The Effect of the Fear of Missing Out Phenomenon in the Relationship Between Well-being and Social Media Addiction

Diana Nicoleta Doran[i]

University of Bucharest, Faculty of Psychology and Educational Sciences, Romania

Abstract

Introduction: Fear of missing out (FoMO) is described as a generalized fear that others might have rewarding experiences from which someone is absent, along with a desire to be continuously connected with what others are doing. Although FoMO is not necessarily an exclusive phenomenon for social networks users, people with high FoMO levels might feel compelled to check their social networks more frequently in order to be up to date with the plans and activities of their friends.

Objectives: The aim of the present study was to test the effect of the fear of missing out phenomenon in the relationship between well-being and social media addiction, but also to ascertain gender biases in a sample of 94 people (F=74, M=20).

Methods: Their level of social media addiction, well-being and fear of missing out were assessed using three measurement scales – Social Networking Addiction Scale (M. G. Shahnawaz and Usama Rehman, 2020), Psychological Well-Being (Ryff & Keyes, 1995), Fear of Missing Out Scale (FoMOs, Przybylski, Murayama, DeHann, & Gladwell, 2013).

Results: The results of the study show that the phenomenon of fear of missing out does not moderate the relationship between well-being and social media addiction, contrary to expectations. In terms of fear of missing out, women and men recorded relatively equal scores. In regards to well-being and social media addiction, there have been significant gender differences.

Conclusions: Along with the unexpected result of an absence of any significant relationship between social media addiction and well-being, a positive correlation has been noticed between social media addiction and the phenomenon of fear of missing out. Thus, according to the results, we conclude that the interaction between the predictor and the criterion is not stronger when people manifest a higher level of fear of missing out.

Keywords: online, social networks, addiction, FoMO

∗

∗   ∗

---

[i] Corresponding author: Diana Nicoleta Doran, Faculty of Psychology and Educational Sciences, University of Bucharest, 90 Sos. Panduri, District 5, Bucharest, Romania, 050663, email: dorandiana26@gmail.com.

I. Introduction

Social media exploits the need to belong that exists in varying degrees in individuals of all ages (Beyens, Frison & Eggermont, 2016; Nadkarni & Hofmann, 2012). In a generation that is characterized by the desire to be constantly connected, social networks allow users to permanently monitor their social networks, keeping up with every update or change (David, Roberts & Christenson, 2017; Roberts, Petnji YaYa & Manolis, 2014; Roberts & Pirog, 2013). As mentioned by Przybylski, Murayama, DeHaan and Gladwell (2013), social networks have a dual nature – they can open up multiple means of interaction, and/ or expose users to a wide range of interaction opportunities that are too numerous to follow. The fear of missing out phenomenon (FoMO) is best understood as "the pervasive apprehension that others might be having rewarding experiences from which one is absent and a desire to stay continually connected with what others are doing" (Przybylski et al., 2013, p. 1841). Three-quarters of young adults claimed to have felt the fear of missing out on the pleasant activities experienced by others and, most importantly, shared on social networks (Przybylski et al., 2013).

First of all, humans are social animals. Our innate need to belong is essential to our physical and mental well-being. A real or imaginary sense of social exclusion can have a negative impact on both our quantity and quality of life (Konrath, 2018). From an evolutionary perspective, social exclusion was often life-threatening; social groups that excluded individuals often became stronger together, while the excluded individuals died most of the time (Gruter & Masters, 1986). Indeed, the potential threat of social exclusion poses a significant threat to the innate need for belonging (Baumeister & Leary, 1995; Baumeister & Tice, 1990; Williams, 2007).

Previous research on the relationship between social media use and well-being has been equivocal. The intense use of social networks has been linked to a variety of negative psychological outcomes, including increased levels of stress, anxiety, depression, lower levels of self-esteem, reduced quality of relationships and lower quality of sleep, as well as increased suicidal ideas and suicidal events among adolescents (Adams & Kisler, 2013; Kross et al., 2013; Tromholt, 2016; Twenge, Joiner, Rogers & Martin, 2018; Woods & Scott, 2016). The use of social networks has also been linked to positive psychological outcomes, in particular, the building of social capital (Ellison, Steinfeld & Lampe, 2007; Green-Hamann, Eichhorn & Sherblom, 2011), self-esteem (Best, Manktelow & Taylor, 2014), connection with others (Sheldon, Abad & Hinsch, 2011) and decreased feelings of depression (Deters & Mehl, 2013).

Oberst, Wegmann, Stodt, Brand and Chamarro (2017) argue that the positive rewards associated with using social media can boost compulsive verification behaviors and overuse of social media, and ultimately hinder psychological well-being. The authors argue that, although it is not within the exclusive competence of users of social networks, FoMO could cause individuals to check their social network feeds more often in order to remain in constant contact with the activities of other important people. Clayton, Leshner and Almond (2015) conducted an experiment in which 40 iPhone users were randomly assigned to complete puzzles with or without phones in their possession. During one part of the task, the researchers called the phones of the study participants as a means by which to assess the impact of phone separation on well-being. The results revealed how phone separation has harmful effects on psychological outcomes (e. g. state anxiety) as well as on physiological outcomes, including increased heart rate and blood pressure.

Using an experimental design, Deters and Mehl (2013) tested the effect of posting status updates on Facebook on psychological well-being and found that posting status updates on Facebook reduces loneliness. The authors postulated that the decrease in reported loneliness was due to a feeling of better connection with friends.

"These findings are consistent with research that has shown that the simple act of sharing personal information illuminates the reward areas of the brain; in particular, important neurochemical releases occur when we share personal information (which is greatly improved by the variety of social networks available)" (Richtel, 2014, apud Roberts & David, 2019). In general, it is assumed that FoMO is positively associated with the intensity of social networks, but negatively associated with feelings of social connection and psychological well-being.

Fear of missing out

Although FoMO is not necessarily a phenomenon exclusive to social media users, people with high FoMO levels may feel compelled to check their social networks more often in order to keep up to date with the plans and activities of their friends. To this day, FoMO has aroused more interest in the media than in scientific publications. Although there is still very little literature available about this relatively new concept and its theoretical bases, some academic publications have

shown that FoMO is a mediator variable between personal characteristics and psychological needs of involvement in social networks. It was proposed that FoMO could serve as a mediator, linking deficits in psychological needs with involvement in social networks, and FoMO was also proved to be a mediator between different indicators of well-being (needs satisfaction, general mood and life satisfaction) and social network involvement (Przybylski et al., 2013).

FoMO in adolescence

FoMO would explain the tendency of people with chronic deficits in meeting psychological needs to constantly look for updates and possibilities to engage on social networks, even then when this occurs in potentially inappropriate or dangerous situations, e. g. while driving (Przybylski et al., 2013), attending class (Alt, 2015; Turkle, 2011) or in a face-to-face conversation (Chotpitayasunondh & Douglas, 2016). Adolescents with psychopathological problems (especially anxiety and depression) could also develop higher FoMO levels due to perceived social deficits. Being connected and accepted by peers is of utmost importance in adolescence (Desjarlais & Willoughby, 2010), therefore social networks are especially attractive to these younger individuals, in order to offer them higher levels of social involvement. Using social networks, these teenagers may be able to satisfy their need for belonging, but they also have a higher risk of suffering from anxiety when they have the feeling that they do not belong and that they are losing important shared experiences.

FoMO and personality traits

It was discovered that people with different personalities use social networks for different purposes. Extrovert individuals use them for social improvement, that is, to improve their social value, while introverts use social networks for social compensation, that is, to compensate for the lack of offline friends (Bibby, 2008; Kuss & Griffiths, 2011). Over time, conclusions about personality traits have been subject to change as social media has developed. In 2002, Amichai-Hamburger et al. found that people with a higher level of introversion and neuroticism were the most active users of social networks. It has been suggested that these individuals have difficulties in making solid social connections in real life, and therefore prefer the virtual company, a situation where they feel more confident. However, more recent research has found that extroverts were the most involved in social networks. It was concluded that, as social networks have moved away from anonymity to 'onimity', extroverts use

this to improve their current relationships by socializing with existing friends (Lampe, Ellison & Steinfeld, 2009). Research has found that three personality traits correlated with time spent using social networks are neuroticism, extraversion, and openness (e.g., Bibby, 2008; Ross et al., 2009). Correa et al. (2010) also found that openness and extroversion were positively linked to the use of social networks and that emotional stability was negatively correlated with the use of social networks.

Self-determination Theory

Self-determination Theory (SDT; Deci & Ryan, 1985) is a macrotheory of human motivation that provides a useful perspective for framing an empirical understanding of FoMO. According to SDT, psychological health is based on the satisfaction of three basic psychological needs: competence – the ability to act effectively on the world; autonomy – personal initiative; and relationship – closeness or connection with others. Research conducted in the fields of sports (Hagger & Chatzisarantis, 2007), education (Ryan & Deci, 2000) and video games (Przybylski, Weinstein, Ryan & Rigby, 2009) indicates that meeting basic needs is strongly associated with proactive behavioral regulation. Through this theory, the FoMO phenomenon can be understood as a phenomenon of self-regulation arising from situational or chronic deficits in the satisfaction of psychological needs.

FoMO and social media addiction

Using a sample of 296 Israeli students, Alt (2015) found that FoMO leads to increased use of social media in the classroom. FoMO has been found to mediate the impact of both academic motivations and the use of social media. Studying the use of smartphones and the FoMO phenomenon in a sample of 296 students, Wolniewicz, Tiamiyu, Weeks and Elhai (2018) found that FoMO was positively associated with problematic use of smartphones.

Similar research conducted by Makki, DeCook, Kadylak and Lee (2017) focused on the Snapchat app and found that the use of the social media platform was associated with the innate desire of individuals to be accepted, affiliated and connected with others. Indeed, the Belonging Hypothesis explains that "human beings have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive and significant interpersonal relationships" (Baumeister & Leary, 1995, p. 497).

The need to belong, Baumeister and Leary argue, is an innate human motivation that drives much of our interpersonal behavior. Thus, FoMO is likely to

stimulate the use of social networks. Additional support for this prediction is provided by The Information Foraging Theory.

The Information Foraging Theory

The Information Foraging Theory explains that, from an evolutionary perspective, people have an innate desire to search for information (Gazzaley & Rosen, 2016). Just like animals looking for food (Muntinga & Taylor, 2018), people are constantly looking for information – especially in terms of their relationships with others. Social networks address this important need by providing access to information about others that fuels an instinctive need for information about our relationships. The number of hours spent on social media can be explained, especially for teenagers and young adults, by an intense desire to gather information that signals someone's place in the social hierarchy (Roberts et al., 2014; Whiting & Williams, 2013). Trepass (2018) argues that intelligence-seeking activity can be considered a rational and goal-driven activity at all levels of granularity.

FoMO and well-being

Przybylski et al. (2013) investigated the emotional and behavioral correlations of FoMO in a sample of young adults and concluded that, while FoMO is positively associated with greater Facebook use, it is also associated with worse moods and lower levels of life satisfaction. Similarly, research with a nationally representative sample of 2,079 British adults assessed the correlation between FoMO and the variables of psychological needs for autonomy, competence and relationship, and well-being, and found that all three psychological needs were inversely associated with FoMO (Przybylski et al., 2013). As these needs remained unmet, FoMO grew accordingly.

Based on the above, it can be assumed that FoMO is negatively associated with feelings of social connection and psychological well-being. It is important, however, that further research and empirical findings seem to suggest that FoMO may, in some situations, favor social connection, in which case it may not be harmful to well-being. Specifically, and as discussed below, the intensity of social networks probably plays a key role in mediating between FoMO and both social connection and well-being.

Social media addiction

The term 'social media' refers to the different internet-based networks that allow users to interact with others, verbally and visually (Carr & Hayes, 2015). According to the Pew Research Center (2015), at least 92% of teenagers are active on social media. Lenhart, Smith, Anderson, Duggan and Perrin (2015) identified that the majority of social media users fall into the 13-17 age group, with 87% having access to a computer and 58% to a tablet. Nearly three-quarters of teenagers between the ages of 15 and 17 use a smartphone, and the percentage of those aged 13 to 14 is 68%.

Negative aspects

Parents and teachers are more worried about the possible negative consequences of the excessive or non-adaptive use of these technologies and their applications by children and teenagers. Longitudinal studies show that psychiatric symptoms are important predictors of internet addiction (Ko et al., 2009), especially depressive symptoms (Gamez-Guadix, 2014). In another longitudinal study, frequent online communication in real time, but not emailing, was positively linked to the compulsive use of the Internet six months after the initial assessment (Van den Eijnden et al., 2008). More recently, internet-based mobile phones (smartphones) and online social networking sites (SNS) have become, together with online video games, the main focus of these concerns.

The positive aspects of online social networks, despite the rewarding nature of this social monitoring, can lead to the appearance of compulsive verification behaviors and excessive employment in social networks, and therefore to negative psychological consequences. Research has provided clear evidence that overuse or unadapted use of Information and Communications Technology (ICT) can have negative effects on the well-being and psychological functioning of children, teenagers and young adults (Brooks, 2015; Fox & Moreland, 2015; Kross et al., 2013; Rosen et al., 2013; Sampasa-Kanyinga & Lewis, 2015). As for the SNS, maladaptive use has been identified as a potential mental health problem (Kuss & Griffiths, 2011). Parents usually worry that their teenage children are 'caught up in Facebook' and spend too much time on the SNS and with their smartphones so that they get less involved in their real environment and with school issues. There are several studies that show an association between the time spent on the SNS and the lower averages of the grades (Kirschner & Karpinski, 2010), a lower connection with colleagues (Barker, 2009), a lower self-esteem (Kalpidou, Costin & Morris, 2011), and greater depression (Lin et al., 2016; Pantic et al., 2012).

Extraversion and neuroticism

The extraversion has proven to be positively linked to both the use of social networks and addiction trends (Kuss & Griffiths, 2011; Ryan & Xenos, 2011; Wilson, Fornasier & White, 2010). Extroverts seem to use social networks to improve their social connections (Kuss & Griffiths, 2011). Neuroticism has also been shown to be positively associated with the use of social media (Tang et al., 2016) and internet addiction (Andreassen et al., 2013; Tsai et al., 2009). People with neuroticism may be enticed to use social networking sites like Facebook because they hope to receive feedback and validation from others, and because it is easier for them to communicate through a screen than to communicate face to face (Kandell, 1998).

Social media addiction and attachment types

Since social networks are generally used to maintain and develop relationships, attachment styles can affect their uses.

People with an anxious attachment style are insecure in relationships and often seek tranquility. They can use social networks to maintain relationships and seek social feedback. Moreover, communication through social networks can help those who are anxious to spend more time thinking about what they want to say and avoid the awkward pauses that can occur in real conversations (Kandell, 1998). Research has found that anxious attachment style is related to the use and search for feedback on social networks (Hart et al., 2015; Oldmeadow, Quinn & Kowert, 2013). The relationship between anxious attachment and social media addiction is less clear. While some research has found that anxious attachment is linked to problematic internet use and internet addiction (Lin, Ko & Wu, 2011; Schimmenti et al., 2014), another study found no differences between attachment styles regarding social media dependency (Baek, Cho & Kim, 2014).

People with an avoidant attachment style consider themselves self-sufficient and avoid intimacy and closeness. One could assume that they do not want to use social networks, since they may not be interested in developing and maintaining relationships. However, social networks can be used by those with avoidant attachment style as a way to keep people in their lives, but at a distance (Nitzburg & Farber, 2013). In some research, avoidant attachment style has been associated with less use of social media (Hart et al., 2015). However, other research found that those who were both anxious and avoidant used social networks more than those who were exclusively avoidants (Baek et al., 2014).

Impaired sleep

Social networks now play a central role in teenagers' lives, with recent research bringing to light both positive and negative results of this shift towards online social interaction (Deters & Mehl, 2013; Lenhart, 2015; Vorderer, Kromer & Schneider, 2016; Woods & Scott, 2016). One aspect of concern for parents, teachers and health professionals is the potential negative impact on sleep – as getting enough sleep and good sleep quality is crucial for the health, well-being and school performance of teenagers (Owens, 2014). Teenagers who use social networks more (especially around bedtime) tend to have a worse night's sleep (Woods & Scott, 2016).

Young people report feelings of disconnection when they do not have access to online communication, preferring to keep their phones on hand at night (Vorderer et al., 2016). This desire to be constantly connected and the anxiety of missing out on events when they are offline are aspects that can make it very difficult for teenagers to withdraw from social networks before bedtime (Woods & Scott, 2016).

Social media and mental health issues

The link between social networks and mental health issues is not simple, having various contributory factors. A report by the Royal Society of Public Health and Youth Health Movement (2017) suggested that impaired sleep is a mechanism. Internet use is a sedentary behavior that, used in excess, increases the risk of health problems (Iannotti et al., 2009). A meta-analysis conducted by Asare (2015) showed that this sedentary behavior has a detrimental effect on mental health in young people, although the direction of this relationship is unclear: people with mental health problems may be more likely to be less physically active. Multitasking is common on social networks, with users having accounts on multiple platforms. A study by Rosen, Whaling, Rab, Carrier and Cheever (2013) showed that online multitasking predicts the symptoms of mental disorders.

Another main factor influencing the relationship between the use of social networks and mental health is social support. According to the report published by the American Academy of Pediatrics, social networks allow teenage users to strengthen bonds with existing friends and form new online friendships that reduce social isolation and loneliness and indirectly improve mental health (O'Keeffe & Clarke-Pearson, 2011). Studies claim that those with low social support are more likely to suffer from mental health problems (e. g. depression, anxiety and psychological distress)

compared to those with high social support from family, friends and neighbors (Klineberg et al., 2006; Maulik, Eaton & Bradshaw, 2011).

Well-being in relation to social media addiction

The term well-being (WB) can be viewed as an abstract and completely individualized concept whose meaning appears in a constant flow. Consequently, it is difficult to measure. Research in this area has divided well-being into two areas: (1) hedonic and (2) eudaimonic. Hedonistic theorists tend to look at well-being in a paradigm of pleasure versus unpleasure (Ryan & Deci, 2001), with research that investigates hedonic well-being using subjective well-being (SWB) as an evaluation measure, consisting of the components of life satisfaction, positive and negative affect. Eudaimonic psychologists distinguish themselves from the hedonic notion of 'happiness' and measure WB by the way one lives and fulfills their life (Ryff & Keyes, 1995; Ryff & Singer, 2000).

Regardless of how it is measured, a strong link arises between social support and well-being. Previous studies by both Argyle (1987) and DeNeve (1999) have shown an association between well-being and high 'kinship' provided by social networks.

According to Jung's theory, well-being can be seen as a search for a balance between the two opposing forces of introversion and extroversion in one's personality (Hall, Lindzey & Campbell, 2002). Roger proposed two subtypes of the self: the real self and the ideal self, and suggested that a significant congruence between these two selves leads to greater well-being (Hall, Lindzey & Campbell, 2002). According to Rodman and Fry (2009), "descriptions of wellbeing define a state of equilibrium. Such equilibrium is determined as a measure of social connectedness" (p. 10). In other words, a state of psychological well-being can be interpreted as a state of internal balance in which social connections can play an important role.

Link to social media

Maldonado, Mora, García and Edipo (2001) analyzed the computer-mediated messages of both extroverts and introverts and reported that there was no difference in the number of messages sent by either personality type. Moreover, the nature and tone of the messages of the introvert participants were similar to those of the extroverts.

Despite the potential emerging benefits associated with cellphone use, its ubiquitous use has also led to maladaptive behaviors and other psychosocial problems such as sleep disorders, addiction (Sansone & Sansone, 2013), depression and anxiety (Adam & Kisler, 2013). As Bragazzi and Puente suggest (2014), long-term use of media can stimulate a mechanism and procedure, which could lead to addictive behaviors.

The use of social networks can also have a negative impact in the workplace. From the results of an extensive survey conducted by Kelly OCG, Kelly Global Workforce Index (over 168,000 respondents worldwide), 43% of respondents believe that the use of social networks in the workplace has a negative impact on productivity (Kelly Services, 2012). In the university classroom, Jacobsen and Forste (2011) found a negative relationship between the use of various types of electronic media, including social media, and grades in the first semester. High Facebook usage has been observed in students with a lower average score (GPA); although it cannot be said that Facebook is the cause for the low grades, there was a significant relationship between the use and the GPA (Boogart, 2006). Much of the arguments about the negative impact were due to the distractions that are created for a person while browsing social media sites while they are at work or in class.

Aims and hypotheses

Thus, based on the information provided, as specific aims of the paper, we intent to examine the moderation effect of the fear of missing out phenomenon on the relationship between well-being and social media addiction and the gender biases in the levels of these variables.

The main hypotheses that we want to check are:
1. There is a significant relationship between well-being and social media addiction.
2. Fear of Missing Out serves as a moderator in the relationship between well-being and social media addiction.
3. There is a significant relationship between social media addiction and the phenomenon of fear of missing out.

II. Method

This study aims to explore the moderator role of the fear of missing out phenomenon in the relationship between well-being and social media addiction. A cross-sectional design was used, the data being collected in a single time frame. This methodology was chosen as a result of the many advantages of this design. These may include speed, flexibility, accessibility of its accomplishment and application by the researcher, along with the reduced amount of resources needed for it to be successfully implemented.

Participants

Initially, it was intended to obtain a batch of participants aged between 18-25 years. Following the collection of data from the participants, a group of 94 participants was obtained, of which only 86 are aged between 18-25 years. Therefore, although the same assumptions remain standing, the way in which they can be applied at the level of a specific population is eliminated. The research respects human rights and the principles of the Hague Convention on the conduct of experienced and non-experimental research processes on human subjects. In the research, no participant was compelled to take part in the conduct of the study. The participation was carried out only on a voluntary basis. The informed consent of the participants was also taken before completing the study.

Instruments

The 18-items Psychological Wellbeing (PWB) Scale (Ryff & Keyes, 1995) is a psychometric tool used to conceptualize well-being from a psychological point of view. The scale comprises 18 items, rated from 1 to 7, which make up 6 factors of the scale, namely Autonomy (Cronbach alpha = .47), Environmental Mastery (Cronbach alpha = .70), Personal Growth (Cronbach alpha = .49), Positive Relationships with Others (Cronbach alpha = .51), Purpose in Life (Cronbach alpha = .26), Self-Acceptance (Cronbach alpha = .69). It presents 10 items with reverse score.

Social Networking Addiction Scale (M. G. Shahnawaz and Usama Rehman, 2020) is a psychometric tool that operationalizes the concept of addiction to social networks. The scale consists of 21 items, scored from 1 to 7, which make up 6 facets of the scale, namely Salience (Cronbach alpha = .81), Mood modification (Cronbach alpha = .80), Tolerance (Cronbach alpha = .78), Withdrawal (Cronbach alpha = .93), Conflict (Cronbach alpha = .82), Relapse (Cronbach alpha = .90).

Fear of Missing Out Scale: FoMOs (Przybylski, Murayama, DeHann & Gladwell, 2013) is a psychometric scale that operationalizes the concept of fear of not lagging behind compared to those around you. The scale consists of 10 items scored from 1 to 7, and they make up a single factor that is obtained from the summation of all the items. There are no reversed items. The scale exhibits good psychometric properties (Cronbach alpha = .85).

Procedure

A form was generated to collect participants for the conduct of the current study, using the Google Forms

platform. This platform is free to use and can be accessed by any user. The free version with free access can store up to 5 000 000 data and has no time restrictions or any kind of restriction that could make the research process difficult. The platform presents an intuitive interface that possesses numerous functions and applications that facilitates the research design for the study.

Five sections of the form were generated. The first section is dedicated to informing study participants about the destination and purpose of collecting and further processing data from participants, informing about the obligations of researchers and the rights of participants in non-experimental research on human subjects.

The second section was intended to collect demographic data such as gender, age, level of education, relationship status and place of residence. The following 3 sections of the form were used to collect data using psychometric tools, namely Psychological Wellbeing-18 items, The Fear of Missing Out, The Social Network Addiction Scale.

A Google Forms link has been generated and shared on different social media platforms (Facebook, Instagram). The targeted groups were students and predominantly young people. No prizes, remunerations or any form of physical reward. Participation was carried out only on a voluntary basis.

After the end of the data collection period, these were downloaded to a Microsoft Excel file where they were further processed, in order to eliminate the data erroneously entered by the participants and in order to be able to determine, by means of observation, the possible data that would negatively affect the statistical analysis.

Subsequently, the data were introduced in JAMOVI statistical processing software, as a result of the numerous properties and functions that facilitate the researcher's ability to perform thorough and faithful statistical analysis, with an insignificant level of error. Among the benefits of JAMOVI are various built-in functions such as post-hoc tests and the return of results in tabular form similar to those covered by APA regulations.

III. Results

Analysis and interpretation of descriptive statistics

Initially, a descriptive analysis of the group of participants was carried out, namely a frequency table was generated according to the gender of the participants regarding the demographic variables stipulated in the section dedicated to the collection of demographic data such as age, level of education, relationship status, etc.

Table 1. Descriptive statistics

Statistics

		Gender	
		Masculine	Feminine
Place of residence	Rural	3	16
	Urban	17	58
Relationship status	Single	10	23
	In a relationship	9	37
	Married	1	3
	Divorced	0	1
Form of education	Postgraduate	0	2
	Higher education	1	15
	Post-Secondary education	4	1
	Upper-Secondary education	15	54
	Lower Secondary education	0	3

At the end of the data collection period, a sample of 94 participants was obtained (M = 22.2, SD = 5.88). Therefore, the present sample can be characterized as predominantly young, composed mostly of persons under the age of 25, i.e., adolescents and young adults. However, it can be seen a high level of the value of the standard deviation therefore there are many participants who are older than 25. The sample consists of 79% female participants and 21% male participants. Mostly the participants resided in urban areas, a significant number being female compared to those of male gender. A certain balance can be observed between the number of participants stating to be in a relationship during the study period and those who were not in a romantic relationship. The sample can be characterized by a predominantly secondary level of education, with the higher level of education coming second.

Table 2. Descriptive statistics of study variables

Statistics

	Men		Women	
	M	SD	M	SD
Fear of Missing Out	2.25	.76	2.35	.89
Autonomy	7.35	2.70	8.01	3.40
Environmental Mastery	8.75	4.12	9.43	4.02
Personal Growth	5.00	2.00	5.65	2.87
Positive Relationships with Others	8.50	3.49	8.15	3.69
Purpose in Life	7.90	3.54	8.08	3.66
Self-Acceptance	7.70	3.37	7.73	3.39
Salience	14.50	7.05	16.76	6.50
Mood modification	11.05	4.54	13.01	4.48
Tolerance	9.35	4.03	11.18	5.38
Withdrawal	7.50	5.49	10.01	6.56
Conflict	3.95	1.43	6.09	4.44
Relapse	10.20	6.77	13.05	7.59

According to Table 2, regarding Fear of Missing Out, women and men recorded relatively equal scores with insignificant differences. In terms of well-being, women have experienced a much higher level of well-being and care for their well-being. Compared to women, men recorded a higher level of concern about relationships with those around them. This can be explained by the fact that few men were involved in a romantic relationship or married at the time of the study. And, in terms of social media addiction, it can be observed that women have had a much higher level of addiction, compared to men.

Analysis and interpretation of inferential statistics

The normality of the data was tested using Skewness and Kurtosis indicators, alongside the Shapiro-Wilk normality test.

Table 3. Results of normality tests

Test of normality

	Skewness		Kurtosis		Shapiro-Wilk	
	Skewness	SE	Kurtosis	SE	W	p
Fear of Missing Out	.76	.25	.00	.49	.94	< .001
Autonomy	.23	.25	-.61	.49	.96	.00
The Environmental Mastery	.71	.25	.30	.49	.95	.00
The Personal Growth	1.08	.25	.67	.49	.85	< .001
The Positive Relations with Others	.52	.25	-.51	.49	.95	.00
The Purpose in Life	.55	.25	-.36	.49	.95	.00
The Self-Acceptance	1.10	.25	1.65	.49	.92	< .001
Salience	-.17	.25	-.85	.49	.97	.02
Mood modification	-.28	.25	-.52	.49	.97	.04
Tolerance	.05	.25	-1.05	.49	.96	.00
Withdrawal	1.27	.25	.73	.49	.82	< .001
Conflict	1.93	.25	3.36	.49	.70	< .001
Relapse	.50	.25	-.82	.49	.90	< .001

After testing the normality of the study variables, the results showed that the hypothesis of data normality is violated. The results obtained from the Shapiro-Wilk test are statistically significant and, analyzing the results of the skewness and kurtosis indicators, it can be concluded that most of the data are collected in a certain part of the distribution, or acquire an abnormal shape that departs from the hypothesis of the normal curve. Table 3 illustrates the results obtained.

H1: There is a significant relationship between well-being and social media addiction.

In order to test the first hypothesis of the research, the correlation between the dependent variable, more precisely the addiction to social media, and the independent variable, the well-being, was analyzed. The correlation is illustrated in Table 4.

Since the value of the correlation coefficient is negative (r = -0.024, p > 0.01), there is no significant relationship between the two variables. Therefore, the first hypothesis of the study is not confirmed.

Table 4. The correlation between social media addiction and well-being

Correlation Matrix

		Social media addiction	Well-being
Social media addiction	Pearson's r	-	
	p-value	-	
	95% CI Upper	-	
	95% CI Lower	-	
Well-being	Pearson's r	-0.024	-
	p-value	0.821	-
	95% CI Upper	0.180	-
	95% CI Lower	-0.225	-

H2: Fear of Missing Out serves as a moderator in the relationship between well-being and social media addiction.

The results shown in Table 5 illustrate that the phenomenon of fear of missing out does not moderate the relationship between well-being and social media addiction (p > 0.01). Therefore, the second hypothesis of the research is not confirmed by statistical analysis.

Table 5. Moderating estimates for fear of missing out in the relationship between wellness and social media addiction

Moderation Estimates

	Estimate	SE	95% Confidence Interval		Z	p
			Lower	Upper		
Well-being	-0.0737	0.2969	-0.6556	0.5083	-0.248	0.804
Fear of missing out	2.1273	0.2852	1.5683	2.6863	7.459	< .001
Well-being ✻ Fear of missing out	0.0145	0.0235	-0.0316	0.0606	0.615	0.539

H3: There is a significant relationship between social media addiction and the fear of missing out phenomenon.

In order to test the last hypothesis of the research, the correlation between social media addiction and the phenomenon of fear of missing out was analyzed, and it is illustrated in Table 6.

Since the value of the correlation coefficient is positive (r = 0.607, p < 0.01), that means that there is, indeed, a significant relationship between the two variables. Therefore, the last hypothesis of the study is confirmed, there being a significant relationship between the two variables.

Table 6. The correlation between social media addiction and fear of missing out

Correlation Matrix

		Social media addiction	Fear of missing out
Social media addiction	Pearson's r	-	
	p-value	-	
	95% CI Upper	-	
	95% CI Lower	-	
Fear of missing out	Pearson's r	0.607	-
	p-value	< .001	-
	95% CI Upper	0.721	-
	95% CI Lower	0.461	-

IV. Discussion

The aim of the present study was to bring an element of novelty by trying to find out if the fear of missing out moderates the relationship between the predictor and the criterion, and subsequently, in what sense this moderation could take place. The relationship between well-being and social media addiction is a widely researched and confirmed topic in literature (Adams & Kisler, 2013; Kross et al., 2013; Tromholt, 2016; Twenge et al., 2018; Woods & Scott, 2016), which provided a rigorously grounded starting point for the current study. Unfortunately, however, the result achieved was not the expected one.

Similarly, the relationship between social media addiction and the fear of missing out phenomenon has been researched in the literature of recent years (Wolniewicz, Tiamiyu, Weeks & Elhai, 2018).

The main reason for wanting to investigate this relationship was in fact the interest in the concept of fear of missing out, measured on the population of Romania.

On the one hand, the exploration of the fear of missing out phenomenon has led to conclusions that can be considered a starting point for future research. On the other hand, it is impossible to draw general conclusions, as the sample is not representative to extend the findings to the population level. In addition, most of the participants are young, which has substantially influenced the weight of the responses.

Although the observed effects are rather low in the present study, the moderation analysis may be improved in the future. First of all, consideration might be given to acquiring a larger sample, containing

answers from respondents from vaster socio-economic, cultural, even religious backgrounds, but, most importantly, respondents from different age groups. The differences that will occur at the level of the 3 variables between people from the aforementioned backgrounds, will provide a broad perspective on social media addiction, well-being and the fear of missing out phenomenon. These variations are likely to facilitate a potential moderating influence of fear of missing out on the relationship between well-being and social media addiction.

Limitations

The present study was carried out over a short period of time, namely 3 months, the duration being an important aspect to consider. Equally, although the sample did not target a specific age category, the majority of participants fall into the 18-22 age group, which restricts the possibility of drawing conclusions at the level of the population.

At the same time, as far as the sample is concerned, a significant proportion of the participants are female, thus meddling with the conclusions. It can also be taken into account that the participants filled in the questionnaire online, in the absence of the researcher, which could have led to random, disinterested answers. Moreover, when developing the questionnaire, a scale for measuring extraversion could also have been introduced, which would have provided a broader perspective of the results, managing to become perhaps even a potential aspect that would explain the interaction between variables. At the same time, the effect produced by extraversion in the relationship between social media addiction and well-being could have been traced, having provided a more specific direction that would offer more guarantees for a statistically significant result.

Future research directions

The presented moderation model is a starting point for potential future research. The measurement of the constructs took place in a single time frame, which gave the study an exploratory, not exactly confirmatory character. Thus, the variant of repeated measurements and even the existence of a more diverse, more extensive sample may represent future directions of approaching the interaction between the variables traced in the present study.

At the same time, based on the results obtained, we can distinguish the need for a greater specificity of explaining the concepts pursued. Therefore, in order to better understand the relations between variables, it is necessary to clearly delimit, for the participants, the concept of fear of missing out. Rather, this finding stems from the inconsistent responses they provided on a scale for measuring the fear of missing out phenomenon.

One can also consider using a specific method for measuring the time spent on social networks, which would give more consistency to the study, in the context of analyzing the addiction to social media. Thus, we could observe exactly how much time each participant spends online, but without asking questions that could give away the aims of the study and that could make the participants give biased answers, trying not to show that they are addicted to social media.

V. Conclusions

In the present study, it was concluded from statistical analyses that the fear of missing out phenomenon is not a moderator of the relationship between well-being and social media addiction. Therefore, the interaction between predictor and criterion is not stronger when people manifest a higher level of fear of missing out. However, a statistically significant but low-intensity positive correlation among respondents was observed between social media addiction and the fear of missing out phenomenon. Previous research in the literature has both confirmed the association between fear of missing out and overuse of social media platforms (Wolniewicz, Tiamiyu, Weeks & Elhai, 2018). Additional support for the argument that FoMO stimulates the use of social networks is provided by the Theory of Information Search, tackled above.

Regarding Fear of Missing Out, we've seen that women and men recorded relatively equal scores with insignificant differences. At the same time, women have experienced a much higher level of well-being and care for their well-being, while men recorded a higher level of concern about relationships with those around them (fewer being in a romantic relationship or married). In terms of social media addiction, also, women have had a much higher level of addiction compared to men.

Following the results obtained and the conclusions highlighted, it is obvious that the reason why the fear of missing out phenomenon does not moderate the relationship between well-being and social media addiction is the motivation of people to have a good life and feel good, boosted by the beautiful life that others show on social media, but without becoming addicted. Thus, they can follow social networks, and the

feeling of fear of missing out can motivate them not to just feel excluded, but to act and work to improve their personal well-being.

Another unexpected result was the lack of a meaningful relationship between social media addiction and well-being. The reason may lie in the fact that competitive people can use social media in a more productive manner, observing the success of others and motivating themselves to succeed on a personal level, just as they motivate themselves not to overdo it with the time spent on social media, without developing addiction. Of course, the participants' answers can be biased, as they want to give the 'right' answers in this regard.

*

*   *

References

Abel, J. P., Buff, C. L., & Burr, S. A. (2016). Social media and the fear of missing out: Scale development and assessment. *Journal of Business & Economics Research (JBER), 14*(1), 33-44.

Adams, S. K., & Kisler, T. S. (2013). Sleep Quality as a Mediator Between Technology-Related Sleep Quality, Depression, and Anxiety. *Cyberpsychology, Behavior, and Social Networking, 16*, 25-30.

Alt, D. (2015). College students' academic motivation, media engagement and fear of missing out. *Computers in Human Behavior, 49*, 111e119.

Amichai-Hamburger, Y. (2002). Internet and personality. *Computers in Human Behavior, 18*, 1-10.

Amichai-Hamburger, Y., Wainapel, G., & Fox, S. (2002). "On the Internet No One Knows I'm an Introvert": Extraversion, neuroticism, and Internet interaction. *Cyberpsychology & Behavior, 5*(2), 125-128.

Andreassen, C. S., Griffiths, M. D., Gjertsen, S. R., Krossbakken, E., Kvam, S., & Pallesen, S. (2013). The relationships between behavioral addictions and the five-factor model of personality. *Journal of Behavioral Addictions*, 90-99.

Argyle, M. (1987). *The psychology of happiness*. London: Methuen.

Asare, M. (2015). Sedentary behaviour and mental health in children and adolescents: A meta-analysis. *Journal of Child and Adolescent Behavior, 3*, 259.

Baek, Y. M., Cho, Y., & Kim, H. (2014). Attachment style and its influence on the activities, motives, and consequences of SNS use. *Journal of Broadcasting & Electronic Media*, 522-541.

Barker, V. (2009). Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem. *Cyberpsychology & Behavior, 12*(2), 209e213.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental drive. *Psychological Bulletin, 117*(3), 497-529.

Baumeister, R. F., & Tice, D. (1990). Anxiety and social exclusion. *Journal of Social and Clinical Psychology, 9*(2), 165-195.

Best, P., Manktelow, R., & Taylor, B. (2014). Online communications, social media and adolescent wellbeing: A systematic narrative review. *Children and Youth Review, 41*, 27-36.

Beyens, I., Frison, E., & Eggermont, S. (2016). "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. *Computers in Human Behavior, 64*, 1-8.

Bibby, P. A. (2008). Dispositional Factors in the Use of Social Networking Sites: Findings and Implications for Social Computing. *Lecture Notes in Computer Science, 5075*, 392-400.

Blackwell, D., Leaman, C., Tramposch, R., Osborne, C., & Liss, M. (2017). Extraversion, neuroticism, attachment style and fear of missing out as predictors of social media use and addiction. *Personality and Individual Differences, 116*, 69-72.

Boogart, M. (2006). *Uncovering the social impacts of Facebook on a college campus*. Kansas State University.

Bragazzi, N. L., & Del Puente, G. (2014). A proposal for including nomophobia in the new DSM-V. *Psychology Research and Behavior Management, 7*, 155-160.

Brooks, S. (2015). Does personal social media usage affect efficiency and well-being?. *Computers in Human Behavior, 46*, 26-37.

Carr, C. T., & Hayes, R. A. (2015). Social media: defining, developing, and divining. *Atlantic Journal of Communication, 23*(1), 46-65.

Cheever, N. A., Rosen, L. D., Carrier, L. M., & Chavez, A. (2014). Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users. *Computers in Human Behavior, 37*, 290-297.

Chotpitayasunondh, V., & Douglas, K. M. (2016). How 'phubbing' becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior, 63*, 9-18.

Clayton, R. B., Leshner, G., & Almond, A. (2015). The extended iSelf: The impact of iPhone separation on cognition, emotion, and physiology. *Journal of Computer-Mediated Communication, 20*, 119-135.

Correa, T., Hinsley, A. W., & De Zuniga, H. G. (2010). Who interacts on the Web?: The intersection of users' personality and social media use. *Computers in Human Behavior, 26*(2), 247-253.

David, M. E., Roberts, J. A., & Christenson, B. (2017). Too much of a good thing: Investigating the association between actual smartphone use and individual well-being. *International Journal of Humancomputer Interaction.*

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

DeNeve, K. M. (1999). Happy as an extraverted clam? The role of personality for subjective well-being. *Current Directions in Psychological Science, 8*, 141-144.

Desjarlais, M., & Willoughby, T. (2010). A longitudinal study of the relation between adolescent boys and girls' computer use with friends and friendship quality: Support for the social compensation or the rich-get-richer hypothesis?. *Computers in Human Behavior, 26*, 896e905.

Deters, F. G., & Mehl, M. R. (2013). Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social Psychology and Personality Science, 4*(5), 579-586.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook 'Friends': Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143-1168.

Fox, J., & Moreland, J. J. (2015). The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior, 45*, 168e176.

Gamez-Guadix, M. (2014). Depressive symptoms and problematic Internet use among adolescents: Analysis of the longitudinal relationships from the cognitive-behavioral model. *Cyberpsychology, Behavior, and Social Networking, 17*(11), 714e719.

Gazzaley, A., & Rosen, L. D. (2016). *The distracted mind: Ancient brains in a high-tech world.* Cambridge, MA: MIT Press.

Green-Hamann, S., Eichhorn, K. C., & Sherblom, J. C. (2011). An exploration of why people participate in second life social support groups. *Journal of Computer-Mediated Communication, 16*, 465-491.

Gruter, M., & Masters, R. D. (1986). Ostracism as a social and biological phenomenon: An introduction. *Ethology & Sociobiology, 7*(3-4), 149-158.

Hagger, M. S., & Chatzisarantis, N. L. (2007). Intrinsic motivation and self-determination in exercise and sport. *Human Kinetics.*

Hall, C. S., & Lindzey, G., Campbell, J.B. (2002). *Theories of personality.* Delhi: Replika Press Pvt. Ltd.

Hart, J., Nailling, E., Bizer, G. Y., & Collins, C. K. (2015). Attachment theory as a framework for explaining engagement with Facebook. *Personality and Individual Differences*, 33-40.

Iannotti, R. J., Janssen, I., Haug, E., Kololo, H., Annaheim, B., Borraccino, A., Roberts, C. (2009). Interrelationships of adolescent physical activity, screen-based sedentary behaviour, and social and psychological health. *International Journal of Public Health, 54*(SUPPL), 2.

Jacobsen, W. C., & Forste, R. (2011). The wired generation: Academic and social outcomes of electronic media use among university students. *Cyberpsychology, Behavior, and Social Networking, 14*(5), 275-280.

Kalpidou, M., Costin, D., & Morris, J. (2011). The relationship between Facebook and the well-being of undergraduate college students. *Cyberpsychology, Behavior, and Social Networking, 14*(4), 183e189.

Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *Cyberpsychology & Behavior, 1*(1), 11-17.

Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International Journal of Adolescence and Youth, 25*(1), 79-93.

Kelly Services (2012). *When worlds collide – The rise of social media for professional and personal use*. Retrieved January 5, 2013, from https://www.kellyocg.com/.

King, A. L. S., Valença, A. M., Silva, A. C. O., Baczynski, T., Carvalho, M. R., & Nardi, A. E. (2013). Nomophobia: Dependency on virtual environments or social phobia?. *Computers in Human Behavior, 29*(1), 140e144.

Kirschner, P. A., & Karpinski, A. C. (2010). Facebook and academic performance. *Computers in Human Behavior, 26*(6), 1237e1245.

Klineberg, E., Clark, C., Bhui, K. S., Haines, M. M., Viner, R. M., Head, J., & Stansfeld, S. A. (2006). Social support, ethnicity and mental health in adolescents. *Social Psychiatry and Psychiatric Epidemiology, 41*(9), 755-760.

Ko, C. H., Yen, J. Y., Chen, C. S., Yeh, Y. C., & Yen, C. F. (2009). Predictive values of psychiatric symptoms for Internet addiction in adolescents: A 2-year prospective study. *Archives of Pediatrics & Adolescent Medicine, 163*(10), 937e943.

Konrath, S. (2018, May 7). Americans are becoming more socially isolated, but they're not feeling lonelier. *The Conversation.*

Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., ... & Ybarra, O. (2013). Facebook use predicts declines in subjective well-being in young adults. *PloS One, 8*(8), e69841.

Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction – a review of the psychological literature. *International Journal of Environmental Research and Public Health, 8*(9), 3528e3552.

Lampe, C., Ellison, N., & Steinfield, C. (2009). *A familiar face(book): Profile elements as signals in an online social network. Proceedings of Conference on Human Factors in Computing Systems* (p. 435-444). New York: ACM Press.

Lenhart, A. (2015). *Teens, social media & technology overview 2015*. Retrieved from http://www.pewinternet.org/2010/04/20/teens-and-mobile-phones/.

Lin, L. Y., Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., ... & Primack, B. A. (2016). Association between social media use and depression among U.S. young adults. *Depression and Anxiety, 33*(4), 323e331.

Lin, M. P., Ko, H. C., & Wu, J. Y. W. (2011). Prevalence and psychosocial risk factors associated with internet addiction in a nationally representative sample of college students in Taiwan. *Cyberpsychology, Behavior and Social Networking*, 741-746.

Makki, T., DeCook, J., Kadylak, T., & Lee, O. (2017). The Social Value of Snapchat: An Exploration of Affiliation Motivation, the Technology Acceptance Model, and Relational Maintenance in Snapchat Use. *International Journal of Human-Computer Interaction, 34*. 10.1080/10447318.2017.1357903.

Maldonado, J. G., Mora, M., García, S., & Edipo, P. (2001). Personality, sex and computer-mediated communication through the Internet. *Anuario de Psicología, 32*(2), 1-11.

Maulik, P., Eaton, W., & Bradshaw, C. (2011). The effect of social networks and social support on mental health services use, following a life event, among the Baltimore epidemiologic catchment area cohort. *The Journal of Behavioral Health Services & Research, 38*(1), 2950.

Munderia, R., & Singh, R. (2018). Mobile phone dependence and psychological well-being among young adults. *Indian Journal of Community Psychology, 14*(2), 321-29.

Muntinga, T., & Taylor, G. (2018). Information-seeking strategies in medicine queries: A clinical eye tracking study with gaze-cued retrospective think-aloud protocol. *International Journal of Human-computer Interaction, 34*(6), 506-518.

Nadkarni, A., & Hofmann, S. G. (2012). Why do people use Facebook? *Personality and Individual Differences, 52*, 243-249.

Nitzburg, G. C., & Farber, B. A. (2013). Putting up emotional (Facebook) walls? Attachment status and emerging adults' experiences of social networking sites. *Journal of Clinical Psychology, 69*(11), 1183-1190. https://doi.org/10.1002/jclp.22045.

O'Keeffe, G., & Clarke-Pearson, K.; Council on Communications and Media (2011). The impact of social media on children, adolescents and families. *Pediatrics, 124*, 800-804.

Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of adolescence, 55*, 51-60.

Oldmeadow, J. A., Quinn, S., & Kowert, R. (2013). Attachment style, social skills, and Facebook use amongst adults. *Computers in Human Behavior, 29*, 1142-1149.

Olweus, D. (1999). Sweden. In P. K. Smith, Y. Morita, J. Junger-Tas, D. Olweus, R. Catalano, & P. Slee (Eds.), *The nature of school bullying: A cross-national perspective.* London & New York: Routledge.

Oulasvirta, A., Rattenbury, T., Ma, L., & Raita, E. (2012). Habits make smartphone use more pervasive. *Personal and Ubiquitous Computing, 16*(1), 105-114.

Owens, J. (2014). Insufficient sleep in adolescents and young adults: An update on causes and consequences. *Pediatrics, 134*(3), 921-932.

Pantic, I., Damjanovic, A., Todorovic, J., Topalovic, D., Bojovic-Jovic, D., Ristic, S., et al. (2012). Association between online social networking and depression in high school students: Behavioral physiology viewpoint. *Psychiatria Danubina, 24*(1), 90-93.

Pew Research Centre (2015). *Teens, social media & technology overview 2015*. Retrieved from http://www.pewinter net.org/2015/04/09/teens-social-media-technology-2015/.

Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior, 29*, 1841-1848.

Przybylski, A. K., Weinstein, N., Ryan, R. M., & Rigby, C. S. (2009). Having to versus wanting to play: Background and consequences of harmonious versus obsessive engagement in video games. *CyberPsychology & Behavior, 12*, 485-492.

Rigby, K. (2002). *New perspectives on bullying.* London: Jessica Kingsley.

Roberts, J. A., & David, M. E. (2019). The social media party: Fear of missing out (FoMO), social media intensity, connection, and well-being. *International Journal of Human–Computer Interaction, 36*(1), 1-7.

Roberts, J. A., & Pirog, S. F., III. (2013). A preliminary investigation of materialism and impulsiveness as predictors of technological addictions among young adults. *Journal of Behavioral Addictions, 2*(1), 56-62.

Roberts, J. A., Petnji YaYa, L. H., & Manolis, C. (2014). The invisible addiction: Cell-phone activities and addiction among male and female college students. *Journal of Behavioral Addictions, 3*(4), 254-265.

Rodman, G., & Fry, K. G. (2009). Communication technology and psychological wellbeing: Yin, Yang, and the golden mean of media effects. *Technology and Psychological Well-Being*, 9-33.

Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. (2013). Is Facebook creating 'iDisorders'? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior, 29*(3), 1243-1254.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior, 25*(2), 578-586.

Rothberg, M. B., Arora, A., Hermann, J., Kleppel, R., Marie, P. S., & Visintainer, P. (2010). Phantom vibration syndrome among medical staff: a cross sectional survey. *Bmj, 341*(dec15 2), c6914-c6914.

Royal Society of Public Health and Youth Health Movement (2017). *#StatusOfMind: Social Media and Young People's Mental Health and Wellbeing.* London: RSPH.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist, 55*(1), 68.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141-166.

Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the big five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior, 27*, 1658-1664.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology.*

Ryff, C. D., & Singer, B. (2000). Interpersonal flourishing: A positive health agenda for the new millennium. *Personality and Social Psychology Review, 4*, 30-44.

Sampasa-Kanyinga, H., & Lewis, R. F. (2015). Frequent use of social networking sites is associated with poor psychological functioning among children and adolescents. *Cyberpsychology, Behavior, and Social Networking, 18*(7), 380-385.

Sansone, R. A., & Sansone, L. A. (2013). Cell phones: The psychosocial risks. *Innovations in Clinical Neuroscience, 10*(1), 33-37.

Schimmenti, A., Passanisi, A., Gervasi, A. M., Manzella, S., & Famà, F. I. (2014). Insecure attachment attitudes in the onset of problematic internet use among late adolescents. *Child Psychiatry and Human Development, 45*(5), 588-595.

Scott, H., & Woods, H. C. (2018). Fear of missing out and sleep: Cognitive behavioural factors in adolescents' nighttime social media use. *Journal of adolescence, 68*, 61-65.

Shahnawaz, M., & Rehman, U. (2020). Social Networking Addiction Scale. *Cogent Psychology, 7*(1), 1832032. doi: 10.1080/23311908.2020.1832032

Sheldon, K. M., Abad, N., & Hinsch, C. (2011). A two-process view of Facebook use and relatedness need-satisfaction: Disconnection drives use, and connection rewards it. *Journal of Personality and Social Psychology, 100*(94), 766-775.

Slonje, R., Smith, P. K., & Frisén, A. (2013). The nature of cyberbullying, and strategies for prevention. *Computers in human behavior, 29*(1), 26-32.

Smith, P. K., & Sharp, S. (Eds.) (1994). *School bullying: Insights and perspectives*. London: Routledge.

Smith, P. K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*, 376-385.

Stead, H., & Bibby, P. A. (2017). Personality, fear of missing out and problematic internet use and their relationship to subjective well-being. *Computers in Human Behavior, 76*, 534-540.

Tang, J. H., Chen, M. C., Yang, C. Y., Chung, T. Y., & Lee, Y. A. (2016). Personality traits, interpersonal relationships, online social support, and Facebook addiction. *Telematics and Informatics*, 102-108.

Trepass, D. (2018). *Information foraging theory, the glossary of human computer interaction.* Retrieved from www.interaction-design.org/literature/book/the-glossary-of-human-computer-interaction.

Tromholt, M. (2016). The Facebook experiment: Quitting Facebook leads to higher levels of well-being. *Cyberpsychology, Behavior, and Social Networking, 19*(11), 661-666.

Tsai, H. F., Cheng, S. H., Yeh, T. L., Shih, C. C., Chen, K. C., Yang, Y. C., & Yang, Y. K. (2009). The risk factors of internet addiction – A survey of university freshmen. *Psychiatry Research, 167*, 294-299.

Turkle, S. (2011). *Alone together: Why we expect more from technology and less from each other*. New York: Basic Books.

Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science, 6*, 3-17.

Van den Eijnden, R. J., Meerkerk, G. J., Vermulst, A. A., Spijkerman, R., & Engels, R. C. (2008). Online communication, compulsive Internet use, and psychosocial well-being among adolescents: A longitudinal study. *Developmental Psychology, 44*(3), 655.

Vandebosch, H., & Van Cleemput, K. (2008). Defining cyberbullying: A qualitative research into the perceptions of youngsters. *CyberPsychology & Behavior, 11*, 499-503.

Verma, R. K., Rajiah, K., Cheang, A., & Barua, A. (2014). Textaphrenia: An emerging silent pandemic. *African Journal of Psychiatry (South Africa), 17*(2), 510-511.

Vorderer, P., Kromer, N., & Schneider, F. M. (2016). Permanently online – permanently connected: Explorations into university students' use of social media and mobile smart devices. *Computers in Human Behavior, 63*, 694-703.

Whiting, A., & Williams, D. (2013). Why people use social media: A uses and gratifications approach. *Qualitative Market Research: An International Journal, 16*(4), 362-369.

Williams, K. D. (2007). Social ostracism: The kiss of death. *Social and Personality Psychology Compass, 1*/1(2007), 236-247.

Wilson, K., Fornasier, S., & White, K. M. (2010). Psychological predictors of young adults' use of social networking sites. *Cyberpsychology, Behavior and Social Networking*, 173-177.

Wolniewicz, C. A., Tiamiyu, M. F., Weeks, J. W., & Elhai, J. D. (2018). Problematic smartphone use and relations with negative affect, fear of missing out, and fear of negative and positive evaluation. *Psychiatry Research, 262*, doi.org/10.1016/j.psychres.2017.09.058.

Woods, H. C., & Scott, H. (2016). #Sleepyteens: Social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of Adolescence, 51*, 41-49.

Ybarra, M. L., & Mitchell, K. J. (2004). Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics. *Journal of Child Psychology and Psychiatry, 45*, 1308-1316.

✳

✳   ✳