# Is Social Media Usage linked to Anxiety and Depression in Adults

**By**

**Liam Roberts**

**Student Number 10344037**

**Submitted in partial fulfilment of the requirements of the BA Hons in Psychology/ Higher Diploma in Psychology at Dublin Business School of Arts, Dublin**

**Supervisor: Barbara Caska**

**March 2019**

**Department of Psychology**

**Dublin Business School**

## Declaration

‘I declare that this thesis that I have submitted to Dublin Business School for the award of BA (Hons) Psychology is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.’

Signed: Liam Roberts

Student Number: 10344037

Date: 21/03/2019

Table of Contents

**Acknowledgments**

I would like to thank my college peers and friends for their support throughout my college course. I would like to thank also my supervisor Barbara Caska for her help and direction throughout the entire research project process and Jane Buggle for accommodating my thoughts and concerns. Finally, I would to thank my family for their help.

## Abstract

The aim of this study was to gain a deeper understanding of the linkage between social media usage and anxiety and depression using an understudied Irish adult population. A quantitative, correlational survey was used to gather necessary data. A convenience sample of sixty-nine participants completed the online survey which consisted of Social Media Scale and Depression Anxiety Stress Scale. There was a small positive correlation with no significance, between the two variables. This indicates that while higher social media usage correlates with higher depression, anxiety and stress scores, it is not significant enough for a relationship to be determined. The results suggest building an ongoing body of research to investigate the links between anxiety and depression and social media use, as users feature across the lifespan and users are increasingly younger despite age limitations.

# 1.0 Introduction

Social media is a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, allowing creation and exchange of user-generated content (Kaplan and Haenlein, 2010, Chen, Lin and Yuan, 2017). Social media sites are defined as any website that allows social interaction between its users (O`Keefe and Clarke-Pearson, 2011). The platforms allow human interaction through a virtual-network community, where users can post content of their choice and make connections and stay in touch with family and friends and even people whom they have never meet.

## 1.1 Social media General usage

Social media is a substantial and growing part of daily life, with more than two and a half billion people using social media worldwide (Statista, 2018). Fifty two percent of adolescents in Western countries engage in multi-platform social media use – i.e. more than two social media sites (Duggan, 2015). Most adults today have access to computers or mobile phones and use popular social media platforms. Smartphones have increased the growth of, and given easier access to, social media activities such as liking friends, taking and posting photographs, and commenting on an individual's status (Demirci, Akgönül and Akpinar, 2015). People's everyday lives, from informal interactions to professional routines, are increasingly mediated by social media platforms, and this new wave of shared information is a taken-for-granted aspect of modern life (Van Dijck and Poell, 2013)

Most of the popular social media platforms are free and applications are easily accessible, making social media attractive for users but also a cause for concern, with the increasing amounts of time spent online (Kuss & Griffiths, 2011). Social media gives users the ability to project themselves in a positive manner to their friends and social media followers. They can manipulate this image to their own personal liking, which can give users a sense of emotional high (Kuss & Griffiths, 2011).

### 1.2 Usage linked to human personality traits

Human personality traits can be important in understanding why some people continue to use social media platforms even when it negatively impacts their lives. In psychology, personality theory employs the Big Five personality traits, which are five dimensions used to describe human personality (Xue, Yang & Yu, 2018). The five factors are openness, conscientiousness, extraversion, agreeableness, and neuroticism (Xue *et al*, 2018). Openness is experienced as general appreciation for art and adventure and unusual ideas (Xue *et al*, 2018). Extraversion is characterized by urgency for, an interest in and energy gained from external social happenings, situations and means (Xue *et al*, 2018). Agreeableness reflects individuals' differences and their concern for social harmony (Xue *et al*, 2018). For individuals who display neuroticism there is a tendency for them to experience negative emotions such as anger, anxiety or depression (Jeronimus, Riese, Sanderman and Ormel, 2014). Individuals with conscientiousness traits are disciplined, organized, and achievement orientated (Komarraju, Karau, Schmeck & Avdic, 2011).

Research using the Big Five Personality Traits theory is useful to understand who uses social media, why they use it and the potential negative or positive effects on mental health that may result for each personality from that use. A study carried out Seidman (2013) found that individuals who showed agreeableness were strongly motivated by the sense of belonging that social media connections allowed them to fulfil. When the study ran a regression analysis, results found that agreeable individuals were more likely to use the social media platform Facebook to

seek acceptance and maintain connection (Seidman, 2013). In contrast, Neuroticism features anxious behavior and self-consciousness which may affect online behavior. Individuals who show high levels of the neurotic trait have difficulty with social relationships, anxiety and depression (Amirazodi and Amirazodi, 2011). Socializing is often difficult for neurotic individuals and social media is a way for them to connect with people. Individuals with neuroticism tend to prefer using social media to engage in communication that allows them to control timing and content of their social interactions, and the trait is also positively correlated with social media use that is passive, such as looking at other users' photos and posts and following fan pages (Rozgonjuk, Ryan, Kuljus, Täht, & Scott, 2019). Regression analysis by Seidman (2013) found that neuroticism was associated with information seeking and communication using the social media medium. Whereas neurotic people feel social media is a safe place to present themselves, conscientious individuals are cautious in how they present themselves online (Seidman, 2013). As neurotic individuals find it difficult to form bonds offline this may affect what they use social media. Such users may score high in the Depression Anxiety Stress Scale 21 (DASS 21) in the questionnaire provided in this study.

Individuals who show extraversion traits characterized as sociability, high energy and talkativeness (Seidman, 2013). These individuals, called extraverts, place emphasis on real self-presentation with continuous self-monitoring on social media sites (Michikyan, Subrahmanyam, & Dennis, 2014). There is a positive relationship between extraversion and using social media sites to broaden virtual contacts (Lee, Ahn & Kim, 2014). In examining young adults' social media profiles Back, Stopfer, Vazire, Gaddis, Schmukle, Egloff, & Gosling (2010) reported that extravert adults presented their real self on social media. Extrapolation from those findings suggests that extraverts will portray their offline life and personality with a great deal of

accuracy on social media (Back *et al.,* 2010). Research findings showed marked differences in extraverts and introverts using social media; extraverts use social media to communicate with friends and comment on their friends' content (Gosling *et al,* 2011) whereas introverts are more likely to use the social media platforms to keep up with friends' content and view their pages without communicating with the friend directly (Moore and McElroy, 2012). Users personalities can shape how often social media is used and what social media is used for. Based on these findings it is possible that these behaviors transfer to online behavior and on a scale measuring social media use, extraverted individuals may be more inclined to report using social media for "keeping ties with family or friends" and "for communication." In contrast, introverted individuals may be more inclined to report using social media "to browse/time waste" and for accessing "News."

### 1.3 Negative implications of usage

There has been a massive increase in social media usage in recent years. In 2018 the number of social media users was 3.196 billion, an increase of thirteen percent from 2017 (Kemp 2018). Usage of social media continues to grow rapidly and, during the 12 months leading up January 2018, the number of users worldwide increased by one million everyday (Kemp, 2018).

Three billion people around the world now use social media each month, with nine out of ten users accessing the platforms through their smartphone device (Kemp, 2018). This massive yearly increase has prompted research surrounding this area and current research to examine the possible negative effects of that social media use, especially use of multiple platforms. Research by Andreassan *et al*. (2016) shows that the ease of access and increased time spent on social media are associated with negative emotions and behaviours and increased levels of depression and anxiety symptoms.

*Cyberbullying*

Most social media platforms share a similar approval system that influences user input. This online society places importance on the number of likes, retweets or comments on one's account, users may feel pressure to post photos and portray a picturesque lifestyle on social media (O'Keeffe *et al*, 2011). Cyberbullying and cyberstalking have become forms of harassment, which are described as more damaging than traditional bullying due to the potential for a large online audience that could view this form of abuse, in turn increasing anonymous bullying (Stica and Perren, 2013). From O'Keeffe *et al* (2011) findings it could be suggested that individuals under the pressure from social media influence may answer on the SMS post on social media

regularly and on the DASS 21 may score higher in question such as “I was worried about situations in which I might panic and make a fool of myself”. This could also affect there scoring

*Addiction*

Due to its seemingly pleasurable outcomes, social media usage can develop into an unhealthy addiction. Kuss and Griffiths (2011) argue that the drive for social media usage isn’t the various mediums but, in fact, the variety of activities users carry out online, and the behaviours learned could be potential causes of the addiction. These authors identify the symptoms of social media addiction as including: inability to control behaviour, neglect of family and friends, neglect of sleep to stay online, anxiety or depression as a result of online behaviour, and withdrawing from other pleasurable activities, while Sriwilai and Charoensukmongkol (2016) found that users who were highly addicted to social media had lower mindfulness and were emotionally exhausted as a result of using emotion-focused coping strategies. Psychiatrists have already begun to identify students who are suffering from anxiety and depression should be monitored for smartphone addiction. (Cain 2018). Technological breakthroughs, such as the smartphone, make accessing the platforms faster but also more addictive. Problems with social media usage and smartphone usage go hand in hand, as both use applications that disregard interpersonal interaction (Takahasi et al., 2009). This increase in smartphone use for social media access and interaction has prompted the current research, to investigate if individuals who score higher on the SMS will also score higher on the DASS 21. The high smartphone use may predict how many social media accounts participants have in the study have and how much time they spend on the platforms a day.

### 1.4 Depression and Social media

Depression is a dynamic complex of symptoms that include loss of pleasurable outcomes, irritability, stress, insomnia and fatigue (Aalbers *et al*, 2018). The economic burden of adults with depression in the United States costs a staggering 210.5 billion dollars per year (Greenberg, Fournier, Sisitsky, Pike & Kessler, 2015). It appears that the rise of depression and the rise of social media usage run parallel (Pantic, 2014). Focusing on depression resulting from social media is relevant because of the disease's high prevalence (Tong, Islam, Low, Choo & Abdullah, 2019). Anderson & Jiang (2018) found that, in March 2018, sixty-eight percent of adults in the United states had a Facebook account and seventy-five percent of these people used the platform daily. In Ireland in 2017 the Deloitte reported that ninety percent of adults owned a smartphone (Deloitte, 2017) The Central Statistics Office in ireland reported sixty nine percent accessing Facebook daily and forty percent using WhatsApp (CSO, 2017) Social media usage and social media network sites have increased in the last decade due the rise of platforms and accessibility of smartphones and tablets (Donnelly and Kuss, 2016). This rapid increase in the adoption of social media has prompted current and prior correlational studies to focuse on investigating the relationship between social media use and mental health. (Hunt, Marx, Lipson & Young, 2018).

Establishing and maintaining relationships significantly drives the excessive use of social media but may transition into social networking addiction, as mentioned previously. This problematic and excessive usage has a harmful effect on mental wellbeing. There is also a correlational relationship with the rise of depression and anxiety and the rise in smartphone usage and social media usage (Cain 2018). Self-reported Facebook and Instagram usage have positive correlations with depressive symptoms both directly and indirectly (Lup, Trub &

Rosenthal, 2015). Social media use is a significant predictor of depression. This means that if adults are not connected to social media, they may experience feelings of isolation and stress leading to increased anxiety and depression (Kırcaburun, Kokkinos., Demetrovics, Király, Griffiths & Çolak, 2018). Generally, there is a gap in literature regarding social media use link to anxiety and depression, more research is necessary to help develop targeted interventions and future research is this area is important.

### 1.5 Emotional investment and sleep problems

Demircis (2015) found that there was a significant correlation between severity of smartphone use and depression and anxiety in university students. Research highlights concern that the combined prevalence of smartphone uses, and social media has created a negative effect on young adolescents (Twenge, 2017). Checking social media first thing in the morning and at night before sleep has become a life priority. Twenge (2017) found that in a sample of undergraduate students in San Diego state university social media was checked right before they went to sleep, and social media was checked as soon as they woke up in the morning. The increased emotional investment in social media can manifest as sleeping problems and cause low self-esteem with heightened anxiety and depression levels. A study carried out by Woods and Scott (2016) used the Social Integration and Emotional Connection subscale of the Social Media Use Integration Scale and the Hospital Anxiety and Depression scale (HADS) to assess emotional investment. They found that too much social media during the night and day was associated with low sleep quality and resulted in high levels of anxiety and high levels of depression. With sixteen percent of the population admitting to looking at their phone more than a hundred times a day and one in three reported checking their phone five minutes of going to sleep ,the current study aims to to add to such research findings investigating how much time was spent on social media per day and asking is social media the last activity participants do before getting out and going to bed (Deliotte, 2017)

### 1.6 Behaviours and symptoms associated with depression

Social media has become a virtual stage for individuals to voice their thoughts, mood, communication and socialization. Communication is humans most effective medium to convey feelings and emotions. In the past, communication has been restricted by distance. The power of social media is hard to dismiss, with its ability to bridge the gaps and bring people closer through its platforms (Tandon, Director & Hol, 2018). The exposure gained by active participation in social media allows opinions to be shared, people are encouraged to reflect on current issues and express themselves through photos and posts (Tandon, Director and Hol 2018). This exposure, however, of posting on social media may evoke negative feelings of self-hatred or feelings of worthlessness, which are characteristics of depression (De Choudhury, Gamon, Counts & Horvitz, 2013).

Even seemingly harmless passive use of social media such as scrolling or browsing on platforms is positively correlated with symptoms of depression: loss of interest, loneliness and reduced sense of belonging (Aalbers, McNally, Heeren, de Wit & Fried, 2018). An article titled "Scrolling is the New Smoking." by Semmes (2015) highlights the increasing evidence that social media use is harming users mentally, creating symptoms such as depression and anxiety as well as physical effects such as impaired vison and sleep disturbance. The effects of scrolling when trying to connect with someone can cause frustration and can have negative impacts on relationships (Semmes et al., 2015). This prompted current research to consider passive use of social media what social media is used for and when it is accessed. This maladaptive and

persistent behavior is measured in the SMS scale which examines the situations ie. Whilst at school/ work or during social occasions.

Humans are a highly social species who place significant emphasis on happiness as measured via the number of friends one has and having a rich social environment. Comparing one's online connections to one's peers' can lead to the impression of not being as happy, due to the phenomenon of the Friendship Paradox, which refers to the mathematical quirk that your friends, on average, have more friends than you do (Jackson 2016). This paradox is the result of a person with a large number of friends being observed by more people than someone with few friends. Given the increase in the use of social media, especially by adolescents, this can lead to potential bias and creation of social norms that favor more popular users of social media (Hodas, Kooti & Lerman, 2013). When individuals compare their own popularity to that of their friends, this can lead to elevated feelings of depression (Bollen, Gonçalves, van de Leemput & Ruan, 2017).

Along with this, increased usage of, and time spent on, these platforms has been found to be correlated to lower self-esteem, body image issues, and more symptoms of depression (Kalpidou, Costin and Morris 2011; Tiggemann and Slater, 2013) Those individuals with lower self-esteem and poorer self-image are more prone to engage in social comparison through spending time on social media (Hunt et al., 2018). Social comparison theory examines the process of comparing oneself with others (Yang, Holden and Carter, 2018; Festinger, 1954). According to Festinger's Social Comparison Theory, people use social information to learn about their own situation and compare themselves and their lives based on information they receive about others (de Vries, Möller, Wieringa, Eigenraam & Hamelink, 2018; Festinger, 1954). The theory proposes that, as humans, we compare achievement and performance, which is judgmental and competitive,

centering on how well one is doing relative to other people (Yang et al, 2018). This fundamental drive to compare we to others is based on two characteristics: upward and downward comparison. Upward comparisons are typically associated with negative self-feelings, such as feeling inferior. Downward comparisons are associated with feeling superior (Meier & Schäfer, 2018). Upward social comparison occurs when comparisons are made with individuals who possess superior characteristics. Using social media, individuals will encounter positive posts where individuals will tend to present positive sides of themselves (Wang, Wang, Gaskin, & Hawk, 2017). Upward comparison therefore frequently occurs with the repeated pervasive use of social media networking sites. The platforms offer tools and settings to manage how the user wants to be portrayed, with editing of photos to exhibit perfect happiness and flawless lives (Walter, 2007). This creates greater feelings of inadequacy, when users evaluate their current self in comparison to their dream ideal self (Vogel, Rose Roberts & Eckles 2014)

*Facebook depression phenomenon*

Use of social media platforms can have consequences on ability to control daily tasks, which can create negative events and influence individuals' negative states of mind (De Choudhury, Gamon, Counts & Horvitz, 2013). Problematic and excessive use of social media may have detrimental effects on personal and professional lives of individuals who use the platforms (Bányai, Zsila, Király, Maraz, Elekes, Griffiths, & Demetrovics, 2017). Using an advanced cognitive behavioural model of generalized problematic internet use (GPIU) with the use of social media platform Facebook, Lee, Cheung and Thadnai (2012) found that users had problems in work, academic performance and interpersonal relationships. A study conducted by Kross, Verduyn, Demiralp, Park, Lee, Lin & Ybarra (2013) using cross sectional research, found that, over a two-week period, the more one used social media platform can cause depression the

more their life satisfaction declined. In 2011 the American Academy of Pediatrics coined the term “Facebook depression”, a form of depression related to spending prolonged periods of time on social media sites such as Facebook (O’Keefe and Clarke-Pearson, p. 802, 2011). The platform portrays overwhelmingly positive impressions of friends’ pages, which leads to comparisons and negative self-assessments (Blease, 2015). Similarly, a correlational study by Lup, Trub & Rosenthal (2015) found that there was a positive relationship between the number of strangers followed. Findings also included, however, that positive social comparisons were associated with a decline in depressive symptoms (Lup, Trub & Rosenthal, 2015). Individuals who mostly followed people they knew where more likely to engage in positive social comparisons and had positive associations towards those they followed (Lup et al., 2015).

### 1.7 Anxiety and Social media

Anxiety is used to describe feelings of tension, nervousness and apprehension. Most people experience anxiety at some stage in their lives and it is an important survival mechanism (Speilberg, 2013). Anxiety can manifest as chronic illness, negatively impacting mental health and often spreading to other aspects of life beyond the initial starting point of the anxiety. Anxiety can take several forms such as social anxiety, panic anxiety, post-traumatic stress anxiety, and generalized anxiety (Beesdo, Bittner, Pine, Stein Höfler, Lieb & Wittchen, 2007). Adolescence is a heightened period of vulnerability. (Haller, Kadosh, Scerif & Lau, 2015). Adolescents are more concerned with feedback from the peers and are more susceptible to negativity if they are subject to peer exclusion (Haller, Kadosh, Scerif & Lau, 2015). Peer interactions carry importance for learning experiences with individual's having increased awareness for peers likes and dislikes so not to step outside social acceptability (Vetter, Leipold, Kliegel, Phillips & Altgassen, 2013). Social anxiety is a debilitating condition characterized by a persistent fear of being humiliated (American Psychiatric Association, 2013). Individuals with the disorder may fear several occasions that involves social interaction, such as conversations with strangers, joining in group or speaking on the telephone (Leigh and Clark, 2018).

Due to the pressure and fears of embarrassment individuals who experience social anxiety may evade unwanted social exchanges through avoidance used as a coping mechanism for social anxiety (Miers, Blöte, Heyne, & Westenberg, 2014) This could predict higher scoring in the DASS 21 scale in the current study with which research highlights that anxiety can translate into a range of negative consequences including suicidal feelings, poor psychosocial functioning, and heightened risk of psychopathology (McLaughlin & King, 2015). Research

suggests that individuals who are isolated and feel anxious thrive on online interaction as they don't have to engage in face to face communication, which they find to be uncomfortable (Ko, Yen, Yen Chen & Chen 2012). For anxious individuals, the online settings available on the social media platforms give them control over the messages they send and time for planning (Valkenburg and Peter, 2009). This preference of online interaction can develop into a negative preoccupation with online activities, feeling a need to escape in the cyber world and users may experiences increased irritability when trying to cut down on the amount of time spent online (Yao & Zhong, 2014). This can also have adverse effects on their offline lives as adults' users may also experience several functional impairments such as marriage problems, job loss or decreased productivity in the workplace or college failure (Yao et al 2014).

Social media can affect anxiety in adults through social comparisons made on the various social media platforms. Self-consciousness can quickly turn into a social anxiety in a phenomenon commonly referred to as "Compare and Despair" (Nahai, 2018). Davey (2016) claims social media can cause and create much social anxiety. If social comparisons are made to more lavish and exciting social media sites than one's own, a distorted perception of reality can occur (Magner, 2018). Individuals see people's positive emotional content believing the people and there friends are happier and more successful then what they feel themselves (Stead and Bibby, 2017). However, what individual's view on social media is an edited version of someone's life which is skewed towards positive content and fails to honestly reflect a person life (Stead *et al*, 2017). When separated from their smartphones and social media, many individuals experience anxiety and physiological withdrawal symptoms. (Elhai, Dvorak, Levine & Hall, 2017). If an individual hasn't visited a social media site for a long time, they fear missing out on live updates otherwise known as "Fear of Missing Out" (FOMO) (Blackwell,

Leaman, Tramposch, Osborne & Liss, 2017). Individuals tend to have uneasy and sometimes all-consuming feelings essentially due to the fact that people care about what others do and fear what others may think of their lives (Abel, Buff and Burr, 2016). As described by Przybylski (2013) FOMO is a psychological trait described as the pervasive apprehension that others might be having rewarding experiences when one is absent. This could be a driving factor in social media usage on the SMS as FOMO is said to be driven by user engagement and the need to check one's device (Buglass, Binder, Betts & Underwood, 2017). Jordan (2011) highlighted how individual's overestimate the positive experiences others having online and underestimate the negative emotional experiences of other people's lives compared to their own which was analyzed in through the participants response to questions on a survey that followed each of their emotional experience (Jordan, Monin, Dweck, Lovett, John & Gross, 2011). As a result, individual's with high FOMO often experiences low self-esteem and feelings of anxiety and to some degree social envy and social exclusion (Stead *et al* 2017; Przybylski et al, 2013).

### 1.8 Consideration of positive effects of social media

The current study realizes that not all research supports the links between social media usage and anxiety and depression. De la Pena and Quintanilla (2015) and Kramer, Guillory and Hancock (2014) suggest that social media usage could alleviate anxiety and depression by improving connections with family and friends (De la Pena et al, 2015) and positive experiences are easily shared on social media (Kramer et al., 2014). Social media sites do have the potential to change how one socializes both interpersonal and community level. On an interpersonal level the medium can serve to lower the barriers to social interaction and enable connections between individuals that might not otherwise take place. On a community level the features of these platforms lower the transaction cost for finding and connecting with people of the same interest. (Ellison, Lampe and Steinfield, 2009) When discussing the positive features of social media, it's important to discuss Social capital. Social capital refers to resources accumulated through relationships among people (Ellison, Steinfield and Lampe 2007). Bonding capital comes from close friends and family in the form of emotional support. Bridging social capital is associated with weak ties friends of friends or colleagues (Ellison et al 2009). A sample in Michigan State University undergraduate students found the positive outcomes of social media was measured using social capital theory found that among undergraduates surveyed intensive Facebook use was associated with higher social capital (Ellison *et al*., 2009). This social capital is a means of alleviating anxiety. Social media can act as a computer facilitated community to social interaction and may act as easier way to make friends. A study by Tian investigated individual's social interaction with new and existing friends through "blogging" examining the association between social anxiety and online friendships (Tian, 2013). Those who had high social anxiety were more motivated to make new friends via the platform and shared more intimate information

which in turn was associated with more new friends and higher quality of friendships (Tian, 2013). Depression studies have found that mental health disorder is mediated by social support offered through online networks members with a substantial amount of literature telling that more and more people are turning to the internet for social support (Macias et al 2005; Chung 2014; Wright and Bell 2003). For some depressed individuals' online groups may be more attractive opposed to face to face group sessions as users can self-disclose information and keep anonymity which may add to the therapeutic value (Keating, 2013).

Face-to-face support networks often decrease when online social media users use the internet for prolonged periods of time, they may choose computer mediated support rather than traditional methods (Ellison *et al.*, 2007). It is important to highlight that these findings may apply to one online population and may not be as effective for other. Wright and King (2013) suggest strongly that online social media network is beneficial to individuals who are socially isolated or live with a disability, other individuals may prefer face-to-face support. Future research should take these motives into account and identify who may benefit from online support and who may benefit from face-to-face which can be important for the development of future supportive intervention groups. The results in this current study may reveal a preference for social media networking as indicated by the response to the Social Media Scale (SMS). This could be linked to lower scoring on the DASS 21 scale if individuals feel using social media has positive connotations with there mental wellbeing.

### 1.9 Rationale

This study aims to deepen understanding into the association between social media usage and anxiety and depression in adults. The main research question expresses that social media usage is correlated with anxiety and depression. The research employed by the current study aims to expand on current research that social media is has a correlation to the mental health disorder of anxiety and depression while aiming to contribute to the vast amount of research that focuses on adolescents and teenage students and negative health impacts that social media has (Woods & Scott 2016; Blackwell *et al* 2017; O'Keeffe & Clarke-Pearson, 2011; Demirci et al 2015)The study also contributes new research that includes the older adult population when investigating the research question such as the current study. The research used a sample of college students and adult social media users from a Facebook forum aiming to contribute new research finding that's adds complete adult population which recent research through the scholarly literature platforms suggests such research is limited in (Google scholar and EBSCO). The study explores the likelihood that social media usage is positively linked with anxiety and depression levels. While some research has examined the effects of social media on mental health in the past there is still little research in regards on how using social media on a regular basis is linked to anxiety and depression in adults. Building on previous research also the study improves understanding correlation variables and the likelihood of developing depressive and anxious symptoms with social media and the different platforms used

The aim of the current research aim was to develop a better understanding of social media and the negatives effects on mental health in the areas of depression and anxiety. It also aimed to expand on current literature that tends to focus more on an adolescent population by using a sample of adults to explore social media use examining the possible link with depression and anxiety. This study has been conducted using two models of testing, the Social Media Scale (SMS) and the Depression Anxiety Stress Survey 21 (DASS 21) (See Appendices C)

**Hypothesis**: Individual's that score higher on the SMS will also score higher on the DASS 21. In other words, as scores increase on the SMS, they will also increase on the DASS 21.

# 2.0 Methods

## 2.1 Participants

Participants were taken from a convenient and snowball sample and were over the age of 18. Eighty-five individuals participated in this study through the use of an advertised link posted on social media platforms. All procedures were reviewed and approved by the Dublin Business School Psychology Research Ethics Committee and all ethical principles adhered to the Code of Professional Ethics throughout the posting of the survey and collection of data. All participation was voluntary, and individuals were given informed consent.

## 2.2 Design and Procedure

The study employed a questionnaire-based study using a quantitative, correlational design. For this study, Google Forms was used to create a questionnaire that presented two surveys. These surveys included Social Media Scale (SMS) and Depression and Anxiety Stress Scale (DASS 21). In order to gain access to the sample, the online questionnaire was created with a link that was posted onto WhatsApp, Facebook and Instagram. Additionally, the questionnaire was privately messaged to acquittances which in turn was distributed further allowing a snowballing sample method to take place. All private group and pages online where the questionnaire were posted had permission prior to posting and sending. All the participants that were willing to take part and met the age criteria of eighteen and over were presented with a short message explaining the nature of the study and what the thesis was looking to investigate. Participants were informed with a debriefing page of their right to withdraw and were presented with information of support services if they felt subject to any negative feelings as a result of the

questions. Upon clicking on the link provided via the social media platforms, participants were directed to the questionnaire and first completed information and consent. From there participants proceeded to complete the Social Media Scale (SMS) and The Depression and Anxiety Stress Scale (DASS 21). (See Appendices C)

### 2.3 Materials

The questionnaire used in this study consisted of three sections one section was to inform the participants of their rights and what the study concerns, another asked social media usage related questions and the third section was to administer the DASS 21.

#### 2.3.1 Measures

#### 2.3.2 Social media scale (SMS)

The Social Media Scale was created for the purposes of this study. It aimed to get insight into what people will use social media for and how often they use the platforms. It consisted of nine questions with multiple choice answers ranging anywhere from two choices to seven choices. Question six and question eight presented one multiple choice option that was open ended if selected. See table 1 for all SMS questions.

Table 1

| Question |
| --- |
| Q1. How many social media sites do you have accounts with? |
| Q2. How much time do you spend on social media per day? |
| Q3. How many times a day do you look at social media? |
| Q4. How often do you post on social media? |
| Q5. When do you access social media (choose one or more answers)? |
| Q6. Do you check social media before you get out of bed? |
| Q7. Is checking social media the last thing you do before getting out of bed? |
| Q8. What do you use social media for (indicate one or more answers)? |
| Q9. Has social media affected your relationship with another person? |

Due to the nature of question eight and nine, the SMS total score was only calculated using questions one through seven. Questions eight and nine were analyzed separately.

### 2.3.3 Depression Anxiety Stress Scale (DASS 21).

The DASS 21 is a scale that quantitively measures depression, anxiety and stress with twenty-one questions. Each question is measured on a four point Likert scale with 0= did not apply to me at all/NEVER, 1= Applied to me to some degree, or some of the time/SOMETIMES, 2=Applied to me to a considerable degree, or a good point of time/OFTEN and 3= Applied to me very much, or most of the time/ALMOST ALWAYS (See Appendix A for full DASS 21 scale). Each question is a part of either one or more of three factors being measured within the DASS 21. These factors are depression, anxiety and stress. For example, Question 1 states, “I find it

hard to wind down." This address both the depression and anxiety factors. A total score was calculated for each factor. Additionally, for the purposes of this research an overall total score of all three factors was calculated.

### 2.4 Analysis

Preliminary analysis for correlation was conducted by generating a scatterplot between the SMS and DASS 21. This was done in order to check for outliers, inspect the distribution of data points, and determine the direction of the relationships between variables. It was determined that Pearson correlation analysis was appropriate and therefore the analysis used to examine the relationship between the total scores on the SMS and DASS 21. Regression analysis was conducted to explore the interrelationship between the SMS and the individual factors of the DASS 21; depression, anxiety and stress.

# 3.0 Results

A correlational design was used in the current study. Data from the participants were entered into the Statistical Package for Social Sciences (SPSS) computer program version 25 and an alpha .05 was set for determining statistical significance. The present investigation obtained a sample size of eighty-five participants all of which were recruited through social media platforms of WhatsApp, Facebook and Instagram.

## 3.0.1 Missing Values

For this study, missing data analysis was not conducted due to a high number of missing variables for individual participants. Eighty-five individuals participated in this study, however 12 were excluded from analysis due to missing data. The total number of participants analyzed was N=69.

## 3.0.2 Descriptives

All statistics were computed on SPSS 25. Descriptives were calculated for the total score for participants (N=69) on both the Social Media Scale and the Depression & Anxiety Scale (reference), see Table 2 below.

**Table 2**

**Total Score Descriptives**

| Column Head | N | Minimum | Maximum | Mean | SD |
|---|---|---|---|---|---|
| Social Media Scale | 69 | 8 | 32 | 21 | 5.4 |
| Depression & Anxiety Scale | 69 | 0 | 54 | 17 | 13.9 |

### 3.0.3 Reliability

A reliability test was conducted on the SMS and the DASS 21. The SMS has acceptable internal consistency with a Cronbach alpha coefficient reported of .77. As a widely used scale, the internal consistency of the DASS 21 was expected to be good. In this study, this held through with a Cronbach alpha coefficient reported of .96.

### 3.0.4 Correlations

The relationship between social media use (as measured by the SMS) and depression, anxiety and stress (as measured by the DASS 21) was investigated using Pearson product-moment correlation coefficient. As stated previously, preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a small positive correlation with no significance, between the two variables, r=.17, n=69, p=.15. This indicates that while higher social media usage correlates with higher depression, anxiety and stress scores, it is not significant enough for a relationship to be determined. Each DASS 21 factors was analyzed as well. All factors showed a positive, but not significant correlation.

### 3.0.5 Regression

For further exploration, standard multiple regression was used to assess the ability of three measures within the DASS 21 (Depression Total, Anxiety Total, Stress Total) to predict levels of social media use (SMS). Multicollinearity was indicated by low Tolerance (< .3) and high VIF (> 10) for all three measures. Goodness of fit for this model was very low. The total variance explained by the model as a while was 4.4%, $F(3, 65) = .99$, $p > .05$. Stress contributed most to explaining social media use (beta = .49), however it did not make a significant contribution to the prediction of SMS scores ($p = .31$).

### 3.0.6 SMS Question 8/Question 9 Analysis

On the SMS scale, question eight was analyzed looking at frequencies for each multiple-choice option presented to the participant. The top reported reason for using social media was "Keeping in touch with friends and family" with 70.6 % of participants choosing this option. The remaining percentages can be seen below in Table 3.

Table 3

SMS Question 8 Answers

| | n= | % |
|---|---|---|
| Keeping in touch with friends and family | 60 | 70.6 |
| Event Planning | 21 | 24.7 |
| Buying and selling | 18 | 21.2 |
| Inspiration | 27 | 31.8 |
| News | 51 | 60 |
| Dating | 7 | 8.2 |
| To meet new friends | 5 | 5.9 |
| To find employment | 10 | 11.8 |
| To browse/time waste | 59 | 69.4 |
| Work* | 1 | 1.2 |
| Distraction from study* | 1 | 1.2 |
| Messaging* | 1 | 1.2 |

*Note*: Answers for the open-ended multiple-choice option labeled with *.

Question 9 results showed that 59.4% (n=41) of participants feel as if social media had no impact on their relationship. The other 39.1% (n=27) reported “yes” to social media having some sort of impact on their relationship.

## 4.0 Discussion

This study examined the relationship between adult social media use and depression, anxiety and stress. The hypothesis was that as scores on the SMS increased, scores on the DASS 21 would increase as well, resulting in a positive correlation between social media use and an individual's levels of depression, anxiety, and stress. While a positive correlation was indeed found during analysis, it was not significant. This could indicate that there is no relationship between social media use and depression, anxiety and stress. However, there are many other factors to be considered. This section will discuss the findings of the current study, the limitations and strengths of the current research, implications of findings and future research directions in this field. The relationship between social media use (as measured by the SMS) and depression, anxiety and stress (as measured by the DASS 21) was investigated using Pearson product-moment correlation coefficient. Results for the hypothesis found there was a small positive correlation with no significance, between the two variables, ($r=.17$, $n=69$, $p=.15$). This indicates that while higher social media usage correlates with higher depression, anxiety and stress scores, it is not significant enough for a relationship to be determined. This did not support previous research findings that reported social media use was associated with higher levels of anxiety and depression (Woods et al 2016; Elhai et al 2017: Pantic et al 2012).

A limited literature review has similar findings albeit not directly related to the indicators used. For example, Xao et al., (2017) found that internet addiction did not correlate with depression and psychosocial problems. Kross et al, (2013) throws into question Facebook, association with a decline in wellbeing as a more likely scenario is that people use Facebook when they are feeling bad

### 4.1 Implications of findings and Applications

The current study found that there was a small positive correlation between social media usage and anxiety and depression. While higher social media usage correlated with higher depression, anxiety and stress scores it was not significant enough for a relationship to be determined. The current study findings accept the null hypothesis. This study is an important antithesis to the myriad of findings that suggest other than that social media usage links to anxiety and depression symptoms. It is important for building an ongoing body of research to investigate the links between anxiety and depression and social media use, as users feature across the lifespan and users are increasingly younger despite age limitations. Findings could indicate that individuals who are inclined towards anxiety and depression have their condition and associated health problems triggered by a range of factors to which social media usage offers a minor contribution. It is possible that this sample using snowball sampling did not capture people for whom problematic smartphone use or addiction has occurred. Anxiety and depression may be more prominent in this specific cohort. Research conducted by Demircis (2015) to investigate smartphone use severity and sleep quality, depression and anxiety in students. The findings revealed that there was positive correlation between smartphone addiction scale scores and depression levels, anxiety levels and sleep quality scores. In other terms the overuse may lead to depression and anxiety and daytime dysfunction as knock on effect of sleep problems (Demirci et al, 2015). Smartphone addiction may suggest that anxiety and depression smartphones contain many features and that the behavior addiction is what is related to the negative psychological factors rather than social media use and what the current study attempted to address (Lee et al 2014). Whilst the association between social media use and anxiety and depression remain somewhat unclear in current findings there is several study finidings that

suggest that sleep quality is a significant factor in anxiety and depression. It could be suggested that late night social media use could result in later bedtimes and poor sleep quality which in turn could contribute to anxiety and depression (Jackson, Sztendur, Diamond, Byles & Bruck, 2014) Similalry Woods et al 2016 reported that there was a indirect link between social media and anxiety and depression mediated by poor sleep and that individuals who are more likely to have increased risk of anxiety and depression.

Practical implications of this research could include the introduction of online applications or websites that create awareness of the risk of increased time spent on social media and potential negative effects it has on depression and anxiety. Kuss and Griffiths (2011) found that excessive use of online social networking developed into an unhealthy addiction driven by the various platforms and the variety of activities and behaviors. Andreassen et al (2016) indicated that addicted social networkers were more anxious and have difficulties communicating face-to-face, preferring online over real life communication. According to the current study and past research such as that conducted by Andreassan et al (2016), increased time spent on social media is associated with depression and anxiety symptoms. Aalbers et al (2018) highlighted that the passive use of social media such as scrolling and browsing was positively correlated with symptoms of depression, loneliness and a reduced sense of belonging. This was addressed in the current study through question eight on the SMS scale, “What do you use social media for (indicate one or more answers)?” One of the top reported reasons for using social media was “To browse/time waste” with 69.4 percent of people choosing this option. Social Media Campaigns that promote time spent off social media, such as Scroll Free September and promotion of digital Sabbath, might act as a way to heighten awareness at a national level and

could be incorporated in the education system to combat onset of problematic social media usage and addiction in adolescents and adults (RSPH 2018; Barnett 2015). Celebrity campaigners like Ryan Tubridy, an Irish radio and television broadcaster, could aid in increasing general awareness on overusing smartphones to a wider and older adult audience (RTE 2018). Applications (Apps) can help monitor phone and social media use combating the pervasiveness of social media use and helping to gain more control and reduce negative health effects. Apps currently available include Moment and Forest that aim to reduce phone usage. The moment app uses short daily exercises provided through a moment coach which promotes healthier balance by tracking how much a individuals uses there phone each day, helps creates daily limits on the usage, and send alerts when time is exceeded (Moment 2019) Forest is an interactive app procrastination and constant checking of social media, aiming to improve focus and time management . Users grow a virtual forest by not uses their phones during times set at the beginning earning virtual currency to purchase real trees. The positive reinforcement may act as a potential control for maladaptive behaviour (Forest 2019)

### 4.2 Strengths and Limitations

The sample is deliberately fluid capturing adults over 18 years in a snowball sample. It has not confined the sample to age groups or gender variations. The findings are a base for further research that makes those distinctions as necessary. For example, National studies such as Growing up in Ireland and TILDA target specific age groups and could include reference to Social Media Usage. (ESRI 2019; TILDA 2019) Age Action offers courses on Social Media usage for older citizens and could include questions as appropriate in their evaluation of such courses (Age Action Ireland 2019). There were several limitations to this study. Firstly, the sample size in the current research (N=69) is not representative of the wider and larger social media user sample. There was a high number of missing variables for the individual participants. Eighty-five individuals participated in the study however twelve were excluded from analysis due to missing data. This affected the statistical power of the study and complicated analysis. Future research should incorporate a larger, more generalized sample to increase the ecological validity of this research. To avoid missing data in future research, there could be added emphasis on planning of the study and data collection with the alternative use of manual distribution and collection of questionnaires opposed to the online method. Time and resources where limited in this study to a network of friends and social media groups. While efforts were made to access wider population such as the participants taken from Facebook, open forum limited time and resources restricted this sample. Future research should consider expanding the investigation to engage a more diverse participant.

The Social Media Scale questions asked in the survey cannot capture fully the emotional responses of the respondents. Similarly, the DASS 21 scale limited participants to answer on a four-point Likert scale which may not accurately reflect their personal thoughts in turn refining

the overall answers. Additionally, the current research did not account for demographics such as gender, age, ethnicity, education, etc., which didn't allow for multiple factors to be considered when conducting analysis. The current study was only able to explore the correlation between SMS and DASS 21 total scores. Demographics would have allowed for a more in-depth analysis.

### 4.3 Future Research Directions

To address limitations associated with research in this area, a longitudinal study would provide a more accurate result associated with the long-term effects of using social media on anxiety and depression. A period of several months where the research design involved repeated observations of the same variables would allow for events that could influence levels of social depression and anxiety. Additionally, further research in this area should consider acquiring a larger sample size and should also cover a broader sample source so that cultural differences are included to ensure more generalized and representative findings. A larger sample size of one hundred or more adults would provide more precise and accurate mean values providing a smaller margin for error. A larger mean would also allow for research to better identify outliers. Further research may get a better understanding of possible correlations between variables such as depression and anxiety by adding similar emotional states such as stress and studying different variables such as social comparison. Finally, future research could ask a wide range of demographic variables so that variances could be tested and isolated to investigate differences in social media use and links to anxiety and depression.

### 4.4 Conclusion/Summary

This study set out to examine social media usage and its links to anxiety and depression in adults. This research can be used for a benchmark finding which can be compared with other research in the area of social media use for adults in a under researched adult Irish population. This thesis found that there was a small positive correlation between social media use and an individual's levels of depression, anxiety, and stress but one in which was not statistically significant. This research conflicts with previous results in the use of social media as linked to depression and anxiety. Similarly, the paper sheds new light on under-researched adult social media users as previous research tended to focus on young adolescents

## 5.0 References

Aalbers, G., McNally, R. J., Heeren, A., de Wit, S., & Fried, E. I. (2018). Social media and ion symptoms: A network perspective. *Journal of Experimental Psychology: General*.

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 (Online)*, *14*(1), 33.

Age Action (2019). Beginners Computer and Smartphone Training. Retrieved March 22, 2019, fromhttps://www.ageaction.ie/how-we-can-help/getting-started-computer-training/getting-started-tutor-and-learner-resources-1

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.

Amirazodi, F., & Amirazodi, M. (2011). Personality traits and self-esteem. *Procedia-and Behavioral Sciences*, *29*, 713-716.

Anderson, M., & Jiang, J. (2018). Teens, social media & technology 2018. *Washington, DC: Pew Internet & American Life Project. Retrieved June*, *3*, 2018.

Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E.,Pallesen, S. (2016). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study. *Psychology of Addictive Behaviors*, *30*(2), 252.

Back, M. D., Stopfer, J. M., Vazire, S., Gaddis, S., Schmukle, S. C., Egloff, B., & Gosling, S. D. (2010). Facebook profiles reflect actual personality, not self-idealization. *Psychological science*, *21*(3), 372-374.

Bányai, F., Zsila, Á., Király, O., Maraz, A., Elekes, Z., Griffiths, M. D., ... & Demetrovics, Z. (2017). Problematic social media use: Results from a large-scale nationally representative adolescent sample. *PLoS One*, *12*(1), e0169839.

Barnett, B. (2015). Your phone is ruining your life. We all need a digital sabbath. Retrieved March 21, 2019, from https://www.telegraph.co.uk/women/womens-life/11494737/Your-phone-is-ruining-your-life.-We-all-need-a-digital-sabbath.html

Beesdo, K., Bittner, A., Pine, D. S., Stein, M. B., Höfler, M., Lieb, R., & Wittchen, H. U. (2007). Incidence of social anxiety disorder and the consistent risk for secondary depression in the first three decades of life. *Archives of general psychiatry*, *64*(8), 903-912.

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.

Blease, C. R. (2015). Too many 'friends,'too few 'likes'? Evolutionary psychology and 'Facebook depression'. *Review of General Psychology*, *19*(1), 1.

Bollen, J., Gonçalves, B., van de Leemput, I., & Ruan, G. (2017). The happiness paradox: your friends are happier than you. *EPJ Data Science*, *6*(1), 4.

Buglass, S. L., Binder, J. F., Betts, L. R., & Underwood, J. D. (2017). Motivators of online vulnerability: The impact of social network site use and FOMO. *Computers in Human Behavior*, *66*, 248-255.

Cain, J. (2018). It's Time to Confront Student Mental Health Issues Associated with Smartphones and Social Media. *American journal of pharmaceutical education*, *82*(7), 6862.

Central Statistics Office (2017). Information Society Statistics. Retrieved March 21, 2019, from https://www.cso.ie/en/releasesandpublications/er/isshh/informationsocietystatistics-households2017/

Chen, S., Lin, L., & Yuan, X. (2017, June). Social media visual analytics. In *Computer GraphicsForum* (Vol. 36, No. 3, pp. 563-587).

Chung, J. E. (2014). Social networking in online support groups for health: how online social networking benefits patients. *Journal of health communication*, *19*(6), 639-659.

Davey, G. C. (2016). Social media, loneliness, and anxiety in young people. *Psychology Today, December*, *15*.

De Choudhury, M., Gamon, M., Counts, S., & Horvitz, E. (2013). Predicting depression via social media. *ICWSM*, *13*, 1-10.

De la Peña, A., & Quintanilla, C. (2015). Share, like and achieve: the power of Facebook to reach health□related goals. *International Journal of Consumer Studies*, *39*(5), 495-505.

Deloitte Ireland (2017). Global Mobile Consumer Survey. Retrieved March 21, 2019, from https://www2.deloitte.com/ie/en/pages/technology-media-and-telecommunications/articles/global-mobile-consumer-survey0.html

Demirci, K., Akgönül, M., & Akpinar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of behavioral addictions*, *4*(2), 85-92.

De Vries, D. A., Möller, A. M., Wieringa, M. S., Eigenraam, A. W., & Hamelink, K. (2018). Social comparison as the thief of joy: emotional consequences of viewing strangers' Instagram posts. *Media Psychology*, *21*(2), 222-245.

Donnelly, E., & Kuss, D. J. (2016). Depression among users of social networking sites (SNSs): The role of SNS addiction and increased usage. *Journal of Addiction and Preventive Medicine*, *1*(2), 107.

Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015). Social media update 2014. *Pew research center*, *9*

Elhai, J. D., Dvorak, R. D., Levine, J. C., & Hall, B. J. (2017). Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *Journal of affective disorders*, *207*, 251-259.

Ellison, N. B., Lampe, C., & Steinfield, C. (2009). Social network sites and society: Current trends and future possibilities. *interactions*, *16*(1), 6.

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.

Festinger, L. (1954). A theory of social comparison processes. *Human relations*, *7*(2), 117-140.

Forest (2019). Stay focused, be present. Retrieved March 21, 2019, fromhttps://www.forestapp.cc/

Gosling, S. D., Augustine, A. A., Vazire, S., Holtzman, N., & Gaddis, S. (2011). Manifestations of personality in online social networks: Self-reported Facebook-related behaviors and observable profile information. *Cyberpsychology, Behavior, and Social Networking*, *14*(9), 483-488.

Greenberg, P. E., Fournier, A. A., Sisitsky, T., Pike, C. T., & Kessler, R. C. (2015). The economic burden of adults with major depressive disorder in the United States (2005 and 2010). *The Journal of clinical psychiatry*, *76*(2), 155-162.

Haller, S. P., Kadosh, K. C., Scerif, G., & Lau, J. Y. (2015). Social anxiety disorder in adolescence: How developmental cognitive neuroscience findings may shape understanding and interventions for psychopathology. *Developmental cognitive neuroscience*, *13*, 11-20.

Hodas, N. O., Kooti, F., & Lerman, K. (2013, June). Friendship paradox redux: Your friends are more interesting than you. In *Seventh International AAAI Conference on Weblogs and Social Media*.

Hunt, M. G., Marx, R., Lipson, C., & Young, J. (2018). No More FOMO: Limiting Social Media Decreases Loneliness and Depression. *Journal of Social and Clinical Psychology*, *37*(10), 751-768.

Jackson, M. L., Sztendur, E. M., Diamond, N. T., Byles, J. E., & Bruck, D. (2014). Sleep difficulties and the development of depression and anxiety: a longitudinal study of young Australian women. *Archives of women's mental health*, *17*(3), 189-198.

Jackson, M. O. (2016). The friendship paradox and systematic biases in perceptions andocial rms

Jeronimus, B. F., Riese, H., Sanderman, R., & Ormel, J. (2014). Mutual reinforcement between neuroticism and life experiences: A five-wave, 16-year study to test reciprocal causation. *Journal of personality and social psychology*, *107*(4), 751.

Jordan, A. H., Monin, B., Dweck, C. S., Lovett, B. J., John, O. P., & Gross, J. J. (2011). Misery has more company than people think: Underestimating the prevalence of others' negative emotions. *Personality and Social Psychology Bulletin*, *37*(1), 120-135.

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), 183-189.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business horizons*, *53*(1), 59-68.

Keating, D. M. (2013). Spirituality and support: A descriptive analysis of online social support for depression. *Journal of religion and health*, *52*(3), 1014-1028.

Kemp, S. (2018). Digital in 2018: Essential Insights Into Internet Social Media Mobile and Ecommerce Use Around the World. *We Are Social*.

Kırcaburun, K., Kokkinos, C. M., Demetrovics, Z., Király, O., Griffiths, M. D., & Çolak, T. S. (2018). Problematic online behaviors among adolescents and emerging adults: Associations between cyberbullying perpetration, problematic social media use, and psychosocial factors. *International Journal of Mental Health and Addiction*, 1-18.

Ko, C. H., Yen, J. Y., Yen, C. F., Chen, C. S., & Chen, C. C. (2012). The association between Internet addiction and psychiatric disorder: a review of the literature. *European Psychiatry*, *27*(1), 1-8.

Kramer, A. D., Guillory, J. E., & Hancock, J. T. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences*, *111*(24), 8788-8790.

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.

Komarraju, M., Karau, S. J., Schmeck, R. R., & Avdic, A. (2011). The Big Five personality traits, learning styles, and academic achievement. *Personality and individual differences*, *51*(4), 472-477.

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), 3528-3552.

Lee, E., Ahn, J., & Kim, Y. J. (2014). Personality traits and self-presentation at Facebook. *Personality and Individual Differences*, *69*, 162-167.

Lee, Z. W., Cheung, C. M., & Thadani, D. R. (2012, January). An investigation into the problematic use of Facebook. In *2012 45th Hawaii International Conference on System Sciences* (pp. 1768-1776). IEEE.

Leigh, E., & Clark, D. M. (2018). Understanding social anxiety disorder in adolescents and improving treatment outcomes: applying the cognitive model of Clark and Wells (1995). *Clinical child and family psychology review*, *21*(3), 388-414.

Lup, K., Trub, L., & Rosenthal, L. (2015). Instagram# instasad?: exploring associations among instagram use, depressive symptoms, negative social comparison, and strangers followed. *Cyberpsychology, Behavior, and Social Networking*, *18*(5), 247-252.

Macias, W., Lewis, L. S., & Smith, T. L. (2005). Health-related message boards/chat rooms on the Web: discussion content and implications for pharmaceutical sponsorships. *Journal of Health Communication*, *10*(3), 209-223.

Magner, M. (2018). Social Media's Effect on Mental Health: How America's Youth are More Vulnerable to its Negative Implications.

McLaughlin, K. A., & King, K. (2015). Developmental trajectories of anxiety and depression in early adolescence. *Journal of abnormal child psychology*, *43*(2), 311-323.

Michikyan, M., Subrahmanyam, K., & Dennis, J. (2014). Can you tell who I am? Neuroticism, extraversion, and online self-presentation among young adults. *Computers in Human Behavior*, *33*, 179-183.

Meier, A., & Schäfer, S. (2018). The Positive Side of Social Comparison on Social Network Sites: How Envy Can Drive Inspiration on Instagram. *Cyberpsychology, Behavior, and Social Networking, 21*(7), 411-417.

Miers, A. C., Blöte, A. W., Heyne, D. A., & Westenberg, P. M. (2014). Developmental pathways of social avoidance across adolescence: the role of social anxiety and negative cognition. *Journal of Anxiety Disorders*, *28*(8), 787-794.

Moment (2019). Less phone. More life. Retrieved March 21, 2019, from ttps://inthemoment.io

Moore, K., & McElroy, J. C. (2012). The influence of personality on Facebook usage, wall postings, and regret. *Computers in Human Behavior*, *28*(1), 267-274.

Nahai, F. (2018). The stress factor of social media.

O'Keeffe, G. S., & Clarke-Pearson, K. (2011). Clinical report—the impact of social media on children, adolescents, and families. *Pediatrics*, peds-2011.

Pantic, I. (2014). Online social networking and mental health. *Cyberpsychology, Behavior, and Social Networking*, *17*(10), 652-657.

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*(4), 1841-1848.

Rozgonjuk, D., Ryan, T., Kuljus, J. K., Täht, K., & Scott, G. G. (2019). Social comparison orientation mediates the relationship between neuroticism and passive Facebook use. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *13*(1).

Royal Society For Public Health (2018). Scroll Free September. Retrieved March 21, 2019, from https://www.rsph.org.uk/our-work/campaigns/scroll-free-september.html

Raido Teilifis Eireann [RTE] (2018). A guide to disconnecting from social media for a while. Retrieved March 21, 2019, from https://www.rte.ie/lifestyle/living/2018/1119/1011842-a-guide-to-disconnecting-from-social-media-for-a-while/

Seidman, G. (2013). Self-presentation and belonging on Facebook: How personality influences social media use and motivations. *Personality and Individual Differences*, *54*(3), 402-407.

Semmes, J. (2017). Scrolling is the New Smoking. Retrieved March 21, 2019, from https://coastalcounselinggroup.com/articles/scrolling-is-the-new-smoking/

Spielberger, C. D. (Ed.). (2013). *Anxiety and behavior*. Academic Press.

Spielberg, J. M., De Leon, A. A., Bredemeier, K., Heller, W., Engels, A. S., Warren, S. L., ... & Miller, G. A. (2013). Anxiety type modulates immediate versus delayed engagement of attention□related brain regions. *Brain and behavior*, *3*(5), 532-551.

Sriwilai, K., & Charoensukmongkol, P. (2016). Face it, don't Facebook it: impacts of social media addiction on mindfulness, coping strategies and the consequence on emotional exhaustion. *Stress and Health*, *32*(4), 427-434.

Statista (2018). Number of social media users worldwide from 2010 to 2021 (in billions). Retrieved March 20, 2019, from https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/

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.

Sticca, F., & Perren, S. (2013). Is cyberbullying worse than traditional bullying? Examining the differential roles of medium, publicity, and anonymity for the perceived severity of bullying. *Journal of youth and adolescence*, *42*(5), 739-750.

Takao, M., Takahashi, S., & Kitamura, M. (2009). Addictive personality and problematic mobile phone use. *CyberPsychology & Behavior*, *12*(5), 501-507.

Takahashi, Y., Uchida, C., Miyaki, K., Sakai, M., Shimbo, T., & Nakayama, T. (2009). Potential benefits and harms of a peer support social network service on the internet for people with depressive tendencies: qualitative content analysis and social network analysis. *Journal of medical Internet research*, *11*(3).

Tandon, M., & Director &HoI, D. (2018). Role of Social Media in Social Change: Issues and Concerns. *International Journal of Engineering Science*, *17289*.

Tian, Q. (2013). Social anxiety, motivation, self-disclosure, and computer-mediated friendship: A path analysis of the social interaction in the blogosphere. *Communication Research*, *40*(2), 237-260.

Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, *46*(6), 630-633.

Trinity College Dublin. The Irish Longitudinal Study on Ageing [TILDA] (2019). Retrieved March 22, 2019, from https://tilda.tcd.ie/

Tong, W. T., Islam, M. A., Low, W. Y., Choo, W. Y., & Abdullah, A. (2019). Prevalence and Determinants of Pathological Internet Use among Undergraduate Students in a Public University in Malaysia. *The Journal of Behavioral Science*, *14*(1), 63-83

Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among US adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science*, *6*(1), 3-17.

Valkenburg, P. M., & Peter, J. (2009). Social consequences of the Internet for adolescents: A decade of research. *Current directions in psychological science*, *18*(1), 1-5.

Van Dijck, J., & Poell, T. (2013). Understanding social media logic. *Media and communication*, *1*(1), 2-14.

Vetter, N. C., Leipold, K., Kliegel, M., Phillips, L. H., & Altgassen, M. (2013). Ongoing development of social cognition in adolescence. *Child Neuropsychology*, *19*(6), 615-629 American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, *3*(4), 206.

Wang, J. L., Wang, H. Z., Gaskin, J., & Hawk, S. (2017). The mediating roles of upward social comparison and self-esteem and the moderating role of social comparison orientation in the association between social networking site usage and subjective well-being. *Frontiers in psychology*, *8*, 771.

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.

Wright, K. B., Bell, S. B., Wright, K. B., & Bell, S. B. (2003). Health-related support groups on the Internet: Linking empirical findings to social support and computer-mediated communication theory. *Journal of Health Psychology*, *8*(1), 39-54.

Wright, K. B., Rosenberg, J., Egbert, N., Ploeger, N. A., Bernard, D. R., & King, S. (2013). Communication competence, social support, and depression among college students: A model of Facebook and face-to-face support network influence. *Journal of health communication*, *18*(1), 41-57.

Xue, K., Yang, C., & Yu, M. (2018). Impact of new media use on user's personality traits. *Quality & Quantity*, *52*(2), 739-758.

Yang, C. C., Holden, S. M., & Carter, M. D. (2018). Social media social comparison of ability (but not opinion) predicts lower identity clarity: Identity processing style as a mediator. *Journal of youth and adolescence*, *47*(10), 2114-2128.

Yao, M. Z., & Zhong, Z. J. (2014). Loneliness, social contacts and Internet addiction: A cross-lagged panel study. *Computers in Human Behavior*, *30*, 164-170.

Yen, J. Y., Yen, C. F., Chen, C. S., Wang, P. W., Chang, Y. H., & Ko, C. H. (2012). Social anxiety in online and real-life interaction and their associated factors. *Cyberpsychology, Behavior, and Social Networking*, *15*(1), 7-12.

# 6. Appendices

## Appendix A

**Is Social Media usage linked to anxiety and depression in adults**

My name is Liam Roberts and I am a student conducting research as part of my final year thesis. I want to find out is social media usage linked to health problems in adults. Filling out this survey below will allow me to develop an understanding of the relationship between these variables and social media. Your participation in this survey is voluntary and you are free to not participate.

This research is completely anonymous. However, it is my intention to ensure this experience is a positive one. If you have any queries about the study beyond that's provided here please do not hesitate to contact me at xxxxxxxx. . My supervisor can also be contacted at xxxxxxxx. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contacts for support services are included below. These are some help lines you contact if you are experiencing any emotional and physical problems.

The Samaritans 42 (116123) and email: jo@samariatans.org

Teen line Ireland (1800 833 634)

Mental Health (01) 284 1166

Participation is completely voluntary and so you are not obliged to take part. Participation is anonymous and confidential. As such responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected. The data taken from these online questionnaires will not be used for anything other than this thesis. It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

**Please Tick the box below if you consent to participating in this study.**

Yes, I consent to participating in the study

**Please tick the box below if you are over the age of 18**

Yes, I am over the age of 18

## Appendix B

**Depression and Anxiety Stress Scale (DASS 21)**

**Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement. The rating scale is as follows:**

Q1. I found it hard to wind down (0 1 2 3)

Q2. I was aware of dryness of my mouth (0 1 2 3)

Q3. I couldn't seem to experience a positive feeling at all (0 1 2 3)

Q4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion (0 1 2 3)

Q5. I found it difficult to work up the initiative to do things (0 1 2 3)

Q6. I experience trembling (e.g in the hands) (0 1 2 3)

Q7. I tended to over-react to situations (0 1 2 3)

Q8. I felt that I was using a lot of nervous energy (0 1 2 3)

Q9. I was worried about situations in which I might panic and make a fool of myself (0 1 2 3)

Q10. I felt that I had nothing to look forward to (0 1 2 3)

Q11. I found myself getting agitated (0 1 2 3)

Q.12 I found it difficult to relax (0 1 2 3)

Q.13 I felt down-hearted and blue (0 1 2 3)

Q.14. I was intolerant of anything that kept me from getting on with what I was doing (0 1 2 3)

Q.15. I felt I was close to panic (0 1 2 3)

Q.16 I was unable to become enthusiastic about anything (0 1 2 3)

Q.17. I felt I wasn't worth much as a person (0 1 2 3)

Q.18 I felt that I was rather touchy (0 1 2 3)

Q.19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of my heart increase, heart missing a beat) (0 1 2 3)

Q.20. I felt scared without any good reason (0 1 2 3)

Q.21. I felt that life was meaningless (0 1 2 3)