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Social Media & Mental Health: An Examination of Tiktok & Mental Health Outcomes

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ABSTRACT

SOCIAL MEDIA AND MENTAL HEALTH: AN EXAMINATION OF TIKTOK AND MENTAL HEALTH OUTCOMES

The goal of this research study was to examine the relationship between amount of Tiktok use and the results of various mental health scales. The hypothesis was that increased Tiktok use would be correlated with a decrease in self-esteem, and an increase in depressive symptoms, anxiety symptoms, and overall loneliness. Participants were recruited on Amazon Mechanical Turk (MTurk) and paid a small monetary benefit in exchange for completion of the study. There were a total of 285 participants. Correlations and linear regression analysis were used to determine statistical significance; results showed no statistical significance and none of the hypotheses were supported. Post-hoc analyses were conducted to determine the differences between active Tiktok users and non-users; no statistical significance was found.

Keywords: social media, Tiktok, self-esteem, depression, anxiety

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Introduction

Internet use and social media use, in particular, have increased exponentially among adolescents and young adults in the past decade (de Calheiros Velozo & Stauder, 2020). The Pew Research Center reported in 2015 that 92% of American teenagers aged 13 to 17 participate in online activities daily, with 24% of those daily users being constantly connected online (Lenhart et al., 2015). A recent report detailed the usage patterns of global social media use, with 4.3 billion people having social media accounts (We Are Social, 2021). Additionally, one study suggested that people spend an average of 2 hours and 22 minutes on social media per day (We Are Social, 2021).

Social media is an increasingly significant part of peoples' lives; thus, researchers have sought to discern whether or not social media is harmful or beneficial for its users' well-being. Twenge and colleagues (2019b) analyzed mental health outcome data across several generations (e.g., Gen-Z, Baby Boomers, and Millennials) from 2008 to 2017. Twenge et al. (2019b) found an increase in indicators for mood disorders and suicide-related outcomes as time progressed for all age groups; however, adolescents and young adults saw the largest increase over time in this longitudinal study. These results suggest that cultural changes over time have affected adolescents and young people more than older generations (Twenge et al., 2019b).

Some researchers have hypothesized that the rise of social media use could be connected to the decline in mental health outcomes, especially for younger populations. Braghieri and colleagues (2022) performed a quasi-experimental study by analyzing mental health outcome data of college students in the mid-2000s and the "staggered" nature of the introduction of Facebook to colleges. The researchers found a significant decrease in mental health when Facebook gained popularity within the colleges (Braghieri et al., 2022).

Social Media and Loneliness

Humans have an innate need and desire to belong with others (Baumeister & Leary, 1995). There is extensive literature supporting the argument that the concept of 'belonging' is fundamental to physical and mental health (Baumeister & Leary, 1995; Twenge et al., 2019). This basic necessity has been linked to social media throughout the years of its growing existence and prevalence in society. Many have argued social media increases feelings of connectivity and belonging (Akram, 2018; O'Reilly, 2020; Pennington, 2020). However, there is increasing evidence shown through multiple research studies that social media is also linked with increased feelings of loneliness (Primack et al., 2017; Shensa et al., 2015; Twenge et al., 2019). While one may assume the concept of social media would bring people together, there has been various anecdotal accounts as well as empirical support indicating otherwise.

Shensa and colleagues (2015) studied emotional support and its protective role on mental health and physical health. Social network affiliation is a crucial aspect of perceived emotional support, which was researched in terms of social media in the present study (Shensa et al., 2015). The researchers recruited participants through a non-volunteer access panel called KnowledgePanel, which included a nationally representative sample of US adults aged 18 to 32 (Shensa et al., 2015). The participants estimated their total time per day spent on social media, reported their most visited websites/applications, and completed a short, four-item scale that assessed perceived emotional support (Shensa et al., 2015). Statistical analyses revealed that participants who were in the upper quartile of time spent per day on social media use reported significantly lower levels of perceived emotional support (Shensa et al., 2015). Also, as time per day spent on social media rose, perceived emotional support decreased (Shensa et al., 2015).

Interestingly, frequency of social media visits per week was not associated with lower emotional support, so time is the main variable that may have affected emotional support in this study (Shensa et al., 2015). This finding is important because it suggests time spent on social media is not the same as time spent with people in person and it is potentially harmful to mental health. The authors suggest that a possible reason for these results is explained by the "displacement hypothesis" because increasing time spent on social media simply decreases time for face-to-face relationships to be fostered (Shensa et al., 2015). The authors did not assess the differences between types of social media used (e.g. Instagram, Facebook, Twitter) or assess the differences over time through the utilization of a longitudinal study. However, this study is an important piece of evidence that shows perceived emotional support decreases when time spent on social media increases.

From a physical standpoint, social isolation can have several negative impacts such as obesity, increased cortisol patterns, disrupted sleep, and impaired immune function (Primack et al., 2017). From a psychological standpoint, social isolation can disrupt cognition and gene expression, which affects mental health (Primack et al., 2017). If one feels socially isolated in their physical environment, they may turn to social media to alleviate that feeling. Primack and colleagues (2017) tested this assumption by examining the role social media has on perceived social isolation among adults aged 19 to 32. They gathered data from the Growth from Knowledge platform using random sampling methods to examine the relationships between perceived social isolation, social media use, and covariates (Primack et al., 2017). After adjusting for multiple covariates (age, sex, race, relationship status, living situation, yearly household income, and education level), chi square tests revealed strong linear associations between increased social media use and increased social isolation (Primack et al., 2017). While these

associations were robust, it is important to note the directionality of the association cannot be inferred. The authors suggest it is possible that individuals who already feel socially isolated tend to use social media more often than individuals who do not feel socially isolated (Primack et al., 2017). However, it is also possible that using more social media leads to more social isolation. The authors suggest some conceivable mechanisms that may explain this such as the "displacement hypothesis" or the feeling of being excluded when viewing multiple images of people together (Primack et al., 2017). While the mechanisms behind these associations are unclear, it is evident that there is a link between perceived social isolation and increased social media use.

Twenge and colleagues (2019a) looked at generational differences in terms of loneliness and its links with increased social media use. The researchers utilized the Monitoring the Future (MtF) survey, which includes public data on a nationally representative sample of 8th, 10th, and 12th graders from 1976 until 2017 (Twenge et al., 2019a). The data revealed that 52% of 12th graders said they got together with friends almost every day in the late 1970's (Twenge et al., 2019a). However, 28% of 12th graders got together almost every day in 2017, showing a generational difference among social patterns throughout the years (Twenge et al., 2019a). Another interesting finding was that feelings of loneliness increased dramatically between 2010 and 2017 among 8th, 10th, and 12th graders, coincidentally at a time when social media was exploding in popularity (Twenge et al., 2019a). The researchers furthered their studies by examining any possible associations between in-person social interaction, social media use, and loneliness (Twenge et al., 2019a). Adolescents who spent low amounts of time with other people and high amounts of time on social media reported the highest level of loneliness (Twenge et al., 2019a). On the contrary, those who reported high in-person social interaction and high levels of

social media use experienced lower levels of loneliness (Twenge et al., 2019a). So, adolescents who spend a lot of time on social media and with friends tend to not be as lonely as those who spend a lot of time on social media and less time with friends. This study provides further evidence of loneliness being linked to social media, as well as an examination of generational differences among adolescents' social patterns. While longitudinal data that does not involve retrospective accounts would be best for this scenario, this study nevertheless provides substantial evidence of increasing loneliness among US adolescents.

Perceived emotional support, perceived social isolation, and overall loneliness are discussed as possible links to high social media use among adolescents and young adults. While this section provides empirical and statistical evidence of increased loneliness in connection with increased social media use, it is also important to provide anecdotal, qualitative evidence. Twenge (2017) wrote a book called *iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy – and Completely Unprepared for Adulthood.* This book provides substantial empirical data showing generational differences with a focus on Gen-Z, social psychology, and the technology they use on a daily basis. It also includes snippets of several interviews Twenge conducted on hundreds of adolescents in every corner of the US (Twenge, 2017). Kevin, an adolescent who was interviewed by Twenge states, "my generation lost interest in socializing in person – they don't have physical get-togethers, they just text together, and they can just stay at home" (Twenge, 2017, p. 69). In this case, Kevin is representative of others his age who spend less time socializing in person, which can lead to increased feelings of loneliness.

Social Media and Depression

Adolescence and the time period of young adulthood is filled with mixed emotions and the struggle to find one's path in life, often leading to mental health issues such as depression (McLaughlin & King, 2015). This is a major public health concern, and research should focus on causes and correlates of depression in young people (Kelly et al., 2018). There have already been several studies that show a possible link with social media and depression (Frison & Eggermont, 2017; Kelly et al., 2018; Sagioglou & Greitemeyer, 2014; Twenge, 2017; Twenge et al., 2019b), with some mixed results as well (Tandoc et al., 2014). The following section will discuss the qualitative and quantitative evidence showing a link between depression in young people and social media use, as well as evidence that denies the link between these two variables.

Sagioglou and Greitemeyer (2014) investigated Facebook use and its relation to emotional state in three studies that examined correlational and causal relationships between these constructs. The first study investigated the correlation between amount of time spent on Facebook and current mood immediately after using Facebook (Sagioglou & Greitemeyer, 2014). In total, 123 participants were recruited via a research assistant's Facebook account (Sagioglou & Greitemeyer, 2014). The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) was used to assess current emotional state. The researchers found a significant negative correlation (r = -.24; p = .007) between positive mood and time active on Facebook (Sagioglou & Greitemeyer, 2014). There was no significant correlations between number of friends and current mood, daily Facebook use and current mood, or daily internet use and current mood. These results suggest that when users spend more time on Facebook, their mood decreases significantly immediately after use (Sagioglou & Greitemeyer, 2014).

The second study was an experimental design aimed to determine direction of causality between time spent on Facebook and decreased mood (Sagioglou & Greitemeyer, 2014). A total of 263 participants were recruited from Amazon Mechanical Turk (MTurk), and they were randomly assigned to one of three internet use conditions during the experiment. The first condition involved actively using Facebook for 20 minutes, the second condition involved browsing the internet but not using any social networks, and the third condition was the baseline control condition that involved being immediately forwarded to the dependent measures (Sagioglou & Greitemeyer, 2014). The dependent measures included a three-item questionnaire intended to measure meaningfulness of the participants' last 20 minutes, as well as the PANAS. The researchers found that participants in the Facebook use condition reported their last 20 minutes to be less meaningful than the participants in the other two conditions ($p < .001$; Sagioglou & Greitemeyer, 2014). The researchers questioned why users continue to use Facebook if their mood dampens after use (Sagioglou & Greitemeyer, 2014). They discussed a phenomenon called affective forecasting error, that occurs when people have a biased anticipation of how something will make them feel, and the researchers believe this is occurring in this situation (Sagioglou & Greitemeyer, 2014).

The third study aimed to investigate affective forecasting error to determine how Facebook users expect to feel after using the platform (Sagioglou & Greitemeyer, 2014). In total, 101 Facebook users were recruited via MTurk to answer a short questionnaire that assessed how users thought they would feel after using the platform for 20 minutes. This was measured on a 10-point Likert scale from 1 *(worse than before)* to 10 *(better than before).* Using a one-sample *t*-test to compare means, the researchers found that people assume Facebook activity would make them feel better than before ($p = .005$; Sagioglou & Greitemeyer, 2014). Overall, this unique

study is essential to understanding the relationships between social media and subjective depressive mood because it involves experimental research with causal relationships (Sagioglou & Greitemeyer, 2014). These researchers were ahead of their time and paved the way for future research on this topic.

The next study demonstrating the possible harmful effects of social media on young people was performed by Frison and Eggermont (2017). This study is unique from most of the literature on this topic because it focuses on Instagram, types of Instagram users, and depression associated with Instagram use (Frison & Eggermont, 2017). The researchers used a longitudinal design by gathering data in March 2014 and October 2014 for each participant. The participants included 1,840 adolescents from 15 high schools, and they were given paper-and-pencil questionnaires to assess different types of Instagram use and depressive symptoms using The Center for Epidemiological Studies Depression Scale for Children (CES-DC; Frison & Eggermont, 2017; Radloff, 1977). Structural equation modeling showed that Instagram browsing in March (Time 1) was related to greater depressed mood in October (Time 2). Also, depressed mood at Time 1 was related to an increase in posting at Time 2 (Frison & Eggermont, 2017). Posting/liking was not associated with depressed mood (Frison & Eggermont, 2017). These findings suggest there are different kinds of users on Instagram: those who scroll and those who post. In turn, these users have different outcomes in terms of depressed mood. The researchers attempted to explain why passive users may feel worse due to social comparison and following large amounts of strangers (Frison & Eggermont, 2017). While this study is the first of its kind to examine these specific types of users, they only used single item measures to determine types of users. Further research should examine the associations between types of users and depressed mood.

Social media is used by the majority of the adolescent and young adult population in the US (Lenhart et al., 2015). Twenge (2017) discusses adolescent depression in recent years and examines whether it has declined. She pulled data from the Monitoring the Future survey that conducts research on 8th, 10th, and 12th graders every year and has been doing so for several decades (Twenge, 2017). This survey is essential for understanding the changes adolescents have gone through over the years because it is a nationally representative, anonymous survey that gives longitudinal data (Twenge, 2017). Data collected from this survey shows an uptick in adolescent depressed mood from 2011 to 2015 (Twenge, 2017). In particular, adolescents during this time believed they cannot do anything right, think that their lives are not useful, and do not enjoy life (Twenge, 2017). Twenge mentions a possible rationale for this stark increase in depressed mood could be social media due to its nature of posting only successes (Twenge, 2017). She explains that adolescents feel obligated to post only their successes and best quality pictures online, which hides their failures (Twenge, 2017). In turn, other adolescents may ignore the ambiguity of this situation and assume others' lives are better than their own. It is important to mention that this era is extremely unique because society has seen a boom in several kinds of technology, not just social media. So, there are other possible mechanisms that could explain why adolescents have been reporting an increase in depressed mood in recent years.

While several recent studies have shown an association between social media use and depression, there are some studies that examine mediators involved, such as envy. Tandoc et al. (2015) examined the relationship between Facebook use, depression, and envy by recruiting 736 college students to partake in a survey. The survey measured average hours per day using Facebook, Facebook envy via an original scale, and depression via the Center for Epidemiologic Studies Depression (CES-D) scale (Tandoc et al., 2015). The researchers found that there was

not a significant correlation between Facebook use and depression among college students; however, a two-way analysis of variance (ANOVA) found that heavy Facebook users experience more envy than light Facebook users (Tandoc et al., 2015). In order to examine Facebook envy as a mediator, the researchers performed a bootstrapping analysis (Tandoc et al., 2015). They found that Facebook surveillance (keeping up with what others post) predicts Facebook envy, which then predicts depression. Thus, envy is a significant mediator and Facebook use on its own does not directly lead to symptoms of depression (Tandoc et al., 2015). The researchers discuss social rank theory as a helpful framework to understand these phenomena, which involves competition between humans for social resources (Gilbert & Allan, 1998; Tandoc et al., 2015).

Overall, depression is a problem many young people endure, and recent years have seen an uptick in rates of depression among this group (Twenge, 2017). The existing research is conflicting on depression and social media use, but the overall consensus is that there has been a rise in depression among young people and research must determine possible underlying mechanisms. Social media is a possible risk factor, but it could also be a scapegoat for another factor that research is ignoring.

Social Media and Social Comparison

In general, humans present themselves in a certain way when interacting with others so that it gives off a specific impression (Jones & Pittman, 1982). Strategic self-presentation is an idea coined by Jones and Pittman that explains humans as ‘actors’ who modify their verbal and nonverbal behaviors to elicit certain feelings in others. Their classic article geared toward integrating a model self-presentation describes different types of ‘actors’ in society such as the ‘self-promoter,’ the ‘intimidator,’ the ‘ingratiator,’ and the ‘exemplifier’ (Jones & Pittman,

1982). This theory was developed more than 40 years ago and is crucial in understanding social media's role in the present society. On social media, people strategically present themselves in such a way that is favorable to others in order to present themselves as likeable, approachable, successful, intelligent, and entertaining (Chou & Edge, 2012). However, this idea of people behaving as 'actors' on social media may not be as apparent for everyone on the websites. In turn, it is possible that upward social comparison could be taking place, leading to detrimental effects on mental health (Chou & Edge, 2012). The following section discusses some available literature on social comparison on social media in young people.

Chou and Edge (2012) performed a cross-sectional study on the social media website, Facebook, and its implications for poor mental health. They surveyed 425 undergraduates at a state university between 2010 and 2011 (Chou & Edge, 2012). There were three Likert-scale questions that asked to what extent that a) many of my friends have a better life than me, b) many of my friends are happier than me, and c) life is fair (Chou & Edge, 2012). Then, they were asked how often they use Facebook, how many years they were on the social networking site, how many strangers they follow, and demographics (Chou & Edge, 2012). Multiple regression analyses of the three questions revealed people who spend more time on Facebook per week and people who follow more strangers thought that others had better lives than them (Chou & Edge, 2012). This finding is consistent with the argument that Facebook use modifies perceptions of others in general, with increased use and following strangers worsening mental health (Chou & Edge, 2012). One major limitation of the study, however, is the cross-sectional nature of the study as well as the convenience sample obtained. Also, the three-item questionnaire may not encapsulate all of the nuances of mental health. Nevertheless, this study still laid the foundation for future research on Facebook as well as Instagram in terms of social

comparison. Tandoc and colleagues (2015) studied Facebook use, envy, and depression as discussed in the previous section regarding depression. While increased Facebook use did not contribute to depression directly, envy played a large role in mediating this relationship (Tandoc et al., 2015). This means when envy was controlled for, depression did not occur when Facebook use rose (Tandoc et al., 2015). Social comparison and envy of others plays a mediating role in the relationship between poor mental health and social media use (Tandoc et al., 2015).

The results of the studies examining Facebook use and negative social comparison are similar to results examining Instagram use, which is an application mainly used for sharing pictures and short videos (Lup et al., 2015). Lup and colleagues (2015) performed a cross-sectional study on 117 US adults aged 18 to 29 that asked questions about their Instagram usage patterns and demographics. Statistical analyses revealed that while frequency of Instagram use was not directly associated with negative social comparison, the amount of strangers followed was a mediator in the relationship (Lup et al., 2015). Thus, the more strangers one follows, the more likely that high Instagram use will lead to negative social comparison, which is consistent with Chou and Edge's findings regarding Facebook use (Chou & Edge, 2012; Lup et al., 2015). An important strength of Lup and colleagues' study is that it was the first study to examine Instagram use and well-being (Lup et al., 2015). This preliminary study will pave the way for future research on this topic. The main implication of this study is that people who use social networking sites and are only friends with/follow people in their social circle are generally at no risk of negative social comparison (Lup et al., 2015). However, people who follow large amounts of strangers should be aware of the potential negative consequences (Lup et al., 2015).

Another similar study focused on Instagram usage patterns, loneliness, and social comparison orientation (Yang, 2016). Social comparison orientation was identified as a

moderating variable to loneliness, and their results showed that the potential benefit of Instagram interaction was suppressed among users who scored high in social comparison (Yang, 2016). These findings provide further evidence that social comparison is an important factor regarding social media use.

Overall, social comparison is an evident factor of the potential negative side-effects of high social media use across Facebook and Instagram. While the studies mentioned have their various limitations, they all provide empirical evidence that will lay the foundation for future research on this topic. Other platforms should be researched as well, such as Twitter, TikTok, and other future platforms that will undoubtedly become popular as adolescents search for the newest applications on which to spend their time.

Gender Differences

Several research studies have sought to determine patterns and differences between genders regarding social media usage and well-being (Barthorpe et al., 2020; Booker et al., 2018; Kelly et al., 2018). Booker and colleagues (2018) performed a longitudinal study on the youth panel of *Understanding Society: the UK Household Panel Study* over five years on adolescents aged 10 to 15. Their aim was to determine any associations between social media usage and well-being trajectories as adolescents age (Booker et al., 2018). They utilized a stratified, clustered sampling scheme to choose participants who completed a questionnaire about their social media habits (Booker et al., 2018). The researchers also assessed the adolescents' happiness in six domains of life as well as their negative affect using the Strengths and Difficulties Questionnaire (SDQ; Booker et al., 2018). Their results found that as adolescents age, their social media usage rises and their happiness decreases for both males and females (Booker et al., 2018). However, older females in this sample experienced worse well-being when

they had high social media use at age 10 (Booker et al., 2018). This suggests that there is a possibility that social media usage could contribute to the overall well-being of females, particularly in negative way. One could argue there may be other variables that may contribute to worsening well-being, though this study is significant because it presents a pattern over time in which females tend to feel worse at age 14 or 15 if their social media levels are high at age 10.

Another study performed by Kelly and colleagues (2018) adds to the argument that females who use social media more often may experience higher levels of depressive symptoms than males. The researchers recruited participants from the Millennium Cohort Study (MCS), which is a nationally representative cohort study of children born in the early 2000's (Kelly et al., 2018; UCL Social Research Institute, 2007). A total of 10,904 participants with a mean age of 14.3 completed the Mood and Feelings Questionnaire – short version (SMFQ), as well as questions about social media use, online harassment, sleep, body image, and self-image (Angold & Costello, 1987; Kelly et al., 2018). Multivariable linear regression models were used to explore possible pathways that may link high social media use to poor mental health such as online harassment, sleep, self-esteem, and body image (Kelly et al., 2018). Higher social media use was positively correlated with these pathways, which in turn was positively correlated with higher depressive symptoms. Females exhibited higher social media use as well as more depressive symptoms (Kelly et al., 2018). These findings suggest the possible links between variables such as gender, high social media use, and depression. One could argue, however, that it is possible depression comes first, and then females seek out social media, which leads to higher usage. Further research should examine these relationships to determine the direction of association.

The previous studies mentioned regarding gender differences include self-reported measures of social media habits and rely greatly on retrospective accounts of social media use. These studies could possibly incorporate recall bias due to the recall of past social media habits. Therefore, Barthorpe and colleagues (2020) sought to limit the possibility of recall bias by performing a study with time-use diaries. The researchers executed a cross-sectional study on 4,642 adolescents aged 13 to 15 that compared real-time diaries of social media use with mental health outcomes (Barthorpe et al., 2020). These measures included reports of self-harm in the past year and two scales to measure depressive symptoms and self-esteem (Barthorpe et al., 2020). Barthorpe and colleagues (2020) found that as time spent on social media rises, there is an increased risk of self-harm, depression, and low self-esteem in females. They adjusted the findings for covariates such as previous mental health problems, and the results persisted that females tend to do worse than males as their social media use increases (Barthorpe et al., 2020). This novel study using real-time accounts provides further evidence suggesting females use social media more often, and as their screen time increases, their mental health decreases.

Previous research on social media use and well-being has limitations, such as the utilization of cross-sectional data along with retrospective accounts of social media use in some cases. However, the literature tends to lean toward the argument that there is a difference between genders in terms of social media use and mental health. While evidence has shown these differences, there still needs to be further longitudinal evidence including sound measures of social media use such as time-use diaries.

Body Image

Body image is a multifaceted concept that involves “one’s perception, thoughts, and emotions” about one’s body as well as social constructs that depend on culture (Jiotsa et al.,

2021). Traditional forms of media such as magazines, billboards, and television shows/television commercials have portrayed ideal body-types over the years; now, social media is a leading form of media that depicts ideal body-types (Jiotsa et al., 2021). Jiotsa and colleagues (2021) performed an observational study on 1331 adolescents and young adults, with 1138 subjects from the general population and 93 diagnosed with eating disorders (recruited via healthcare workers). The participants answered questions regarding demographics, body mass index (BMI), frequency of social media use, frequency of posting selfies, and frequency of comparing one's physical appearance to others on social media (Jiotsa et al., 2021). Additionally, participants completed two subscales of the Eating Disorders Inventory-2 (EDI-2), which assessed drive for thinness and body dissatisfaction, as well as the Sick-Control-One-Stone-Fat-Food (SCOFF) questionnaire to assess for disordered eating (Garner, 1991; Jiotsa et al., 2021; Morgan et al., 2000). The researchers placed the participants in two groups based on results of the SCOFF questionnaire: SCOFF+ (high risk for eating disorder) and SCOFF- (low risk for eating disorder). The groups were compared using *t*-tests and Chi-squared tests (Jiotsa et al., 2021). The SCOFF+ group had significantly higher social media use and they spent more time comparing themselves to others' appearances on social media (Jiotsa et al., 2021). Two linear regressions were performed to examine the association between frequency of comparing oneself to others' appearances online and the results of the EDI-2 subscales (Jiotsa et al., 2021). The researchers found that as comparing oneself on social media platforms increases, there is also an increase in body dissatisfaction and drive for thinness (Jiotsa et al., 2021). The researchers explained that the directionality of the association cannot be inferred due to the nature of the study (Jiotsa et al., 2021).

De Vries and colleagues (2016) focused on adolescents' body image and social media use, with a focus on boys and girls equally. Participants were recruited from children of the members of an online access panel in the Netherlands (de Vries et al., 2016). Frequency of social media use, peer appearance-related feedback, body dissatisfaction, BMI, age, pubertal status, ethnicity, and socioeconomic status were assessed at two different times about one year apart (de Vries et al., 2016). Structural equation modeling was used to test if adolescents' body dissatisfaction increases as time spent on social media increases. The researchers found support for this hypothesis. This longitudinal study also addressed directionality because more social media use lead to more body dissatisfaction 18 months later; however, body dissatisfaction did not predict higher social media use (de Vries et al., 2016). Additionally, adolescent boys were affected in the same manner and to the same extent as girls, which shows that both adolescent girls and boys may be affected equally by social media pressures (de Vries et al., 2016).

Benefits of Social Media Use

While most of the scientific literature on social media and well-being has focused on pathology, there are some opposing views that social media is a positive addition to young peoples' lives (Schønning et al., 2020). Both of the articles in the following section are qualitative studies that address social media in a positive way (O'Reilly, 2020; Pennington, 2020). They both address the possible positive and negative impacts of social media through directly discussing the matter through interviews with young people (O'Reilly, 2020; Pennington, 2020).

O'Reilly (2020) conducted interviews on adolescents aged 11 to 18 as well as mental health practitioners to understand their views on the good, bad, and ugly sides of social media. O'Reilly (2020) recruited a sample of 54 non-clinical adolescents to form six focus groups, as

well as two focus groups comprised of eight mental health practitioners. There was a schedule of questions that centered on conceptualizations of mental health, attitudes and experiences with social media, and the potential to use social media to promote mental health awareness (O'Reilly, 2020). Thematic analyses were conducted through coding processes and it was found that the relationship between social media and mental health is complicated and multidimensional (O'Reilly, 2020). The good side effects of social media were found to be the ability to maintain friendships across distances, a reduction of isolation, and the ability to relieve stress (O'Reilly, 2020). The adolescents in this study stated their external stressors included deadlines, schoolwork, exam pressure, friendship maintenance, and parental interference (O'Reilly, 2020). Social media was used to distract from these daily pressures, thus protecting mental health in terms of stress and anxiety (O'Reilly, 2020). While this study analyzed the negative impact of social media, it was also found that there were sizeable positive effects of social media on mental health.

Pennington (2020) further provides qualitative evidence of the complexities of social media through interviews on individuals who quit using social media. In-depth interviews took place with 20 college students aged 18 to 35 who discussed the social media platforms they used prior to quitting, their frequency of use before quitting, and the perceived benefits and drawbacks to quitting social media (Pennington, 2020). Thematic analysis was conducted and while there were several benefits to quitting social media, there were about an equal number of drawbacks (Pennington, 2020). Almost every participant admitted feelings of lack of communication, as well as the stress of being digitally disconnected from the rest of the world (Pennington, 2020). The fear of missing out (FOMO) was suggested by the interviewees several times and the phrases "out of the loop" and not being "in the know" were stated (Pennington, 2020, p. 6).

Another aspect of social media use is professional networking for future careers. Several of the participants also mentioned fears of being judged or overlooked by potential employers for not having active profiles on social media sites (Pennington, 2020). In this study, there were several benefits to quitting, as well as drawbacks, showing the complex and ambiguous nature of well-being and social media.

Kalpidou et al. (2011) recruited 70 undergraduates that consisted of two groups: first years and upperclassmen (juniors and seniors). The researchers gave various measures to the participants, including the Rosenberg Self-Esteem Scale, Student Adaptation to College Questionnaire (SACQ), and the Facebook Intensity Scale (FIS; Kalpidou et al., 2011). The researchers found a negative correlation between time spent on Facebook and self-esteem across both groups, though they found that having several Facebook friends positively correlated with social adjustment and feelings of connection with the academic institution (Kalpidou et al., 2011). Additionally, the researchers found that the upperclassmen that had more Facebook friends were more socially adjusted and felt a stronger connection to their academic institution, which shows that upperclassmen were better able to effectively use Facebook to communicate with peers (Kalpidou et al., 2011).

Overall, a lot of the previous literature on the topic of social media has been biased towards the idea that social media is a possible causal factor of ill mental health (Schønning et al., 2020). The recent literature provided is a subsection of developing literature that deals with social media as an unknown variable, so that the researchers can pinpoint in which conditions social media leads to poor mental health. While this evidence shows the complexities of the positive and negative side-effects of social media, there needs to be more qualitative and quantitative research on this topic.

Limitations of Previous Literature

While social media has been skyrocketing in popularity in recent years, the research on this topic in regard to well-being and mental health has also increased substantially (Schønning et al., 2020). While previous research has been extensive, there are some issues causing debate and polarization in the scientific community about whether social media is harmful or not to young people (Schønning et al., 2020). There are several gaps in the literature and possible concerns with previous research (Schønning et al., 2020). Schønning et al. (2020) reviewed relevant literature and included 79 studies that examined qualities such as study design, subject matter, and bibliographic information.

Results showed that 94% of the included studies were quantitative in nature, 57% used a cross-sectional design, and the most common study setting were schools (Schønning et al., 2020). Since the overwhelming majority of these studies are quantitative, there needs to more qualitative focus on research due the vast opportunities qualitative data can provide. The main focus of included studies was social media and some aspect of pathology, with depression being the most studied aspect at 29% (Schønning et al., 2020). Also, 77% of the studies had social media use as the independent variable (Schønning et al., 2020). This falls in line with the research conducted in this literature review because most of the studies here focus on social media as the instigator or causal factor resulting in poor mental health. The assumption that social media is harmful may cause bias in the literature, which may lead to faulty theories.

Only about half of the studies focused on specific networking sites, and Facebook was the most studied networking site at 39% (Schønning et al., 2020). While Facebook is a dominant social media site among young people, there are other social networking sites that have gained popularity such as Instagram, Twitter, and Tiktok (Schønning et al., 2020). In terms of Tiktok,

there are over 1 billion monthly users, as compared to 2.9 billion monthly Facebook users and 1.4 billion monthly Instagram users (Doyle, 2023). There has been limited research conducted on Tiktok, and this application often portrays videos focusing on mental health (Comp et al., 2021). It is possible that people's views of mental health could be affected based on the increasing popularity of mental health-related videos on Tiktok.

Background Information on Tiktok

Tiktok is a social media platform that involves watching and posting short, looping videos that have can have a variety of themes, including singing, dancing, animals, stories, opinions, and several others (Anderson, 2020). There is a "creative chaos" to this application, in which users scroll up to watch the next video, and they are usually unaware of what the next video will show them (Anderson, 2020). The first video-sharing platform that was similar to Tiktok was called Vine, which was created in 2012 and shut down in 2017 (Anderson, 2020). Musical.ly was another popular video-sharing application that focused more on lip-synching and music-related content. A Chinese company called ByteDance launched Tiktok in 2017, and the company merged Musical.ly with Tiktok in 2018 (Anderson, 2020).

There are several other social media platforms that have gained popularity in recent years, such as Facebook, Instagram, and Snapchat. Tiktok differs from these platforms because it focuses more on the content the user is putting out, rather than the popularity or achievements of the user (Anderson, 2020). Other social media platforms, such as Facebook and Instagram, are modeled based on following others and amount of followers of the individual (Anderson, 2020). However, Tiktok is modeled based on an algorithm; therefore, a user with no followers can easily gain popularity if their content is attractive to viewers (Anderson, 2020). Tiktok is

uniquely designed to hold the attention of the user for as long as possible due to its powerful algorithm that adapts as the user continues to use the platform (Anderson, 2020).

The Present Study

This correlational study examined amount of Tiktok use and mental health outcomes among participants from Amazon Mechanical Turk (MTurk). The available literature mainly focuses on either social media use in general or Facebook; thus, this study helped provide mental health outcome information for a specific social media platform that has been rising in popularity over the last few years. It was expected that an increased amount of Tiktok use would result in an increased depression score, and increased anxiety score, and an increased loneliness score. It was expected that an increased amount of Tiktok use would result in lower self-esteem. These expectations of overall poorer mental health with increased social media use coincide with the results of previous research studies (Braghieri et al., 2022; Frison & Eggermont, 2017; Kelly et al., 2018; Primack et al., 2017; Sagioglou & Greitemeyer, 2014; Shensa et al., 2015; Twenge et al., 2019). Twenge, 2017). The four hypotheses for this study were:

1. As Tiktok use increases, there would be an increase in depression scores.
2. As Tiktok use increases, there would be an increase in loneliness scores.
3. As Tiktok use increases, there would be an increase in anxiety scores.
4. As Tiktok use increases, there would be a decrease in self-esteem scores.

Methods

Participants

Volunteer participants were recruited via Amazon Mechanical Turk (MTurk) to complete an online survey in exchange for small monetary benefit. A power analysis that analyzed 163 effect sizes from 10 studies found an average effect-size *r* of .169. With a small effect size and a minimum of 272 participants, there is a power of 80. This means that if a true effect were to be found in 100 replication studies, with 80% power, we would expect that only 80 of those studies would detect those effects due to random error. There were a total of 314 participants, though 29 participants' data were discarded due to incomplete or missing data. A total of 285 participants were included in data analysis. There were a total of 121 female participants, 2 non-binary/third gender participants, and 162 male participants. More detailed information on participant demographics can be found in Table 1.

Table 1.

Demographics

Age Groups	18-24	1 (0.3%)
	25-34	81 (28.4%)
	35-44	129 (45.3%)
	45-54	48 (16.8%)
	55-64	23 (8.1%)
	65-74	3 (1.1%)
Gender	Male	162 (56.8%)
	Female	121 (42.5%)
	Non-binary/Third Gender	2 (0.7%)
Ethnicity	Caucasian/White	153 (53.7%)
	African American/Black	21 (7.4%)
	Asian	93 (32.6%)
	Other	10 (3.5%)
	American Indian or Alaska Native	8 (2.8%)
Sexual Orientation	Heterosexual	236 (82.8%)
	Bisexual	39 (13.7%)
	Homosexual	8 (2.8%)
	Other	2 (0.7%)

Table 1 Cont.

Social Media Use Environment	Mostly When Alone	203 (71.2%)
	Mostly When Around Others	16 (5.6%)
	About Equally	62 (21.8%)
	Denied Social Media Use	4 (1.4%)

Design

The independent variable of this correlational study was daily average amount of Tiktok use over the previous week. This was determined via the results of a self-report measure, in which participants followed directions to find their daily average in their phone settings (see Appendix A). The dependent variables were the results of various self-report mental health assessments. The assessments include the Rosenberg Self-Esteem Scale, two of the Patient Reported Outcome Measurement Information System (PROMIS) Emotional Distress Scales included in the *Diagnostic and Statistical Manual for Mental Disorders* – Fifth Edition, and the University of California, Los Angeles (UCLA) Three-item Loneliness Scale. Simple linear regressions were used to estimate the strength of the relationship between amount of Tiktok use and results of various mental health questionnaires.

Rosenberg Self-Esteem Scale

Participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This scale, created by Morris Rosenberg, consists of 10 items that are intended to measure overall self-worth. The items consist of positively worded statements (e.g., “on the whole, I am satisfied with myself”) and negatively worded statements (e.g., “at times I think I am no good at all”) that alternate within the scale (Rosenberg, 1965). The items are answered on a four-point Likert scale that range from “strongly agree” to “strongly disagree”. The coefficient of reproducibility is .92, which indicates a high level of internal consistency (Rosenberg, 1979). The test-retest reliability over a two-week period reveals high stability, with coefficients of .85 and .88 (Rosenberg, 1979). This scale demonstrates concurrent, construct, and predictive validity, as it correlates strongly

with other self-esteem measures such as the Coopersmith Self-Esteem Inventory; in addition, it correlates with measures of depression and anxiety in terms of predictive validity (Rosenberg, 1979; See Appendix B).

PROMIS Emotional Distress Scales

Participants completed two of the Patient Reported Outcome Measurement Information System (PROMIS) Emotional Distress Scales (Depression and Anxiety), which are included in the *Diagnostic and Statistical Manual of Mental Disorders* – Fifth Edition (DSM-5) as Level 2 assessments (American Psychological Association [APA], 2013). The PROMIS emotional distress item banks were developed and calibrated by Pilkonis and colleagues (2011), and these measures are intended to be utilized in research and in treatment settings to track progress. The depression scale consists of eight items (e.g. "In the past seven days, I felt worthless") that are answered on a five-point Likert scale that ranges from "never" to "always" (APA, 2013; See Appendix C). The anxiety scale consists of seven items (e.g. "In the past seven days, I felt fearful") that are answered on the same five-point Likert scale (APA, 2013; See Appendix D). Pilkonis et al. (2011) used various methods to build the reliability and validity of these measures, such as qualitative item review, assessment of dimensionality (using exploratory factor analysis and confirmatory factor analysis), and item response theory analysis. Content validity was established through comprehensive literature reviews, feedback from patients, and expert consensus (Pilkonis et al., 2011). Convergent validity was assessed through the correlations of the scales with similar scales, such as the Center for Epidemiological Studies Depression Scale (CES-D) and the PROMIS Emotional Distress Scale for depression (r = .83). Divergent validity was assessed through the correlations of the PROMIS scales with differing scales, such as the

general distress scale from the Mood and Anxiety Symptom Questionnaire and the PROMIS Emotional Distress Scale for anxiety (r = .72).

UCLA Three-Item Loneliness Scale

Participants completed the shortened version of the revised UCLA Loneliness Scale, which originally consisted of 20 items that were designed to measure one's inner experience of loneliness, as well as social isolation (Russell et al., 1980). Hughes et al. (2004) created the shortened version, which consisted of three items in order to conduct shorter telephone interviews. The three items that were chosen for this shortened scale are: (1) "First, how often do you feel that you lack companionship," (2) "How often do you feel left out," and, (3) "How often do you feel isolated from others" (Hughes et al., 2004). Participants rated each item on a three-point Likert scale (1 *hardly ever*, 2 *some of the time*, and 3 *often*) (Hughes et al., 2004). The original 20-item scale was assessed for reliability and validity by Russell (1996); he found high levels of internal consistency (coefficient alpha was between .89 and .94), and he found that test-retest reliability was high (r = .73). Significant correlations with various other loneliness measures indicated a high level of convergent validity (Russell, 1996). Once the administrator of the shortened three-item scale sums the item scores, there will be a score between three and nine, with lower scores representing lower levels of overall loneliness and higher scores representing higher levels of overall loneliness (Hughes et al., 2004; See Appendix E for scale).

Tiktok Use Assessment

Participants completed a self-report questionnaire to assess average daily amount of Tiktok use over the previous week that the participant completed the study (see Appendix A).

Procedure

Participants accessed the study via Amazon Mechanical Turk (MTurk), and they received small monetary benefit ($0.40) for completion of the study. Participants completed the study in one sitting, and they were required to digitally sign an informed consent document prior to completion. All MTurk users are required to be at least 18 years old, so none of the participants were under 18 years of age. Participants completed a questionnaire regarding demographic information (i.e. age, gender, ethnicity, sexual orientation, social media use environment, and average daily time spent on Tiktok). Following the demographic questionnaire, participants completed mental health assessments (Rosenberg Self-Esteem Scale, PROMIS Emotional Distress Scales – Depression and Anxiety, and the UCLA Three-Item Loneliness Scale). Results from MTurk showed that participants took around 11 minutes to complete the study.

Results

Preliminary Analyses

This study involved four psychological measures, as well as demographic information and average amount of daily Tiktok use over the previous week. Each participant received a sum score for each of the four mental health assessments, as well as a score for average daily Tiktok use in minutes. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) provided a score between 10 and 40 that measured level of self-esteem. The participants' mean score on this scale was 20.40, with a standard deviation of 5.91. With a theoretical mean of 25, this score is lower than expected and lower on average than Schmitt and Allik's (2005) study that showed most nations in their study had an average score above 25 points. The mean amount of Tiktok use for all participants was 67.79 minutes per day, with a standard deviation of 123.04. For participants who placed a value higher than "0" for Tiktok use, their mean usage was 76.18 minutes, with a standard deviation of 121.97.

The Patient Reported Outcome Measurement Information System (PROMIS) Emotional Distress Scale – Depression Short Form (American Psychological Association [APA], 2013) provided a score between 8 and 40, with higher numbers indicating higher severity of depression. The participants' mean score on this scale was 15.89, with a standard deviation of 8.09. The mean T-score for this sample was 53.40, with a standard deviation of 1.80; a T-score of 50 denotes the average scores across the sample studied by Pilkonis et al. (2011), which was made up of U.S. citizens. A T-score of less than 55 indicates "none to slight" levels of depression, so this sample is generally representative of the average (Pilkonis et al., 2011). The PROMIS Emotional Distress Scale – Anxiety Short Form (APA, 2013) provided a score between 8 and 40, with high numbers indicating higher severity of anxiety. The participants' mean score on the

anxiety scale was 15.40, with a standard deviation of 6.80. The mean T-score for this sample was 53.80, with a standard deviation of 2.20, which indicates the average score showed “none to slight” levels of anxiety. This shows that the sample is generally representative of the average scores found by Pilkonis et al. (2011).

The ULCA Three-Item Loneliness Scale provided a score between 3 and 9, with higher scores indicating higher levels of loneliness (Hughes et al., 2004). The mean score for this study was 5.04, with a standard deviation of 1.87. Trucharte et al. (2023) studied a large sample of Spanish-speaking participants, and the mean score for 35 - 44 year-olds was 4.49 with a standard deviation of 1.64, which is similar to the results of this study. Table 2 contains the descriptive statistics and Cronbach’s Alphas for the total scores of the Rosenberg Self-Esteem Scale, the two PROMIS Emotional Distress Scales, and the UCLA Three-Item Loneliness Scale.

Table 2.

Descriptive Statistics

	Valid N	Minimum	Maximum	Mean	Standard Deviation	Cronbach's Alpha
RSE	285	0	30	20.40	5.91	0.89
PED-D	285	8	40	15.89	8.09	0.97
PED-A	285	7	35	15.40	6.80	0.95
UCLA	285	3	9	5.04	1.87	0.86

Note: In the table above, RSE is the Rosenberg Self-Esteem Scale, PED-D is the PROMIS Emotional Distress Scale – Depression, PED-A is the PROMIS Emotional Distress Scale – Anxiety, and UCLA is the UCLA Three-Item Loneliness Scale.

Hypothesis Testing

Each of these hypotheses were tested using separate simple linear regressions that compared average daily Tiktok use over the past week with various results of mental health questionnaires that assessed depression, loneliness, anxiety, and self-esteem. Regression analysis was appropriate for this study because it is a simple way to determine if the predictor variable (amount of Tiktok use) does a good job at predicting the outcomes of the dependent variable (mental health assessments). Researchers use linear regression to estimate the strength of the predictor variable, or the level in which the predictor variable is able to predict the dependent variable. The goal for this study was to uncover whether or not there is a relationship between

increased Tiktok use and mental health outcomes, and whether or not Tiktok use can predict the outcomes of mental health assessments.

As shown in Table 3, a correlation was performed on each of the dependent variables with Tiktok use at the independent variable. This was performed initially to see if there was a relationship between the independent and dependent variables. After examining correlations, there were no significant results found, as most of the correlations were very low. Regression analysis was performed to further examine the variables. The relationship between Tiktok use and mental health outcomes were not significant.

Table 3.

Linear Regression and Correlations

	B	**Std. Error**	**R^2**	**F**	**p**	***r***
RSE	0.002	5.92	0.0004	0.13	.36	.02
PED-D	-0.0005	8.09	0.0005	0.94	.17	-.06
PED-A	0.0008	6.81	0.0008	0.02	.44	.01
UCLA	-0.0008	1.8	0.001	0.30	.29	-.03

Note: In the table above, RSE is the Rosenberg Self-Esteem Scale, PED-D is the PROMIS Emotional Distress Scale – Depression, PED-A is the PROMIS Emotional Distress Scale – Anxiety, UCLA is the UCLA Three-Item Loneliness Scale, and *r* indicates the correlation of each scale with daily Tiktok use.

Post-Hoc Testing

Further exploratory analyses were conducted in order to examine the differences between active Tiktok users and non-users. The operational definition for active Tiktok users was any participant that did not enter “0” for amount of Tiktok use. Participants who entered “0” for Tiktok use were placed in the non-user category. Simple linear regression analyses were conducted after eliminating all users that entered “0” for amount of Tiktok use over the previous week. No significant results were found, which shows that Tiktok use did not predict mental health outcomes for active users in this study. See Table 4.

Additionally, independent samples t-tests were conducted to determine the differences between Tiktok users and non-users. The t-tests were conducted on all four dependent variables. No significant results were found, which shows that there was not a significant difference between active Tiktok users and non-users in terms of mental health outcomes. See Table 5.

Table 4.

Linear Regression and Correlations for Active Tiktok Users

	B	**Std. Error**	**R^2**	**F**	**p**	***r***
RSE	-0.0002	5.71	0.0002	0.003	.48	.005
PED-D	-0.0002	6.88	0.0001	0.001	.49	-.003
PED-A	0.005	5.89	0.009	0.84	.18	.01
ULCA	0.0006	1.98	0.001	0.13	.36	.04

Note: In the table above, RSE is the Rosenberg Self-Esteem Scale, PED-D is the PROMIS Emotional Distress Scale – Depression, PED-A is the PROMIS Emotional Distress Scale – Anxiety, UCLA is the UCLA Three-Item Loneliness Scale, and *r* indicates the correlation of each scale with daily Tiktok use.

Table 5.

Independent Samples T-tests for Tiktok Users versus Non-Users

	Active Users		Non-Users		*t*(283)	*p*
	M	SD	M	SD		
RSE	20.79	5.68	20.34	6.03	0.54	.59
PED-D	14.46	6.85	16.52	8.58	0.04	.97
PED-A	14.68	5.88	15.67	7.21	0.00	.99
UCLA	4.72	1.97	5.17	1.8	0.06	.95

Note: In the table above, RSE is the Rosenberg Self-Esteem Scale, PED-D is the PROMIS Emotional Distress Scale – Depression, PED-A is the PROMIS Emotional Distress Scale – Anxiety, UCLA is the UCLA Three-Item Loneliness Scale, and *p* indicates the *p*-value.

Discussion

The goal of this research study was to examine the relationship between average daily Tiktok use over the previous week and various mental health outcomes (Rosenberg Self-Esteem Scale, PROMIS Emotional Distress Scales – Depression and Anxiety, and UCLA Three-Item Loneliness Scale). Additionally, the study aimed to see if increased Tiktok use was associated with poorer mental health outcomes. Several studies have been performed to study this phenomenon, though no studies to date have looked specifically at Tiktok use and its relationship with mental health outcomes. It was hypothesized that increased Tiktok use would be associated with an increase in symptoms of depression, anxiety, and overall loneliness, as well as a decrease in self-esteem. The findings of this research study showed no significant correlations between Tiktok use and mental health outcomes. Linear regression analysis showed no significant evidence that Tiktok use could predict mental health outcomes (See Table 4). Post-hoc exploratory analyses were conducted to determine the differences between active Tiktok users and non-users; no significant results were found. This shows there was not a significant difference in mental health outcomes between active Tiktok users and non-users.

This study was inspired by the drastic increase in social media use in the last two decades, and the lack of consensus about whether or not social media is harmful to mental health (We Are Social, 2021). Twenge et al. (2019b) examined longitudinal data of mental health outcomes across several generations (e.g., Gen-Z, Millennials, and Boomers), and they found that mental health has been getting worse over time, with younger people having the most drastic changes over time. Several studies have examined and found significant correlations between social media use and loneliness (Primack et al., 2017; Shensa et al., 2015; Twenge et al., 2019). Additionally, several studies have found links between social media and depression (Frison &

Eggermont, 2017; Kelly et al., 2018; Sagioglou & Greitemeyer, 2014; Twenge, 2017). Strategic self-presentation and social comparison have also been studied with social media use; Chou and Edge (2012) found that participants who spent more time on Facebook and followed more strangers thought that others had better lives than their own, which inspired the addition of the Rosenberg Self-Esteem Scale for this study. While several studies have found a significant link between increased social media use and worsening mental health, there are also studies that conflict with evidence that social media could be connected with worse mental health outcomes. Kalpidou et al. (2011) found mixed results, and Pennington (2020) and O'Reilly (2020) found both positive effects and negative effects of social media use. Kalpidou et al. (2011) found a negative correlation between time spent on Facebook and self-esteem, though they also found that having several Facebook friends was positively correlated with feelings of connection and positive social adjustment.

Overall, the majority of previous research on social media and mental health has shown that increased social media use leads to poorer mental health outcomes. The findings of this study do not support previous research, which implies that increased Tiktok use may not lead to worse mental health outcomes. Previous research has focused on other platforms, such as Facebook and Instagram; therefore, it is possible that Tiktok differs from other social media platforms in terms of effects on mental health. Tiktok offers a wide variety of content, and Tiktok users tend to promote awareness about mental health, and they discuss their experiences with mental health (McCashin & Murphy, 2023). This can have a positive impact on mental health as it brings more awareness to the issue and normalizes mental illness.

Implications

While there were no significant findings of this research study, social media and mental health is still an area that should be further studied due to the rise of both social media use and mental illness. In particular, future research should focus on young people and how early social media use can affect outcomes in adulthood. One could imagine that a 60-year-old on Facebook and a 12-year-old on Facebook would have vastly different experiences; the 12-year-old may be easily manipulated by advertisements and people who are strategically presenting themselves in a favorable light. Social media allows individuals to present themselves however they see fit, and children's brains may not be developed fully enough to understand this idea.

Additionally, future research could determine causality by conducting experiments with regard to social media use. For example, an experiment that prohibited the use of social media for one month may show a significant change in mental health outcomes. Overall, the experience of social media varies vastly between users, and mental health is a subjective construct that is difficult to measure. A good rule of thumb would be to limit social media use if one thinks it is impacting their mental health, and to proactively monitor children's use of social media.

Limitations

The main limitation in this study involved the way in which participants completed the study; there were no researchers watching the participants to ensure they looked up their average daily usage of Tiktok use, so it is possible that some participants lied about their Tiktok use or simply entered the value "0" instead of taking the time to find the correct data. Of the 285 participants included in this study, 187 participants placed a "0" value in the box for average daily amount of Tiktok use, with 98 participants placing a value higher than "0." Future studies should examine amount of Tiktok use and mental health outcomes for Tiktok users, or people who *at least* have the application downloaded on their phone. Future studies should also

incorporate ways to ensure participants accurately depict their Tiktok use, such as administering the tests in person or having participants screenshot their phone settings. On the other hand, internal consistency was good across the mental health outcome measures, which shows the participants in this study were consistent with their answers to mental health outcomes.

The style of sampling for this study was a convenience sample, and the only parameter on the study was that the participant needed to be at least 18 years of age. This opened up the study on a global scale on MTurk (43 countries), though there was no demographic question about the location of the participant. It would have been helpful to know in which country the participant was located. It is possible that several participants were located in countries where Tiktok is banned due to cybersecurity reasons, or Tiktok could be simply not very popular in certain countries and cultures. Additionally, a convenience sample is not representative of any population as a whole; therefore, one cannot make inferences or generalizations about a population when convenience sampling is used. Instead, random sampling can be used to help make generalizations to a population.

Conclusion

The significant rise in social media use in recent years has left several researchers questioning whether or not it is detrimental to mental health, especially with the increase in mental health issues among youth in the last few decades. The previous literature on this topic is mixed, and there do not appear to be clear answers at this point of whether or not social media is detrimental to mental health. It is possible that this question is too broad, and that each individual has a different experience of social media. It would be beneficial for consumers of social media to continuously pay attention to how their social media use affect them, and make changes when necessary.

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APPENDIX A

Demographics:

1. What is your gender?
    a. Female
    b. Male
    c. Third gender/Non-binary
2. What is your ethnicity?
    a. Caucasian/white
    b. African-American/Black
    c. American Indian or Alaska Native
    d. Asian
    e. Native Hawaiian/Pacific Islander
    f. Other
3. What is your age?
    a. 18-24
    b. 25-34
    c. 35-44
    d. 45-54
    e. 55-64
    f. 65-74
    g. 75-84
    h. 85 and above
4. What is your sexual orientation?
    a. Heterosexual/Straight
    b. Homosexual/Gay or Lesbian
    c. Bisexual
    d. Other
5. What environment do you usually use social media?
    a. Mostly when I am alone
    b. Mostly when I am around others
    c. Equally when I am alone and around others
    d. I don't use social media
6. What is your daily average Tiktok use over the previous week? Follow instructions below. _____

IPHONE:

1. Go to Settings
2. Tap Screen Time
3. Tap "See All Activity"
4. Make sure the tab at the top is on "Week" not "Day"

5. Swipe the bar graph to the right to show last week
6. Tap on “Tiktok” app. You may have to scroll down to find the app
7. Beneath the bar graph is “Daily Average” with a number of hours and minutes. Record this number

ANDROID:

1. Go to Settings
2. Tap on “Digital Well-being and Parental Controls”
3. Tap the chart at the top of the screen. This should bring you to the “Dashboard”
4. Tap on “Tiktok”
5. Switch bar from “Daily” to “Weekly”
6. Swipe the weekly graph to the right to show the previous week
7. Find daily average over the last week and record this number

APPENDIX B

Rosenberg Self-Esteem Scale

		Strongly Agree	Agree	Disagree	Strongly Disagree
1.	On the whole, I am satisfied with myself.				
2.	At times, I think I am no good at all.				
3.	I feel that I have a number of good qualities.				
4.	I am able to do things as well as most other people.				
5.	I feel I do not have much to be proud of.				
6.	I certainly feel useless at times.				
7.	I feel that I'm a person of worth, at least on an equal plane with others.				
8.	I wish I could have more respect for myself.				
9.	All in all, I am inclined to feel that I am a failure.				
10.	I take a positive attitude toward myself.				

APPENDIX C

PROMIS Emotional Distress Scale – Depression

							Clinician Use
In the past SEVEN (7) DAYS....							**Item Score**
		Never	**Rarely**	**Sometimes**	**Often**	**Always**	
1.	I felt worthless.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
2.	I felt that I had nothing to look forward to.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
3.	I felt helpless.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
4.	I felt sad.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
5.	I felt like a failure.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
6.	I felt depressed.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
7.	I felt unhappy.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
8.	I felt hopeless.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
						Total/Partial Raw Score:	
						Prorated Total Raw Score:	
						T-Score:	

APPENDIX D

PROMIS Emotional Distress Scale – Anxiety

							Clinician Use
In the past SEVEN (7) DAYS....							**Item Score**
		Never	**Rarely**	**Sometimes**	**Often**	**Always**	
1.	I felt fearful.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
2.	I felt anxious.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
3.	I felt worried.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
4.	I found it hard to focus on anything other than my anxiety.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
5.	I felt nervous.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
6.	I felt uneasy.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
7.	I felt tense.	❑ 1	❑ 2	❑ 3	❑ 4	❑ 5	
						Total/Partial Raw Score:	
						Prorated Total Raw Score:	
						T-Score:	

APPENDIX E

UCLA Three-Item Loneliness Scale

1. First, how often do you feel that you lack companionship: Hardly ever, some of the time, or often?
 1 [ ] Hardly Ever
 2 [ ] Some of the Time
 3 [ ] Often

2. How often do you feel left out: Hardly ever, some of the time, or often?
 1 [ ] Hardly Ever
 2 [ ] Some of the Time
 3 [ ] Often

3. How often do you feel isolated from others? (Is it hardly ever, some of the time, or often?)
 1 [ ] Hardly Ever
 2 [ ] Some of the Time
 3 [ ] Often

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