of jealousy which results from social comparison. Low self-esteem in depressed individuals' leads to upward social comparison and this make envy more likely. This impact ought to habitually happen in online social networks like Facebook since they permit for simple impression administration and give high comparison guidelines. The people compare themselves to the other profile owner and the result of this feeling of inferiority; and envy after utilizing Facebook leads to the Facebook users greatly vulnerable to encounter Facebook depression, which may likely increment their symptoms.

## **5.6. The relationship of Facebook use and emotional states of depression, anxiety and stress**

The present study indicated that the prevalence of depression, Anxiety, and stress among polytechnic college students. There were respondents who free from depression, anxiety and stress symptoms. In other side, there were prevalence rates of depression, Anxiety and stress among respondents. The prevalence rates percentages of them were more than half for depression and anxiety but little for stress. More percentage of the prevalence rates of depression and stress among respondents categorized to the level of emotional states of mild and moderate; but for anxiety most percentage is setting under moderate level of emotional States. There was rarely prevalence of depression and stress under severing level of emotional states. Anxiety had prevalence rate categorized under sever and extreme sever. The current study supported by World Health Organization (30 January 2020), depression is a common illness around the globe that influenced more than 264 million individuals. It is distinctive from normal mood changes and short-lived emotional reactions to challenges in standard of living. When long-lasting and with direct or serious intensity, depression may be gotten to be a real health condition. It can cause the influenced individual to endure incredibly and work ineffectively at work, at college and within the family. Above all depression can result in suicide. Approximately, about 800, 000 individuals die on because of suicide every year. Suicide is the second rank to reason of death in 15-29-year-old. Parekh (2017) stated that anxiety disorders are the foremost common of mental disorders and influence about 30 percent of grownups at a few points in their lives. But anxiety disorders are treatable and a number of viable medications are accessible. Treatment makes a difference most individuals' lead typical, profitable lives.

According to in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, (2017) stated that low self-esteem, poor issue understanding, skills, social hindrance, and a strong want are characteristics may predispose youths with anxiety clutters to encounter unique stresses while utilizing Facebook. Similarly, Parekh (2017) indicated that anxiety could be an ordinary response to stress and can be advantageous in a few circumstances. It can warn individuals to threat and offer assistance and to get ready and pay consideration. Anxiety disorders contrast from ordinary sentiments of apprehension or anxious, and include excessive fear or anxiety. Baum's study, conducted in 1990 (as cited in Hughes 2018) characterizes stress as an enthusiastic involvement

accompanied by unsurprising biochemical, physiological and behavioral changes. These physiological changes can be created through use of Facebook and there are a number of hypotheses as to why Facebook use may cause stress. According to psychologist Allen's study, conducted in 2017 (as cited in Yin et al., 2019), the clients said to her that Facebook makes them feel negative feelings such as pity, envy or may be plain fair not great sufficient. Facebook constantly keeps users to upgrade their sentiments, assortment of posts and inactive utilization of news. The larger parts of these upgrades are positive. When Facebook use contributes to negative self-image, low self-esteem, and envy; Facebook can get to be a terrifying part (Tandoc, Ferrucci & Duffy, 2015).

In the current study FIS and emotional states of depression, anxiety and stress scales have a significant relationship. The current study supported by Wang, Jackson, Zhang and Zu's study, conducted in 2012 (as cited in Faelens, Hoorelbeke, Fried, Raedt, & Koster, 2019) finding the indicators of Facebook utilize would be elevated depressive, anxiety, and stress related indications – by means of social comparison and self-esteem. Individuals, who report higher levels of Facebook utilize, encounter the next enthusiastic and more grounded got to be associated. This is the case for all sorts of Facebook utilize, since they all show a strong association with Facebook concentrated, which was in turn connected to the psychopathology indicators through social comparison and self-esteem. This is in line with past research findings, indicated that an increased have to be belong and an increased require for popularity were related with an increased utilize of Facebook. According to the previous studies the more frequent a student visit his/her Facebook account, the higher his/her depression level (Subrahmanyam, Smahel, & Greenfield, as cited in Maglunog & Dy, 2019). Similarly, Feinstien et al., (2013) indicated that Facebook utilization leads to increase depressive symptoms. Maldonado (2018) reviewed that Facebook has the power to influence one's mood and indeed spread temperament all inclusive. Also, Whiting & Williams's study, conducted in 2013 (as cited in Maglunog & Dy, 2019) indicated that Facebook users frequently engage in observation around others and this increases their depression level. According to Tandoc, Ferrucci & Duffy (2015) indicated that heavy users of Facebook experienced higher levels of Facebook envy and symptoms of depression than light viewers.

The previous study Graham's study, conducted in 2016 (as cited in Hughes, 2018) stated that in a commentary that Facebook may cause youth person's anxiety by advertising a stage that straightforwardly evaluates their fellowships, offers social comparisons and providing real time data almost social occasions that the person isn't portion of, these variables come together to create an inevitable world of steady social anxiety that can show for lengthened periods of time.

The following studies also indicated that the connection of Facebook use and negative emotional states. Maldonado (2018) reviewed that Facebook really can make individuals miserable. The Center Data Science Team on Facebook, Inc. by studies Kramer, Guillory, & Hancock's study, conducted in 2014 (as cited in in Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017) viewed that when positive expressions on an individual's Newsfeed were controlled to become decreased, individuals successively created less positive posts on their possess profile. Contrarily, when negative expressions were diminished, individuals created few negative posts. Minkel et al's study, conducted in 2012 (as cited in Hughes, 2018) also indicated the impacts of sleep deficiency on stress levels and found out that less sleep leads to high levels of stress when compares with a healthy sleep. This might be another contributing figure within the way Facebook affects stress levels.

The mentioned below studies reviewed that the Facebook use and depression issues. According to the review of Jacobson (2011) indicated that Facebook used as a strategy for recognizing depression. In other direction, the review of Jacobson (2011), Facebook has disadvantage that it enables the individuals to loss of human interaction and its substitution with online interaction; which they contend might be a conceivable trigger for depression. Evidence has been found of a remarkable relationship between Facebook habit, low-self-esteem, depression and lack of social abilities. The review of Day (2011) indicated that Facebook caused depression and influences the individuals' mood. When we feel others are more socially engaging than we are, we feel second rate and start jealous of their positive self-image. In numerous cases, this will contribute to the advancement of Facebook Depression.

Facebook use and negative emotional states have significant relationship. According to Roberts (2015) finding indicated that College students who have a high level of Facebook intensity are in danger of developing anxiety. Chen & Lee (2013) noticed that frequent Facebook interaction is linked with greater distress directly and indirectly by way of a two-step pathway that increases

communication overload and reduces self-esteem. According to the previous studies Facebook may lead the people to anxiety. It can keep positive and negative information of all individuals' online; it may expose the wrong doings of individuals and harm the positive images of users. These lead to anxiety provoking (Farquhar & Davidson, 2014).

According to the review of Maldonado (2018), Facebook can increase the amount of social anxiety an individual has upon meeting somebody for the main time. In opposite, Awing et al, (2017), states that Social anxiety had a weak relationship with Facebook concentrated utilization. An exploratory study propose there are different mechanisms through which Facebook may exacerbate anxiety in teenagers who have pre-existing anxiety disorders and subsequently may make them vulnerable to negative online encounters (Calancie, Ewing, Narducci, Horgan, & Khalid-Khan, 2017). The finding contradicted by the study of Labrague (2014) pointed that Facebook utilize isn't significantly connected to depression, anxiety, and stress.

In the present study the three emotional states /depression, anxiety and stress/ had significant relationship. The relationship is moderate. The present study supported by Wittchen, Kessler, Pfister, Hofler, & Lieb, (2000), recommended that most anxiety disorders are essential disorders that significantly increase the hazard for secondary depression. Relationships with social indices (e.g., separate rates, wrong doing rates) recommended that diminishes in social connectedness and increments in natural threats may be responsible for the rise in anxiety (Twenge, 2000). According to the review of Maldonado (2018) using of Facebook can increase people's stress levels, create anxiety and contrarily influence a person's sense of self. Using Facebook might cause an individual to develop a mental health disorder or worsen an existing one. Facebook increments people's anxiety levels by making them feel insufficient and creating abundance worry and stress. Utilizing Facebook can increase people's stress levels, deliver anxiety and adversely affect individuals' sense of self in their day.

The reliability of the current study of the Facebook intensity scale and the depression, anxiety and stress scales-42 were 0.81 and 0.85 respectively. According to the previous study Labargue (2014) approved that Facebook intensity scale for its reliability resulting in statistical value of 0.90 (Cronbach's alpha). And also, the previous studies Chorpita, korotisch and Barlow (1997) & Labrague (2014) approved that the depression, anxiety and stress scales-42 validated for its reliability resulting in statistical value of 0.89 (Cronbach's alpha).

## **CHAPTER SIX**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **6.1. Summary**

The objective of this research was to investigate the effects of using Facebook on students' emotional states of depression, anxiety, and stress among the three Polytechnic colleges of Addis Ababa. The current study conducted in the three polytechnic colleges and participants selected by simple random sampling. A descriptive correlational was employed as a research design to investigate this study. Linear regression and multivariate tests used to data analysis method. The data was analyzed by mean, Pearson's coefficient of correlation, regression coefficient/linear and multivariate tests.

The current study result indicated that Facebook use, and emotional states of depression, anxiety and stress have a significant relationship. Time spent on Facebook related significantly with depression and anxiety. Number of Facebook friends and emotional states of depression, anxiety and stress did have not any significant relationship. The three emotional states/ depression, anxiety and stress/ had significant relationship each other. The result also indicated that there was no statical difference on the prevalence of depression, anxiety and stress between genders. In addition, there was no gender difference statically on time spent on Facebook use.

#### **6.2. Conclusions**

From the data collected and analyzed the following conclusions have been drawn. This study investigated the association between Facebook use and emotional states of depression, anxiety and stress. Facebook use and emotional states of depression, anxiety and stress have a significant relationship. Time spent; and depression and anxiety have a significant relationship i.e. time spent on Facebook increases the occurrence of depression and anxiety. Stress and time spent on Facebook did not have a significant relationship. Facebook encourage and perpetuate negative emotional states i.e. depression, anxiety and Stress occurrence.

### 6.3. Recommendations

Based on the above conclusions the following recommendations have been forwarded.

- The TVET should work assessment to the way the students use of Facebook and awareness of the TVET communities should be well documented towards Facebook use mental health impacts and related problems.
- Help the students to enable to identify the advantage and disadvantage of Facebook use. In the future the colleges' administrators should work to create awareness to the effects of using Facebook on students' emotional states of depression, anxiety, and stress. Moreover, the teachers, parents and adopters must give awareness and make clear communication with the students about social media networks/technology usage especially Facebook and its effect on the mental health.
- Government policy makers should forward controlling and monitoring mechanism of Facebook to minimize its overall impact to the students' emotional states that happened due to over use of Facebook.

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## Appendices

### ANNEX 1: Instrument (English & Amharic Version)

**ADDIS ABABA UNIVERSITY**

**SCHOOL OF PSYCHOLOGY**

**COUNSELING PSYCHOLOGY MA PROGRAM**

#### **Dear respondents:**

This questionnaire is designed for the preparing a thesis on the title of Facebook use and students' emotional states of depression, anxiety and stress in selected Polytechnic colleges of Addis Ababa. The significance of this study is to assess Facebook use and students' emotional states of depression, anxiety and stress. The study will be used in order to suggest possible solutions for problems identified while conduct the study. The questionnaire has three parts: these are personal information; the Facebook intensity scale and depression, anxiety and stress 42 scales. In circle your answer from the given choices. The data acquired through this questionnaire are kept confidential and it's purely for academic purpose. Therefore, your genuine response is very crucial for the success of the research.

#### **Remarks:**

1. No need of writing your name on the questionnaire
2. The information you give will be used only for the purpose of this research work
3. Giving of all over information is based on your willingness.

If you have any question and comments, don't hesitate to contact the researcher with address.

**Email:**[Animutk2@gmail.com](mailto:Animutk2@gmail.com) **Mobile No:** [+251916988409](tel:+251916988409)

I would prefer to thanks earlier for your cooperation!

**Parts-1: Personal Information**

NO	Characteristics	Categories/Choices
1	Age	d. 17 – 24 years old
		e. 25-34 years old
		f. Above 35 years old
2	Gender	a. Male
		b. Female
3	Year level	a. Year 1
		b. Year 2
		c. Year 3
		d. Year 4
4	Do have you Facebook account?	c. Yes, I have
		d. No, I haven't
5	If your answer is yes for question number 4; how many years of you have been Facebook membership?	a. 1 year
		b. 2 years
		c. 3 years
		d. 4 years
		e. 5 years
		f. 6 years
6	Facebook Friends	g. 100 or less
		h. 101-500
		i. 501-1000

NO	Characteristics	Categories/Choices
		j. 1001-1500
		k. 1501-2000
		l. 2001-2500
		g. 2501-3000
		h. 3001 or more
7	Time Spent on FB (per day)	a. 0-30 minutes
		b. 31 minutes to 1 hour
		c. 1-2 hours
		d. 2-3 hours
		g. 3 or more hours
8	Did you compare yourself to others in Facebook use?	c. Yes
		d. No
9	If your answer is yes for question number 8; you feel as low self-worth, worry and tense	c. Yes
		d. No

### Part-2: The Facebook Intensity Scale

Please read each statement and the numbers 1, 2, 3, 4 or 5 which indicates how much the statement applied to you over the past week. In circle your answer from the given choices.

There is no right or wrong answers. Do not spend too much time on any statement.

No	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13.	I use Facebook to find new friends	1	2	3	4	5
14.	I use Facebook to better understand the interests and activities of my friends	1	2	3	4	5
15.	Facebook accurately displays my relationships with others	1	2	3	4	5
16.	I use privacy settings to select what parts of my profile I share with others	1	2	3	4	5
17.	I use Facebook "Lists" to create different levels for friends like "Close Friends," "Home Town Friends," "College Friends," etc.	1	2	3	4	5
18.	Facebook helps me feel closer to my friends	1	2	3	4	5
19.	Facebook is part of my everyday activity	1	2	3	4	5
20.	I am proud to tell people I'm on Facebook	1	2	3	4	5
21.	Facebook has become part of my daily routine	1	2	3	4	5

Please read each statement and the numbers 1, 2, 3, 4 or 5 which indicates how much the statement applied to you over the past week. In circle your answer from the given choices.

There is no right or wrong answers. Do not spend too much time on any statement.

No	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
22.	I feel out of touch when I haven't logged onto Facebook for a while	1	2	3	4	5
23.	I feel I am part of the Facebook community	1	2	3	4	5
24.	I would be sorry if Facebook shut down	1	2	3	4	5

**Part-3: Depression, anxiety and stress 42 scale/**

Please read each statement and the numbers 1, 2, 3, 4 or 5 which indicates how much the statement applied to you over the past week. In circle your answer from the given choices. There is no right or wrong answers. Do not spend too much time on any statement.

No	Statements	Level of Emotional States				
		Normal	Mild	Moderate	Severe	Extremely Severe
1.	I found myself getting upset by quite trivial things	0	1	2	3	4
2.	I was aware of dryness of my mouth	0	1	2	3	4
3.	I couldn't seem to experience any positive feeling at all	0	1	2	3	4
4.	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3	4
5.	I just couldn't seem to get going	0	1	2	3	4
6.	I tended to over-react to situations	0	1	2	3	4
7.	I had a feeling of shakiness (e.g., legs going to give way)	0	1	2	3	4
8.	I found it difficult to relax	0	1	2	3	4
9.	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3	4
10.	I felt that I had nothing to look forward to	0	1	2	3	4
11.	I found myself getting upset, rather easily	0	1	2	3	4
12.	I felt that I was using a lot of nervous energy	0	1	2	3	4
13.	I felt sad and depressed	0	1	2	3	4

## VII

Please read each statement and the numbers 1, 2, 3, 4 or 5 which indicates how much the statement applied to you over the past week. In circle your answer from the given choices. There is no right or wrong answers. Do not spend too much time on any statement.

No	Statements	Level of Emotional States				
		Normal	Mild	Moderate	Severe	Extremely Severe
14.	I found myself getting impatient when I was delayed in any way (e.g., lifts, traffic lights, being kept waiting)	0	1	2	3	4
15.	I had a feeling of faintness	0	1	2	3	4
16.	I felt that I had lost interest in just about everything	0	1	2	3	4
17.	I felt I wasn't worth much as a person	0	1	2	3	4
18.	I felt that I was rather touchy	0	1	2	3	4
19.	I perspired noticeably (e.g., hands sweaty) in the absence of high temperatures or physical exertion	0	1	2	3	4
20.	I felt scared without any good reason	0	1	2	3	4
21.	I felt that life wasn't worthwhile	0	1	2	3	4
22.	I found it hard to wind down	0	1	2	3	4
23.	I had difficulty in swallowing	0	1	2	3	4
24.	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3	4
25.	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3	4
26.	I felt down-hearted and blue	0	1	2	3	4
27.	I found that I was very irritable	0	1	2	3	4
28.	I felt I was close to panic	0	1	2	3	4

## VIII

Please read each statement and the numbers 1, 2, 3, 4 or 5 which indicates how much the statement applied to you over the past week. In circle your answer from the given choices. There is no right or wrong answers. Do not spend too much time on any statement.

No	Statements	Level of Emotional States				
		Normal	Mild	Moderate	Severe	Extremely Severe
29.	I found it hard to calm down after something upset me	0	1	2	3	4
30.	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3	4
31.	I was unable to become enthusiastic about anything	0	1	2	3	4
32.	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3	4
33.	I was in a state of nervous tension	0	1	2	3	4
34.	I felt I was pretty worthless	0	1	2	3	4
35.	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3	4
36.	I felt terrified	0	1	2	3	4
37.	I could see nothing in the future to be hopeful about	0	1	2	3	4
38.	I felt that life was meaningless	0	1	2	3	4
39.	I found myself getting agitated	0	1	2	3	4
40.	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3	4
41.	I experienced trembling (e.g. in the hands)	0	1	2	3	4
42.	I found it difficult to work up the initiative to do things	0	1	2	3	4

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**የካውንስሊንግ (የምክር አገልግሎት) ሳይክሎጂ የ2ኛ ዲግሪ ፕሮግራም**

ውድ ተሳታፊዎች፡-

የዚህ መጠይቅ ዋና ዓላማ የመመረቂያ ጽሁፍ ለማዘጋጀት ሲሆን የመመረቂያ ጽሁፍ ርዕስም በአዲስ አበባ በሚገኙ በተመረጡ የፖሊ. ቴክኒክ ትምህርት ቤቶች ውስጥ የፌስቡክ አጠቃቀም እንዲሁም የተማሪዎች የስሜት ሁኔታ፣ የድብርት (ዲፕሪሽን)፣ የመንፈስ ውጥረት እና የጭንቀት መጠን የሚል ይሆናል። በዚህም መሰረት በጥናቱ የፌስቡክ አጠቃቀምን እና የተማሪዎችን ስሜት ሁኔታ ማለትም የድብርት፣ የመንፈስ ውጥረት እና ጭንቀትን ለመለካት የሚረዳ ይሆናል። በዚህ ጥናት ላይም ለሚለዩ ችግሮች የተሻለውን መፍትሄ ለማስቀመጥ ይሞክራል። መጠይቁ ሶስት ክፍሎች አሉት፡ የመጀመሪያው የግል መረጃ፣ ሁለተኛው የፌስቡክ አጠቃቀም መጠን እንዲሁም ሶስተኛው ድብርትን፣ የመንፈስ ውጥረትን እና ጭንቀትን በ42 መለኪያዎች የሚታዩ ይሆናል። ምላሽዎን በማክበብ ይምረጡ። በዚህ ምርምር የሚገኙ መረጃዎች ሚስጥራዊነታቸው የተጠበቀ እንዲሁም ለአካዳሚክ አገልግሎት ብቻ የሚውሉ ይሆናል። በዚህ ጥናት ስኬትም እውነተኛ ምላሽዎን በመስጠት ይተባበሩ።

- ማሳሰቢያ፡-1. በዚህ መጠይቅ ላይ ስምዎትን መፃፍ አያስፈልግም።
- 2. በዚህ መጠይቅ ላይ የሚያሰፍሩት መልስ ለጥናቱ ብቻ ይውላል።
- 3. ምላሽዎን ሲሰጡም በበጎ ፍቃድዎ ይሆናል።

በዚህ ጉዳይ ላይ ማንኛውም ዓይነት ጥያቄ ወይም አስተያየት ካልዎት ከዚህ በመቀጠል ባለው መንገድ ያግኙን።

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ስለትብብርዎ በቅድሚያ ላመሰግንዎት እወዳለሁ።

**ክፍል 1 : የግል መረጃ**

ቁጥር	መለያዎች	ምድብ/ምርመራ
1	ዕድሜ	ሀ. ከ17-24 ዓመት
		ለ. ከ25-34 ዓመት
		ሐ.ከ35 ዓመት በላይ
2.	ፆታ	ሀ. ወንድ
		ለ. ሴት
3.	የስነተኛ ዓመት ተማሪ ነዎት?	ሀ. የ1ኛ
		ለ. የ2ኛ
		ሐ. የ3ኛ
		መ. የ4ኛ
4.	የፌስቡክ አካውንት አልዎት ወይ?	ሀ. አዎ ፣ አለኝ
		ለ. የለም፣ የለኝም
5.	ከላይ በተራ ቁጥር 4 ለተጠቀሰው ጥያቄ መልስዎ አዎ ከሆነ ለምን ያህል ጊዜ የፌስቡክ አባል ነዎት?	ሀ. 1 ዓመት
		ለ. 2 ዓመት
		ሐ. 3 ዓመት
		መ. 4 ዓመት
		ሠ. 5 ዓመት
		ረ. 6 ዓመት
		ሰ. ከ7 ዓመት እና በላይ
6.	ምን ያህል የፌስቡክ ባህሪዎች አሉዎት	ሀ. 100 ወይም ያነሰ
		ለ. 101-500
		ሐ. 501-1000
		መ. 1001-1500
		ሠ. 1501-2000

ቁጥር	መለያዎች	ምድብ/ምርጫ
		ረ. 2001-2500
		ሰ. 2501-3000
		ሸ. 3001 ወይም በላይ
7.	በቀን በፌስቡክ ላይ ምን ያህል ጊዜ ያሳልፋሉ	ሀ. 0-30 ደቂቃ
		ለ. 31 ደቂቃ እስከ 1 ሰዓት
		ሐ. 1-2 ሰዓት
		መ. 2-3 ሰዓት
		ሠ. 3 ወይም ከዛ በላይ ሰዓት
8.	ፌስቡክን ሲጠቀሙ ራስዎን ከሌሎች ተጠቃሚዎች ጋር ያወዳድራሉ?	ሀ. አዎ
		ለ. የሰም
9	ከላይ በተራ ቁጥር 8 ለተጠቀሰው ጥያቄ መልስዎ አዎ ከሆነ አወዳድረውስ የበታችነት፣ የመጨነቅ ወይም ውጥረት ውስጥ የመግባት ስሜት ያድርብዎታል?	ሀ. አዎ
		ለ. የሰም

**ክፍል 2: የፌስቡክ አጠቃቀም መጠን (ከፌስ ቡክ ጋር ያልዎት ቁርኝት)**

እያንዳንዱን መግለጫ አንብበው ባለፈው ሳምንት ውስጥ የእርስዎን ሁኔታ የሚገልፀውን ከ1፣2፣3፣ 4 እና 5 የመለኪያ መጠን ላይ መርጠው ትክክለኛውን ያስፍሩ። በዚህ ክፍል ውስጥ ትክክለኛ ወይም ሀሰተኛ ተብሎ የሚፈረጅ መልስ የለም። በአንድ ጥያቄ ላይ ብዙ ጊዜ በማሳሰል አያሳልፉ።

ቁጥር	መግለጫ	በጣም አልስማማም	አልስማማም	አስተያየት የለኝም	እስማማለሁ	በጣም እስማማለሁ
1	ፌስቡክን አዲስ ጓደኞች ለማግኘት እጠቀምበታለሁ	1	2	3	4	5
2	ፌስቡክን የጓደኞቼን ፍላጎት እና የዕለት ተዕለት እንቅስቃሴዎች በተሻለ ሁኔታ ለመረዳት እጠቀምበታለሁ	1	2	3	4	5
3	ፌስቡክ ከሌሎች ጋር ያለኝን ግንኙነት በትክክለኛ ሁኔታ ያንፀባርቃል	1	2	3	4	5
4	በፌስቡክ መገልገያው ላይ ያለውን የግል ሕይወት መጠበቂያ (ፕራይቪሲ) አማራጭን በመጠቀም ለሌሎች የማጋራውን መረጃ እቆጣጠራለሁ	1	2	3	4	5
5	በፌስቡክ “የጓደኞች ዝርዝርን” በመጠቀም “የቅርብ ጓደኞች”፣ “የትውልድ ቦታ ጓደኞች” ፣ “ኮሌጅ ጓደኞች” ወዘተ በማለት የተለያዩ ዘርፎች አመቻቻለሁ።	1	2	3	4	5
6	ፌስቡክን ስጠቀም ከጓደኞቼ የቀረብኩ ያህል ስሜት ይሰማኛል።	1	2	3	4	5
7	ፌስቡክ በዕለት ተዕለት የህይወት እንቅስቃሴዎቼ ላይ ቦታ አለው።	1	2	3	4	5
8	በፌስቡክ መጠቀሜን ለሰዎች ስናገር ኩራት ይሰማኛል።	1	2	3	4	5

**ክፍል 2፡ የፌስቡክ አጠቃቀም መጠን (ከፌስ ቡክ ጋር የልዎት ቁርኝት)**

እያንዳንዱን መግለጫ አንብበው ባለፈው ሳምንት ውስጥ የእርስዎን ሁኔታ የሚገልፀውን ከ1፣2፣3፣ 4 እና 5 የመለኪያ መጠን ላይ መርጠው ትክክለኛውን ያስፍሩ። በዚህ ክፍል ውስጥ ትክክለኛ ወይም ሀሰተኛ ተብሎ የሚፈረጅ መልስ የለም። በአንድ ጥያቄ ላይ ብዙ ጊዜ በማሳሳል አያሳልፉ።

ቁጥር	መግለጫ	በጣም አልስማማም	አልስማማም	አስተያየት የለኝም	እስማማለሁ	በጣም እስማማለሁ
9	ፌስቡክ የዕለት ተዕለት እንቅስቃሴ አንዱ አካል ሆኗል።	1	2	3	4	5
10	ለተወሰነ ጊዜ ከፌስቡክ ራቅ ስል ብዙ የቀረብኝ ያህል ይሰማኛል።	1	2	3	4	5
11	የፌስቡክ ማህበረሰብ አባል የመሆን ስሜት ይሰማኛል።	1	2	3	4	5
12	ፌስቡክ ቢዘጋ የማዘን ይመስለኛል።	1	2	3	4	5

**ክፍል 3፡ ድብርት፣ የመንፈስ ውጥረት እና ጭንቀት በ42 መለኪያዎች ሲታዩ**

እያንዳንዱን መግለጫ አንብበው ባለፈው ሳምንት ውስጥ የእርስዎን ሁኔታ የሚገልፀውን 0፣1፣2፣3 እና 4 የመለኪያ መጠን ላይ መርጠው ትክክለኛውን ያስፍሩ። በዚህ ክፍል ውስጥ ትክክለኛ ወይም ሀሰተኛ ተብሎ የሚፈረጅ መልስ የለም። በአንድ ጥያቄ ላይ ብዙ ጊዜ በማሳሰል አያሳልፉ።

ቁጥር	መግለጫ	የስሜት ደረጃ				
		መደበኛ	ዝቅተኛ	መካከለኛ	ከፍተኛ	በጣም ከፍተኛ
1	በረባ ባልረባው ጉዳይ እበሳጫለሁ	0	1	2	3	4
2	የአፍ መድረቅ ስሜት ይሰማኛል	0	1	2	3	4
3	ምንም ዓይነት በጎ የሆነ ስሜት ሊሰማኝ አይችልም	0	1	2	3	4
4	የመተንፈስ ችግር ይገጥመኛል (ለምሳሌ፡- ከመጠን በላይ የፈጠነ አተነፋፈስ፣ ምንም ዓይነት የሰውነት እንቅስቃሴ በሌለበት ትንፋሽ ማጣት)	0	1	2	3	4
5	ልቋቋመው የምችል አልመሰለኝም	0	1	2	3	4
6	ለአንዳንድ ነገሮች ያልተመጣጠነ ምላሽ እሰጣለሁ	0	1	2	3	4
7	የመንቀጥቀጥ ስሜት ይሰማኛል (ለምሳሌ እግሮቼ ይከዱኛል)	0	1	2	3	4
8	ዘና ወዳለ ስሜት ለመመለስ ይከብደኛል	0	1	2	3	4
9	ራሴን ውጥረት ውስጥ አገኘውና ከዛ ስወጣም ቀለል ይለኛል	0	1	2	3	4
10	ምንም ተስፋ አጣለሁ	0	1	2	3	4
11	በቀላሉ የመበሳጨት ስሜት ይሰማኛል	0	1	2	3	4
12	ራሴን አላግባብ ሳስጨንቅ አገኘዋለሁ	0	1	2	3	4
13	ሀዘን እና ድብርት ውስጥ እወድቃለሁ	0	1	2	3	4

**ክፍል 3፡ ድብርት፣ የመንፈስ ውጥረት እና ጭንቀት በ42 መለኪያዎች ሲታዩ**

እያንዳንዱን መግለጫ አንብበው ባለፈው ሳምንት ውስጥ የእርስዎን ሁኔታ የሚገልፀውን 0፣1፣2፣3 እና 4 የመለኪያ መጠን ላይ መርጠው ትክክለኛውን ያስፍሩ። በዚህ ክፍል ውስጥ ትክክለኛ ወይም ሀሰተኛ ተብሎ የሚፈረጅ መልስ የለም። በአንድ ጥያቄ ላይ ብዙ ጊዜ በማሳሳል አያሳልፉ።

ቁጥር	መግለጫ	የስሜት ደረጃ				
		መደበኛ	ዝቅተኛ	መካከለኛ	ከፍተኛ	በጣም ከፍተኛ
14	በማንኛውም ሁኔታ መጠበቅ ሲኖርብኝ ትግስት አጥቼ እገኛለሁ (ለምሳሌ በሊፍት ውስጥ ፣ በትራፊክ መብራት ወዘተ)	0	1	2	3	4
15	ራስን የመሳት ስሜት ይሰማኛል	0	1	2	3	4
16	ሁሉንም ነገር ችላ የማለት ስሜት ያድርብኛል	0	1	2	3	4
17	ለራሴ እንደሰው ያለኝ ክብራን አጣለሁ	0	1	2	3	4
18	ስሜት በቀላሉ የሚነካ ይመስለኛል	0	1	2	3	4
19	ምንም እንኳን አየር ሙቀት በሌለበት ወይም የአካል እንቅስቃሴ ሳለደርግ ብቀርም በከፍተኛ ሁኔታ ላብ ይስተዋልብኛል (ለምሳሌ፡- እጄ አካባቢ ያልበኛል)	0	1	2	3	4
20	ያለምን በቂ ምክንያት ፍርሃት ይሰማኛል	0	1	2	3	4
21	ተፈላጊነት አይሰማኝም	0	1	2	3	4
22	ራሴን ለማረጋጋት እቸገራለሁ	0	1	2	3	4
23	መዋጥ እቸገራለሁ	0	1	2	3	4
24	በምፈጽማቸው ጉዳዮች ላይ ምንም ዓይነት የመዘናናት ስሜት አላገኝም	0	1	2	3	4

**ድብርት፣ የመንፈስ ውጥረት እና ጭንቀት በ42 መለኪያዎች ሲታዩ**

እያንዳንዱን መግለጫ አንብበው ባለፈው ሳምንት ውስጥ የእርስዎን ሁኔታ የሚገልፀውን ከ0፣1፣2፣3 እና 4 የመለኪያ መጠን ላይ መርጠው ትክክለኛውን ያስፍሩ። በዚህ ክፍል ውስጥ ትክክለኛ ወይም ሀሰተኛ ተብሎ የሚፈረጅ መልስ የለም። በአንድ ጥያቄ ላይ ብዙ ጊዜ በማሳሰል አያሳልፉ።

ቁጥር	መግለጫ	የስሜት ደረጃ				
		መደበኛ	ዝቅተኛ	መካከለኛ	ከፍተኛ	በጣም ከፍተኛ
25	ምንም ዓይነት የአካል እንቅስቃሴ ሳላደርግ የልብ ምቴ ይማኛል (የልብ ምት መጨመር፣ የልብ ምት ቀጥ ማለት)	0	1	2	3	4
26	የተስፋ መቁረጥ እና የድብርት ስሜት ውስጥ መግባት	0	1	2	3	4
27	በቀላሉ እሰለቻለሁ	0	1	2	3	4
28	ከፍተኛ መዳናገጥ ውስጥ ለመግባት ቅርብ መሆን	0	1	2	3	4
29	የሆነነገር ካበሳጨኝ በኋላ ወደ ተረጋጋ መንፈስ ለመመለስ እችላለሁ	0	1	2	3	4
30	ተራ በሆነ ኃላፊነት የመበገር ስሜት ይሰማኛል	0	1	2	3	4
31	ተነሳሽነት አጣለሁ	0	1	2	3	4
32	ስራ ላይ ሳለሁ ካቋረጡኝ በቸልታ ማለፍ አልችልም	0	1	2	3	4
33	ወደ ነርቭ ውጥረት ውስጥ እገባለሁ	0	1	2	3	4
34	ዋጋ ቢስነት ይሰማኛል	0	1	2	3	4

**ድብርት፣ የመንፈስ ውጥረት እና ጭንቀት በ42 መለኪያዎች ሲታዩ**

እያንዳንዱን መግለጫ አንብበው ባለፈው ሳምንት ውስጥ የእርስዎን ሁኔታ የሚገልፀውን ከ0፣1፣2፣3 እና 4 የመለኪያ መጠን ላይ መርጠው ትክክለኛውን ያስፍሩ። በዚህ ክፍል ውስጥ ትክክለኛ ወይም ሀሰተኛ ተብሎ የሚፈረጅ መልስ የለም። በአንድ ጥያቄ ላይ ብዙ ጊዜ በማሳሰል አያሳልፉ።

ቁጥር	መግለጫ	የስሜት ደረጃ				
		መደበኛ	ዝቅተኛ	መካከለኛ	ከፍተኛ	በጣም ከፍተኛ
35	ከመስራው ሲያቋርጡኝ እበሳጫለሁ	0	1	2	3	4
36	ስቆቃ ውስጥ እገባለሁ	0	1	2	3	4
37	የወደፊት ተስፋ አልባነት ይሰማኛል	0	1	2	3	4
38	ሕይወት ትርጉም ታጣብኛለኝ	0	1	2	3	4
39	ራሴን እረፍት አልባ ሆኜ አገኘዋለሁ	0	1	2	3	4
40	መደናገጥ ውስጥ ገብቼ የሰው መቀለጃ ሆኜ እንደልገኝ እፈራለሁ	0	1	2	3	4
41	የእጅ መንቀጥቀጥ ያጋጥመኛል	0	1	2	3	4
42	ተነሳሽነት የማጣት ስሜት ያድርብኛል	0	1	2	3	4

**ANNEX 2: Sampling determination of the Krejcie & Morgan (1960) formula:**

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

Where as

S = required sample size.

$X^2$  = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be 0.50 since this would provide the maximum sample size).

D = the degree of accuracy expressed as proportion (0.05).

➤ So the sample size determination looks like as follows:

$$S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}$$

$$S = \frac{3.841 (5636) (0.5) (1-0.5)}{(0.05)^2 (5636-1) + (3.841) (0.5) (1-0.5)}$$

$$S = \frac{10,823.938 (0.5)}{0.0025 (5636) + 3.841 (0.5) (0.5)}$$

$$= \frac{5411.969}{14.09 + 0.96025}$$

$$= \frac{5411.969}{15.05025}$$

$$S = 359.59 \sim 360$$

### Sample size proportionate

- The sample size from each college calculated by sample size multiple by hundred and divided by the total population gives the obtained percent (Yamane, 1973) which is 6.39% (gotten by calculating  $360/5636*100 = 6.39\%$ ).

### Samples by gender

#### Entoto polytechnic college

$$\text{Male} = 1301 * 6.39 / 5636 = \mathbf{83}$$

$$\text{Female} = 576 * 6.39 / 5636 = \mathbf{37}$$

#### Tegibared polytechnic college

$$\text{Male} = 875 * 6.39 / 5636 = \mathbf{72}$$

$$\text{Female} = 697 * 6.39 / 5636 = \mathbf{67}$$

#### General Wingate polytechnic college

$$\text{Male} = 1132 * 6.39 / 5636 = \mathbf{56}$$

$$\text{Female} = 105 * 6.39 / 5636 = \mathbf{45}$$

### Total samples from each college

#### Entoto polytechnic college

$$1877 * 6.39 / 5636 = 119.94 = \mathbf{120}$$

#### General Wingate polytechnic college

$$2187 * 6.39 / 5636 = 139.69 = 139.69 = \mathbf{140}$$

#### Tegibared polytechnic college

$$1572 * 6.39 / 5636 = 100.45 = \mathbf{100}$$

**ANNEX 3: Multivariate tests**

<b>Descriptive Statistics</b>				
	Age	Mean	Std. Deviation	N
DASS	17-24	30.8906	13.31090	256
	25-34	30.1442	13.06921	104
	Total	30.6750	13.22770	360
Desum	17-24	9.9219	4.73305	256
	25-34	9.1058	4.88492	104
	Total	9.6861	4.78494	360
Stsum	17-24	10.7148	5.05118	256
	25-34	10.8654	5.20653	104
	Total	10.7583	5.08972	360

**Descriptive Statistics (The prevalence of depression, Anxiety, and stress between Male and Female)**

	Gender	Mean	Std. Deviation	N
DASS	Male	31.7393	12.39982	211
	Female	29.1678	14.22522	149
	Total	30.6750	13.22770	360
Desum	Male	10.0900	4.49088	211
	Female	9.1141	5.13405	149
	Total	9.6861	4.78494	360
Stsum	Male	11.1801	4.76253	211
	Female	10.1611	5.48101	149
	Total	10.7583	5.08972	360

<b>Descriptive Statistics</b>				
	Time spent on FB	Mean	Std. Deviation	N
DASS	0-30 minutes	26.4478	14.92129	67
	31 minutes to 1 hour	30.0575	13.32366	87
	1-2 hours	31.9633	12.47585	109
	2-3 hours	32.3125	12.07368	64
	3 or more hours	33.4545	12.52770	33
	Total	30.6750	13.22770	360
Desum	0-30 minutes	8.1791	5.07198	67
	31 minutes to 1 hour	9.2644	4.65423	87
	1-2 hours	10.3303	4.89341	109

	2-3 hours	10.2500	4.34979	64
	3 or more hours	10.6364	4.39331	33
	Total	9.6861	4.78494	360
	0-30 minutes	9.4776	5.66049	67
	31 minutes to 1 hour	11.0000	5.09446	87
Stsum	1-2 hours	11.1193	4.87002	109
	2-3 hours	10.8281	4.93628	64
	3 or more hours	11.3939	4.72321	33
	Total	10.7583	5.08972	360

### Descriptive Statistics(Time spent difference between Male and Female)

	Time spent on FB	Gender	Mean	Std. Deviation	N
Desum	0-30 minutes	Male	9.0500	4.65172	40
		Female	6.8889	5.47254	27
		Total	8.1791	5.07198	67
	31 minutes to 1 hour	Male	9.6078	4.38670	51
		Female	8.7778	5.03196	36
		Total	9.2644	4.65423	87
	1-2 hours	Male	10.7313	4.70841	67
		Female	9.6905	5.16786	42
		Total	10.3303	4.89341	109
	2-3 hours	Male	10.2500	4.06400	32
		Female	10.2500	4.68353	32
		Total	10.2500	4.34979	64
	3 or more hours	Male	10.9524	4.21279	21
		Female	10.0833	4.83281	12
		Total	10.6364	4.39331	33
Total	Male	10.0900	4.49088	211	
	Female	9.1141	5.13405	149	
	Total	Total	9.6861	4.78494	360
Ansum	0-30 minutes	Male	9.4250	6.17226	40
		Female	7.8148	6.40335	27
		Total	8.7761	6.26878	67
	31 minutes to 1 hour	Male	10.0980	6.12292	51
		Female	8.7778	5.80202	36
		Total	9.5517	5.99371	87
	1-2 hours	Male	10.7015	5.64349	67
		Female	9.9286	5.56729	42
		Total	10.4037	5.60112	109

	Male	9.9375	5.06689	32
2-3 hours	Female	11.9688	5.76689	32
	Total	10.9531	5.48137	64
	Male	12.6190	6.66690	21
3 or more hours	Female	9.5833	5.12495	12
	Total	11.5152	6.24560	33
	Male	10.3886	5.89840	211
Total	Female	9.6779	5.88662	149
	Total	10.0944	5.89575	360
	Male	10.2750	5.31562	40
0-30 minutes	Female	8.2963	6.04353	27
	Total	9.4776	5.66049	67
	Male	11.6863	4.84764	51
31 minutes to 1 hour	Female	10.0278	5.34248	36
	Total	11.0000	5.09446	87
	Male	11.2687	4.58119	67
1-2 hours	Female	10.8810	5.34745	42
	Total	11.1193	4.87002	109
Stsum	Male	10.6250	4.54192	32
2-3 hours	Female	11.0313	5.36707	32
	Total	10.8281	4.93628	64
	Male	12.2381	4.36926	21
3 or more hours	Female	9.9167	5.14266	12
	Total	11.3939	4.72321	33
	Male	11.1801	4.76253	211
Total	Female	10.1611	5.48101	149
	Total	10.7583	5.08972	360

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## Declaration

I, ANIMUT KELKAY, the under signed declare that this thesis is my original work that has not been used for the other thesis and all the sources of materials used for this thesis have been duly acknowledged.

Name: Animut Kelkay Ayenew    Signature-----    Date-----

This thesis has been submitted for the examination with my full approval as a university advisor.

Name: Dr.Tamirie Andualem    Signature-----    Date-----