

**MODERATING EFFECTS OF INSECURE  
ATTACHMENT STYLES ON THE  
RELATIONSHIPS BETWEEN SOCIAL  
NETWORKING SITE (SNS) USE AND ANXIETY  
AND DEPRESSIVE SYMPTOMS**

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**UNIVERSITI SAINS MALAYSIA**

**2023**

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by

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**Thesis submitted in fulfilment of the requirements  
for the degree of  
Master of Social Science**

**May 2023**

## **ACKNOWLEDGEMENT**

I would like to express my gratitude to my supervisor Dr Chooi Weng Tink for the precious guidance and mentorship, as well as to my co-supervisor Dr Suzanna Bono for her assistance in creation of the manuscript. I would also like to thank my dear family and friends for the support.

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## LIST OF ABBREVIATIONS

AAI	Adult Attachment Interview
ADHD	Attention deficit hyperactivity disorder
ANOVA	Analysis of variance
ARAS	Ascending Reticular Activating system
AQ	Attachment Questionnaire
BAS	Behavioral Activation System
BD	Beck's Depression Inventory
BFAS	Bergen's Facebook Addiction Scale
BIS	Behavioral Inhibition System
BSMAS	Bergen's Social Media Addiction Scale
CRF	Corticotropin-releasing factor
DASS	Depression Anxiety Stress Scale
ECR	Experiences in Close Relationship
ECR-R	Experiences in Close Relationship (Revised)
FBM	Fogg Behavioral Model
FFS	Fight-or-Flight System
FoMO	Fear of Missing Out
GAD	General anxiety disorder
GPIUS	Generalised Problematic Internet Use Scale
HPA axis	hypothalamic–pituitary–adrenal axis
LOC	Locus of control
OCD	Obsessive-compulsive disorder
PIU	Problematic Internet use
SNS	Social Network Site
SNW	Social Network Website
STAI	State-Trait Anxiety Inventory
SWLS	Satisfaction with Life Scale
USM	Universiti Sains Malaysia
U&GT	Uses and Gratifications Theory

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**KESAN MODERATOR GAYA IKATAN TIDAK KUKUH TERHADAP  
HUBUNGAN ANTARA PENGGUNAAN LAMAN RANGKAIAN SOSIAL  
(SNS) DENGAN SIMPTOM KEBIMBANGAN DAN KEMURUNGAN**

**ABSTRAK**

Semakin banyak kajian mencadangkan bahawa terdapat hubungan antara penggunaan Laman Rangkaian Sosial (SNS) dengan gejala kebimbangan dan kemurungan. Walau bagaimanapun, masih tidak jelas bagaimana penggunaan SNS dikaitkan dengan kebimbangan dan kemurungan. Kajian ini bertujuan untuk mengkaji hubungan antara penggunaan SNS, gejala kebimbangan dan kemurungan dan juga jenis gaya ikatan. Kajian ini dijalankan dalam kalangan orang dewasa bermunculan (N=200) berumur 18-25 tahun yang menggunakan Laman Rangkaian Sosial (SNS) setiap hari. Peserta menjawab soal selidik dalam talian yang merangkumi laporan penggunaan SNS, *Bergen's Social Media Addiction Scale*, *Depression Anxiety Stress Scale (DASS-21)* dan *Experiences in Close Relationships Survey-Revised (ECR-R)*. Kajian ini menerokai kaedah yang sesuai untuk mentakrifkan penggunaan SNS yang bermasalah atau berlebihan. Kajian ini juga mengkaji hubungan antara penggunaan SNS dengan simptom kebimbangan dan kemurungan. Selain itu, kajian ini menyiasat kesan gaya ikatan ke atas simptom kebimbangan dan kemurungan dan penggunaan SNS. Dua jenis gaya ikatan telah ditakrifkan oleh ECR-R, iaitu gaya ikatan mengelak dan gaya ikatan bimbang. Akhir sekali, kajian ini menguji kesan penyederhana, atau moderator gaya ikatan ke atas hubungan antara penggunaan SNS dengan simptom kebimbangan dan kemurungan. Kajian ini menggunakan pelbagai analisis termasuk korelasi Pearson untuk menguji hubungan antara semua pembolehubah, ANOVA satu hala untuk menguji kesan

penggunaan SNS ke atas simptom kebimbangan dan kemurungan, regresi linear untuk menguji kesan gaya ikatan ke atas simptom kebimbangan dan kemurungan, regresi logistik ordinal untuk menguji kesan gaya ikatan ke atas penggunaan SNS, dan analisis *Hayes Process 4* untuk analisis penyederhana. Penggunaan SNS tidak diramalkan oleh gaya ikatan bimbang atau gaya ikatan mengelak. Kajian ini juga mendapati bahawa gaya ikatan bimbang hampir menyederhanakan hubungan antara penggunaan SNS dan simptom kemurungan. Dari segi teori, kajian ini mencadangkan bahawa gaya ikatan boleh berfungsi sebagai *antecedent* simptom kemurungan dan penyederhana hubungan antara penggunaan SNS dengan simptom kemurungan. Hasil kajian ini menekankan kepentingan membina dan mengekalkan hubungan kasih sayang yang kukuh antara ibu bapa dengan anak kerana ia dapat meningkatkan ketahanan mental dan bertindak sebagai faktor pelindung terhadap kesan buruk penggunaan SNS.

**MODERATING EFFECTS OF INSECURE ATTACHMENT STYLES  
ON THE RELATIONSHIPS BETWEEN SOCIAL NETWORKING SITE (SNS)  
USE AND ANXIETY AND DEPRESSIVE SYMPTOMS**

**ABSTRACT**

A growing number of studies suggests a link between Social Networking Sites (SNS) use and anxiety and depressive symptoms. However, it is still unclear how SNS use is related to anxiety and depression. The present study sought to examine the relationship between SNS use, anxiety and depressive symptoms and attachment types. The study was conducted among emerging adults (N=200) aged 18-25 years old, who used Social Networking Services (SNS) daily. Participants completed an online survey that included self-reporting SNS use, the Bergen Social Media Addiction Scale, Depression Anxiety Stress Scale (DASS-21) and Experiences in Close Relationships Survey–Revised (ECR-R). This study attempted to provide an insight into how to define problematic or excessive SNS use, and also explored the relationships between SNS use and anxiety and depressive symptoms. Additionally, it investigated the effects of attachment on anxiety and depressive symptoms and SNS use. Two types of attachment were defined according to the ECR-R, which were attachment avoidance and attachment anxiety. Lastly, the present study tested moderating effects of attachment on the relationships between SNS use and anxiety and depressive symptoms. This study applied various analyses including Pearson correlation to test relationships between all of the variables, One-way ANOVA to test SNS use effect on anxiety and depressive symptoms, linear regression to test the effect of attachment on anxiety and depressive symptoms, ordinal logistic regression to test the effect of attachment on SNS use and Hayes



Process 4 analysis for the moderator analyses. The study findings suggested that depressive symptoms were significantly predicted by SNS use, attachment avoidance and attachment anxiety. SNS use was not predicted by attachment anxiety and attachment avoidance. The study also observed that only attachment anxiety marginally moderated the relationship between SNS use and depressive symptoms. Theoretically, this study demonstrated that attachment may play a function as both an antecedent of depressive symptoms and a moderator of the association between SNS use and depressive symptoms. Study findings also suggest the importance of creating and maintaining a nurturing caregiver-child relationship since it may increase mental resilience and act as a protective factor against the harmful effects of SNS usage.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

Since the introduction of the first Social Networking Site (SNS) called SixDegrees in 1997, the role of SNSs has evolved from a communication medium to a platform that facilitates almost all daily activities, both personal and professional. Today we spend more time on SNSs as it is often more convenient to find, share and discuss news from social networks rather than from television and newspapers. We changed our purchasing behavior from buying at physical stores to buying online after reading customer's reviews of products. Even the way we acquire our social circle has been affected by SNSs. For instance, individuals expand their professional network by finding colleagues and collaborators from all over the world through LinkedIn. Young people often have more friends online than in real life, especially gamers who meet other players on social networks such as Steam or Twitch. Society often chooses to express their opinions and criticisms on social networks which is made easier under fake identities. It could be argued that SNS has more benefits than drawbacks, and its immense presence and influence in modern life is undeniable, which should invite more research to investigate the plethora of its effects.

The term 'SNS' is often used interchangeably in literature with terms like 'social media'. However, social media refers to platforms such as YouTube or Pinterest, where users' content such as videos, photos, music or blog is emphasized. This research focuses on social network sites as it will look at the element of inter-

user communication facilitation, rather than the influence of the content on individuals. Popularity of certain SNSs may fluctuate with time, although platforms such as Facebook, Instagram and WeChat are currently one of the most popular globally by the number of users (Clement, 2019b).

The recent boom in smartphone and social media use globally has raised concerns from mental health experts about uncontrolled use, especially among adolescents and emerging adults. Various sources, academically and clinically, have suggested a detrimental effect of uncontrolled or excessive use of social network services (SNS). Though these services claim to increase global connectedness and encourage one's creativity and freedom of expression, recent observations suggested that there might be more harm than good when SNS use is not regulated. A growing body of research has suggested associations between excessive SNS use and problems such as decreased academic performance (Glass & Pan, 2014), relationship problems (Muisse et al., 2009), decreased well-being (Satici & Uysal, 2015), family loneliness (Ryan & Xenos, 2011), eating disorders (Mabe et al., 2014), problems with sleep (Koc & Gulyagci, 2013), and self-esteem (Saiphoo et al., 2019). Excessive SNS use was found to be related to mental disorders including ADHD, OCD, stress, anxiety and depression (Hussain & Griffiths, 2018).

Anxiety and depression are the most prevalent disorders in the general population, especially adolescents and emerging adults (Calancie et al., 2017). Anxiety can be described as feelings of worry, tension and unrest, and can be

accompanied by physical manifestations such as increased heartbeat, sweating, dizziness and other symptoms. Depression is characterised by prolonged feelings of sadness, grief, loss, guilt or anger. Severe and lasting cases of anxiety and depression may be diagnosed as mental health disorders. Decades of research in abnormal psychology strongly suggested that genetic and environmental factors collectively contribute to anxiety and depression. One's genetic blueprint may contribute to a vulnerability to develop a disorder, and importantly, environmental factors such as stress, trauma or lifestyle could trigger that vulnerability to develop into a serious disorder. This research is interested in the manifestations of anxiety and depressive symptoms, as opposed to the clinical conditions of anxiety and depressive disorders.

The increase in anxiety and depression incidences coincided with the increasing popularity and availability of SNS globally (Hidaka, 2012). Researchers suggested that individuals may tend to use social media as a way to escape from negative mood or stress (Marino et. al, 2016). Thus, users who may be vulnerable to anxiety and depression may be prone to use social media more than others. Also, individuals with anxiety and depression may be negatively affected by SNS use due to negative self-comparison, feelings of envy and other associated experiences online such as cyberbullying. Therefore, users with anxiety and depression may find themselves trapped in a vicious cycle of SNS use, trying to distract themselves from or avoiding negative states by resorting to escapism behavior, while at the same time, limiting interaction with real friends and family or processing their emotions in healthy ways.

However, scholars argue that the relationship between SNS use and anxiety and depressive symptoms is not as straightforward and might be affected by various underlying factors. The amount of SNS use and degree of negative effect caused by SNS use may be influenced by individual traits such as extraversion (Wang et al., 2018) or neuroticism (Andreassen et al., 2017), active or passive use of SNS (Liu et al., 2018), kinds of gratification (Lin et al., 2020), and other possible factors. Researchers have also highlighted the significance of early psychological development, particularly with regard to attachment types, and the advantages they have for a person's capacity to withstand stress and psychological distress. There is, however, a paucity of research that particularly examines the role of attachment in the association between SNS use and anxiety and depressive symptoms. The purpose of this study was to determine what constitutes excessive SNS usage based on an individual's own consumption goals and to determine if and how attachment dimensions, namely high attachment anxiety and high avoidance dimensions, moderate the associations between SNS use and anxiety and depressive symptoms.

## **1.2 Problem Statement**

The current era of rapid technological advances brought not only previously unimaginable opportunities, but also unique challenges of adaptation of that technology into our daily lives. Over 3.5 billion people globally were estimated to own a smartphone in 2020, while a significant population in Malaysia were estimated to have more than one smartphone (32 million of smartphone users per 32.7 million

population) (Nurhayati-Wolff, 2020; O’Dea, 2020). In the US, 95% of teenagers own a smartphone and the average age of ownership is 12 years old (Anderson & Jiang, 2018). Despite such popularity and availability of smartphones and SNS, their full effects on cognition, behavior, mental health and well-being are largely unexplored. Smartphone and SNS advertisements emphasize all the benefits one can gain from their use including connectedness with others. However, this instant connectedness with the online world makes us more and more disconnected from the world around us. For example, in a large representative study, Twenge and colleagues (2019) reported teenagers had spent less time ‘hanging out’ face-to-face with their friends since the 1970’s with a sharp decrease beginning in 2010, which coincided with the boom in SNSs. They reported that in 2017, only 28% of teenagers spent time with friends daily as opposed to 52% in 1970’s. The study authors also observed higher rates of loneliness in the past decade where 39% of teenagers reported feeling lonely in 2017 as compared to 22% in 2007 (Twenge et al., 2019).

Another unfortunate record of the past decade is the rising rates of anxiety and depression among adolescents and emerging adults. According to the National Survey on Drug Use and Health in the USA, depression rates increased from 8.7% to 13.2% among adolescents and from 8.1% to 13.2% among emerging adults, while the rates among the adult population remained about about constant (Twenge et al., 2019). Similarly, anxiety rates rose from 8.0% to 14.7% among individuals aged 18 to 25 years during the period between 2008 and 2018, and among older adults, anxiety rates increased from 5.4% to 9.4% (Goodwin et al., 2020). Researchers

partially attributed the rapid increase of anxiety and depression among emerging adults to increased SNS use, namely the exposure to negative global news, self-comparison, disconnectedness from the real world and smaller social circles (Twenge et al., 2019).

Researchers found an association between problematic or excessive SNS use and one's motivation to use SNS to avoid unpleasant mental states, such as anxiety and depressive symptoms. The current generation of emerging adults who adopt easily to new technologies and smartphone applications make it a habit to turn to SNSs at times of stress, boredom or negative moods. If managed well, social media can be a beneficial tool to relieve stress and to connect with others. However, use of SNS for escapism may be unhealthy coping behavior (Knobloch-Westerwick et al., 2009). For example, individuals who have work or family problems may want to distract themselves rather than process the emotions and find constructive solutions to the problem. Students who struggle with their studies might pass time on SNSs instead of preparing for the exams. Escaping from or numbing one's own feelings and emotions may rob individuals of the ability to recognize their feelings and deal with them in healthy ways. Moreover, individuals who prefer online contacts may become distanced from their physical friends and family, unsuspectedly becoming deprived of a real social support system.

Though there seems to be a positive bidirectional relationship between excessive SNS use and mental health problems, this relationship may not be

straightforward and could be moderated by other factors. One such factor could be attachment style. Attachment style was suggested to play a role in one's social adjustment and mental resilience – qualities that are much needed in an era of rising rates of mental disorders and loneliness. Unlike many personality elements, attachment styles could be modified and this may be harnessed to improve one's interpersonal relationships, cognition and behavioral patterns (Navarro-Gil et al., 2020; Olufowote et al., 2019). A recent study suggested the possible moderating role of the attachment on the relationship between SNS use and user's well-being (Young et al. 2020). However, further investigation is required to establish its role in moderating dysphoric states, particularly anxiety and depression. Agishtein and Brumbaigh (2013) claimed that collectivistic culture, country of origin and ethnicity may affect attachment style characteristics. The collectivistic culture and family structure in Malaysia carry a unique influence on parent-child interaction, thus attachment styles may have different manifestations, including manifestations in relation to anxiety and depression, that may have been different from parent-child interactions in individualistic cultures. According to Rothbaum and colleagues (2000), the percentage of children with secure attachment was greater in the US than it was in Japan, where insecure-avoidant attachment was more prevalent. They explained these discrepancies by pointing to cultural disparities in parenting ideologies and practices, such as the American focus on independence and self-reliance, and the Japanese emphasis on interdependence and harmonious relationships. Another study suggested that in collectivist cultures, the link between



attachment anxiety and depression might be weaker compared to the link in individualist cultures (Zheng et al., 2020). The current research proposes that attachment being an ‘internal working model’ is formed within close relationships but has an ability to impact how we perceive ourselves and others, similar to a conceptual lense through which one decides whether to trust others or beware. By this definition, one’s attachment style may influence one’s motivation to use social media to connect with social circles or distance themselves from the real world by escaping into the online world. The choice of SNS interaction may be similarly influenced by the user’s mental states such as anxiety and depressive symptoms that are interlinked with one’s idea of themselves and their environment.

The research exploring the interplay between attachment, anxiety and depression, and excessive SNS use is still in its early stages. This study emphasizes the need for a clear understanding of underlying mechanisms that affect the relationship between excessive SNS use, anxiety and depressive symptoms, such as insecure attachment which could in turn inform more effective interventions to address underlying issues. For example, interventions that focus solely on reducing SNS use without addressing the attachment and mental wellbeing may not be sufficient to improve long-lasting behavioral changes in individuals or alleviating negative effects of SNS use (Cunningham et al., 2021; Kim & Cha, 2016; Liu & Ma, 2019). Also, the lack of research in this area may perpetuate harmful societal norms and stigmas that surround anxiety and depression, and their relationship with SNS use. For instance, individuals may be more likely to blame themselves for their

mental health issues or uncontrolled SNS use rather than seeking appropriate support and treatment (Masood et al.,2020).

However, the growing demand for investigation of SNS effects on daily life brought methodological challenges for the research. Various studies have shown that the average amount of time spent online is increasing globally (Clement, 2019a). However, most studies investigating excessive SNS use are based on users' self-report (Kuss & Griffith, 2011; Scharkow, 2016). SNS users are not always able to objectively evaluate the time and frequency of their use (Lee et al., 2017). Thus, current methodologies should aim for more reliable and unbiased measures of actual SNS use. Also, researchers have not reached a consensus on what is problematic or excessive use and suggested evaluating SNS use against one's own consumption patterns or against a sample median, while others have suggested setting a threshold criterion based on normative data collected using specific tools that possess discrepancies in results when investigating criterion for excessive SNS use.

### **1.3 Research Questions**

The current study attempted to answer the following questions:

1. What is considered as “excessive” SNS use among individuals between 18 to 25 years of age?
- 2a. What is the effect of SNS use on anxiety symptoms?
- 2b. What is the effect of SNS use on depressive symptoms?

3a. What is the relationship between attachment dimensions and anxiety symptoms?

3b. What is the relationship between attachment dimensions and depressive symptoms?

4. What is the relationship between attachment dimensions and SNS use?

5a. Is there a moderating effect of attachment dimensions on the relationship between SNS use and anxiety symptoms?

5b. Is there a moderating effect of attachment dimensions on the relationship between SNS use and depressive symptoms?

#### **1.4 Research Objectives**

Specifically, the current study aimed to achieve the following objectives:

1. To identify and establish criteria for excessive SNS use using a self-report survey among individuals between the age of 18 and 25 years of age.

2a. To determine the effect of SNS use on symptoms of anxiety symptoms.

2b. To determine the effect of SNS use on depressive symptoms.

3a. To investigate the relationship between attachment dimensions and anxiety symptoms.

3b. To investigate the relationship between attachment dimensions and depressive symptoms.

4. To investigate the relationship between attachment dimensions and SNS use.

5a. To explore the moderating effect of attachment dimensions on the relationship between SNS use and anxiety symptoms.

5b. To explore the moderating effect of attachment dimensions on the relationship between SNS use and depressive symptoms.

## **1.5 Significance of Study**

There are varied definitions of “excessive use” in the literature of media psychology and specifically SNS. It is important to establish a standard definition of ‘excessive use’ especially in the Malaysian context because global averages of SNS use may vary among countries, and to have a universal cut off criteria may be inappropriate and irrelevant for individuals representing different cultural backgrounds and lifestyles. An established criterion for excessive or problematic use in a relevant context would be beneficial for parents and emerging adults as they begin to gain awareness of potential adverse effects of uncontrolled or excessive SNS use.

Despite a rich body of research investigating the relationship between excessive SNS use and mental health, it is still unclear why among some individuals SNS use is associated with undermined mental states and well-being, while for others it seems to improve their overall state and decrease feelings of loneliness. Problematic or excessive SNS use is a complex issue with various factors involved. To our knowledge, there are currently no studies that explored the role of attachment in relation to SNS use and anxiety and depression specifically. One may be engaged

in a vicious cycle of using SNS to alleviate negative states and boredom but potentially leads to worsening of underlying mental health symptoms. Attachment may play a buffering or triggering role that moderates the amount and outcome of SNS interaction for a user. As the rates of SNS use increase globally and mental issues of anxiety and depression are becoming widespread, it is important to further examine the bidirectional relationship between SNS use and anxiety and depressive symptoms, as well as to uncover factors that may influence this relationship.

## **1.6 Scope of Study**

The scope of the current study is to investigate the relationship between anxiety and depressive symptoms and SNS use among emerging adults in Malaysia aged 18-25. The study also explored the possible moderating role of one's attachment style in the relationship between SNS and anxiety and depressive symptoms. The study measured and compared actual SNS use and expected SNS use and subsequently, to propose a proper definition of the term 'excessive use'.

## **1.7 Conceptual Definitions**

### **1.7.1 SNS use**

Social Networking Sites (SNS) are online platforms that allow users to create a public or semi-public profile, share information, and interact with other users by adding them to their network or list of friends (Boyd & Ellison, 2007). SNSs

typically provide features that allow users to post status updates, share photos and videos, send private messages, and join interest-based groups.

### **1.7.2 Anxiety symptoms**

Anxiety symptoms refer to the physical, emotional, and cognitive manifestations such as (but not limited to) excessive worry, restlessness or feeling keyed up or on edge, being easily fatigued, difficulty concentrating or mind going blank, irritability, muscle tension, sleep disturbance (American Psychiatric Association, 2013).

### **1.7.3 Depressive symptoms**

Depressive symptoms are a variety of physical, emotional, and cognitive symptoms which include extreme sadness, losing interest or enjoyment from things, feeling worn out or low energy, feeling hopeless or guilty, insomnia or hypersomnia, having recurring thoughts of harming oneself or dying, among other symptoms. (American Psychiatric Association, 2013).

### **1.7.4 Attachment**

From early childhood and throughout adulthood, an individual and a caregiver create a psychological link known as attachment. It involves desiring to be close to and emotionally supported by the caregiver, as well as feeling secure in the caregiver's ability to meet their needs (Bowlby, 1969). A strong need for connection,

together with a fear of intimacy and vulnerability, are all symptoms of attachment anxiety, which is characterized by persistent and excessive worry about being rejected or abandoned by important people. Anxious attachment, a pattern of attachment that arises when caregivers are inconsistently present or attentive to the child's needs, is characterized by this key characteristic (Mikulincer & Shaver, 2016). The term “attachment avoidance” describes an aversion for emotional connection and closeness as well as a desire for independence together with an inclination to downplay emotional expression (Mikulincer & Shaver, 2016). Attachment avoidance develops when caregivers continuously ignore or reject a child’s demands (Mikulincer & Shaver, 2016).

## **1.8 Key Operational Definitions**

### **1.8.1 Excessive SNS use**

Excessive Social Network Site (SNS) was defined as SNS use that exceeds the amount of initially intended use (Cao et al., 2018). This could be indicated by a cut off score of 19 points or higher on the Bergen Social Media Addiction Scale as suggested by Bányai and colleagues (2017). The scale consisted of six items on a five-point Likert scale (See Appendix A). Participants were expected to evaluate each item on a scale from 0 “*very rarely*” to 5 “*very often*”.

### **1.8.2 Mismatch of ideal and actual SNS use**

Mismatch of ideal and actual SNS use was measured by identifying the difference or discrepancy between the intervals of ideal and current SNS use based on participants self-report.

### **1.8.3 Anxiety symptoms**

Anxiety symptoms were measured as the sum of scores on seven Anxiety items in the Depression Anxiety Stress Scale (DASS-21) (Lovibond & Lovibond, 1995), rated on a 5-point Likert scale, where 0 being “*Did not apply to me at all*” to 4 being “*Applied to me very much or most of the time*” (Lovibond & Lovibond, 1995). Scores between 10-14 on the anxiety scale indicate “*moderate anxiety*”, scores of 15-19 “*severe anxiety*”, and 20 and above indicate “*extremely severe anxiety*”.

### **1.8.4 Depressive symptoms**

Depressive symptoms were measured as the sum of scores on seven Depression items in the Depression Anxiety Stress Scale (DASS-21) (Lovibond & Lovibond, 1995), rated on a 5-point Likert scale, where 0 being “*Did not apply to me at all*” to 4 being “*Applied to me very much or most of the time*” (Lovibond & Lovibond, 1995). Scores of 14-20 on the depression scale indicate “*moderate depression*”, 21-27 “*severe depression*”, and 28 and above suggest “*extremely severe depression*”.



### **1.8.5 Attachment style**

Attachment is measured in terms of attachment anxiety (18 items) and attachment avoidance (18 items) dimensions using the Relationship Experiences in Close Relationships – Revised Questionnaire (ECR-R). The ECR-R questionnaire consisted of 36 items on a 7-point Likert scale with 1 “*strongly disagree*” and 7 “*strongly agree*” (See Appendix C). High attachment-related anxiety and avoidance scores ( $\geq 4$  averaged score) indicate insecure attachment, whereas low values ( $< 4$  averaged score) indicate secure attachment (Fraley et al., 2011).

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In this chapter, concepts such as SNS use, anxiety and depressive symptoms, and attachment style will be discussed in terms of their definition and associated theoretical backgrounds. A bi-directional relationship between SNS use and mental health will be also reviewed. This chapter also discusses the moderating role of attachment in the relationship between excessive SNS use and anxiety and depressive symptoms.

#### **2.2 Social Network Site (SNS)**

The age of modernity has ushered in our pervasive engagement in social network sites (SNS) or social media. SNS can be defined as ‘applications that enable users to connect by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending e-mails and instant messages between each other’ (Kaplan & Haenlein, 2010). However, such a simplistic definition does not represent the complexity of the online communication phenomenon.

##### **2.2.1 What is SNS?**

Social Network Site, Social Networking Site (SNS), or Social Network Website (SNW), are terms used to describe online platforms that facilitate

communication between its members. For example, SNS allows its users to create personal profiles, share various content, such as files, music, images, videos, and (micro) blogs, and engage in forms of entertainment, such as online games and forums. Boyd and Ellison (2007) defined SNS as online services that allow individuals to create a public profile, manage a list of friends and other contacts, and lists of other users. Similarly, Andrews (2010) claims that SNS must have all three features, which include creation of a profile with the information about the user, possibility of adding friends to a master list, and visibility of the friend list to other users who view the individual's profile.

Terms like “social media” and SNS are often used interchangeably in literature. However, researchers argue that they are different in their characteristics. For example, ‘social media’ is used with the emphasis on content creation and sharing (e.g., blogs, videos, photos) while SNS focuses on the connectedness of people within a virtual community (Boyd & Ellison, 2007; Kuss & Griffiths, 2017). Some of the popular platforms, such as Facebook, Instagram, and Twitter, have attributes of both SNS and social media. In this study, the term SNS will be used to describe the communication facilitating properties of such platforms rather than media and content influence on individuals. However, the influence of the latter phenomenon is not excluded from the overall context.

**Table 2.1** Types of SNS

<b>Type</b>	<b>Attributes</b>
Community (internet café or club)	Group of internet users who have common interests or similar hobbies to share information and to make relations with each other.
Mini-homepi (mini-homepage)	Personal cyber space that the person can manage, invite others, and post personal contents primarily, like a homepage.
Blog	Similar to mini-homepage, but more open to other users. Relatively specialized or objective contents are posted.
Micro-blog	A kind of blog. People share thoughts and feelings using a short sentence, like Twitter.
Profile-based service	Services that people can make relations using a profile including open personal information and posted contents, like Facebook.

*Note.* Adapted from “Do different types of SNS have different impacts on participatory social capital?” by Park et al., 2012, EGOVIS/EDM, *Lecture Notes in Computer Science*, vol 7452, Springer, Berlin, Heidelberg. [https://doi.org/10.1007/978-3-642-32701-8\\_20](https://doi.org/10.1007/978-3-642-32701-8_20)

### 2.2.2 SNS use

The use of media has experienced a rapid global growth. According to a worldwide survey, in 2018, internet users (aged 16 to 64 years) had an average of 8.5 social media accounts compared to 4.8 accounts in 2014 (Clement, 2019b). At the present, the average daily use of social media is estimated to be 136 minutes per day compared to 126 minutes per day in 2017 (Clement, 2019a). SNS users are mainly teenagers and emerging adults who spend on average more than 2 hours daily browsing through online media (Chaffey, 2020; Clement, 2019a; Kalpidou et al., 2011). A worldwide survey among 1060 parents and 1600 teens suggested that 92% of the surveyed teens reported going online daily, 24% of whom admitted going online impulsively or ‘almost constantly’ which was aided by the availability and easy access of smartphones (Lenhart, 2015). The same overview conducted in 2018

witnessed an increase to 45% of constant online users among 743 teens and 1058 parents (Anderson & Jiang, 2018).

### **2.2.3 Problematic SNS use**

As SNS becomes more available, researchers are concerned about the increasing amount of time spent on them and associated problems, such as addiction, compulsive use, decreased well-being, and others. There is now a growing body of research focused on problematic use of SNS, which utilizes a range of terms such as “addiction”, “dependency”, “problematic use”, and “excessive use” interchangeably. The current research will focus solely on “problematic” or “excessive” use of SNS. Although definitions of problematic SNS use may vary, most researchers suggest that it includes symptoms of distress and disruption of normal daily activities. For example, Glass and colleagues (2014) claimed that SNS use becomes problematic when one’s mental and emotional states as well as academic, professional, or social interactions are impaired by excessive use of the medium. Turel and Qahri-Saremi (2018) proposed that problematic use patterns are often characterized by unplanned or impulsive SNS use behaviors, which one engages in without reflection of the consequences (i.e. while driving, during class, etc.) that may have detrimental effects on one’s well-being. Another study defines problematic SNS use as unintentional and often spontaneous SNS use behaviors, which are not beneficial for the individual as they may cause harm to the user and bring criticism from the society (Turel & Qahri- Saremi, 2016). Moreover, some studies argue that since extensive use of

social media is becoming a norm, problematic use should be measured against the individual's own consumption patterns (LaRose et al., 2003). As SNSs are widely used for different purposes and often are part of formal communication and customer service, it becomes more difficult to delineate what is considered as healthy or unhealthy SNS consumption. For instance, Cao and colleagues (2018) claimed that excessive SNS use is determined by the degree to which the actual SNS use exceeds the amount of initially intended use. In other words, excessive SNS use is rather a self-regulation issue than a quantitative problem.

Some researchers described excessive use as a precursor for developing “bad habits,” which may often cause further addiction (Bozoglan et al., 2018; Elphinston & Noller, 2017; Osatuyi & Turel, 2018). Turel and Serenko (2012) argued that enjoyment may cause and reinforce the development of strong information systems (IS) use habit, which in turn leads to the development of high levels of technology addiction. This happens because individuals do not engage in full cognitive evaluation of their actions when a behaviour turns into a habit and begin using SNS semi-automatically. Habit-driven SNS use becomes less goal-oriented and more difficult to manage. In comparison to other age groups, adolescents and emerging adults are deemed to be more prone to bad habit development regarding excessive use of SNS.

Studies also differentiate between passive and active SNS use. Each type of activity may have different effects on individuals, such as loneliness and decreased well-being for passive use, as well as different motives for behavior, such as seeking

affection, passing time, and escapism (Chen et al., 2014; Matook et al., 2015; Wang et al., 2018). Active use is characterized by content creation (e.g., video, photos, blogs, etc.), interacting and meeting with friends, writing comments, joining interest groups, while passive use refers to observing content of other individuals without direct involvement (Pagani et al., 2011). Active Facebook use was found to decrease feelings of loneliness while passive Facebook use increased it (Burke et al., 2010; Frison & Eggermont, 2015). Shaw and colleagues (2015) found a correlation between passive Facebook use and increased social anxiety symptoms.

Another manifestation of problematic SNS use is maladaptive coping or escapism. Individuals tend to use social networks to escape or avoid daily stress, problems, unpleasant feelings, or even depression. Various studies claimed escapism to be a predictor of excessive SNS use (Ryan et al., 2014). Kircaburun and Griffith (2019) stated that escapism motives may influence more frequent use of SNS. For example, they claimed that introverts were involved in more problematic SNS use compared to extraverts because of the former's lower self-esteem and higher levels of loneliness (Kircaburun & Griffiths, 2019). Moreover, individuals suffering from over- or under-stimulation may use the internet as a relief mechanism (Chen et al., 2016). Jeong and colleagues (2016) found that stress may lead to excessive smartphone use as social media may be an avenue of stress relief. Tarsha (2016) also claimed that adolescents felt the urge to compulsively check social media to satisfy the feelings of emptiness, longing, and fear of isolation. Larose and colleagues (2003) stated that the transition towards problematic SNS usage may be created once SNS

related activities become a mechanism to relieve stress, loneliness, depression, and anxiety.

### **2.2.3(a) Problematic SNS use among emerging adults**

Researchers believe that adolescents and emerging adults are the most vulnerable age group for excessive SNS use. A growing body of research revealed possible underlying factors which might explain why emerging adults are at higher risk of excessive SNS use and its negative effects as compared to other age groups. For instance, Turel and Qahri-Saremi (2016) stated that university students might be prone to problematic social network use as they have more free time and lack of parental or organizational control over their use compared to other age groups. Similarly, Kuss and Griffith (2017) suggested that emerging adults are more at risk of SNS addiction symptoms as compared to older adults. They added that this susceptibility is exacerbated by the tendency of emerging adults to underestimate the severity of the problem. A study suggested that younger adults are willing to learn how to use new SNSs and generally adapt faster to new technology as compared to older age groups (Andreassen & Pallesen, 2014). Andreassen and colleagues (2017) argued that SNSs play an important role in social life while facilitating entertainment and leisure activities. SNSs act as a platform through which emerging adults can explore culture and construct their identities without supervision of authority figures (Andreassen et al., 2017). Another reason for higher SNS use among this age group is that unlike older adults, many adolescents and emerging adults often use a variety



of platforms, many of which are often curated for adolescent and emerging adult audiences (Smith & Anderson, 2018). Taking into consideration the evidence from the existing literature about the vulnerability of this age group, this study focused on SNS use among emerging adults of 18-25 years old.

#### **2.2.4 Etiology of problematic SNS use and associated theoretical models**

A growing body of research has investigated the possible mechanisms associated with the development of problematic SNS use. Theoretical models and concepts have been developed to explain this phenomenon. In this section, the role of SNS design in facilitation of continuous use will be discussed along with four theories, such as uses and gratifications, compensatory internet use, the dual-system, and cognitive-behavioral theory.

##### **2.2.4(a) The role of SNS design**

SNS platforms are partially responsible for excessive use and development of unfavourable behavioral patterns like using SNS while in class or before going to bed. The majority of social networks are designed to maximize users' involvement and interaction with the medium, making consumer behavior beneficial for marketing or other purposes of developers. Fogg (2009) proposed a behavioral model (FBM) that explains human behavior while interacting with persuasive technology, such as SNS. Fogg (2009) proposed that for a desired behavior to happen, factors, such as motivation, ability and triggers, must be present. The higher the motivation to do the