



## Examining the Impact of Social-Media on Adolescent Mental Health

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### ABSTRACT

Since social media platforms provide a space for social engagement, self-expression, and knowledge sharing, they have become an essential component of teens' everyday life. Still, a lot of worries have been expressed about how social media use affects teenage mental health. Through an examination of the direct and indirect impacts mediated by a variety of psychological and physiological factors, this study delves into the complex relationship between social media usage habits and outcomes related to teenage mental health. This research will contribute to the understanding of the complex interactions between social media use and mental health indicators, such as anxiety, depression, and self-esteem, by using a varied sample of teenagers. This research investigates the varied effects of diverse social media material, varying parental participation levels, and digital literacy on the mental health of teenagers through a mixed-method approach that includes quantitative surveys and qualitative interviews.

### 1. INTRODUCTION

Psychological health. Psychiatric conditions, such as schizophrenia, bipolar disorder, depression, and anxiety, are remarkably common and can seriously impact quality of life. According to the Global Burden of Disease survey, around one billion people globally suffered from mental illnesses in 2017; the most common ailments were anxiety and depression [1]–[4]. Every year, about 20% of Americans suffer from a mental illness of some kind, with 5% of them suffering from a severe case (NAMI 2020). Psychological problems can have serious negative effects that limit a person's ability to work, learn, and function effectively [5]. According to the World Health Organization's Global Burden of Disease report, mental illness is the most expensive category of disorders for individuals under 45 in terms of total disability-adjusted years. Depression is thought to be the most difficult of these conditions [6]–[9]. Regretfully, there has been a decline in mental health trends in the US over the last 20 years,

especially for youth and young adults [10]–[13]. Based on the information provided in the online Appendix Figure A.1, self-reported cases of psychological distress and depression have increased significantly over the past 15 years, with young people showing the highest growth rate [14]. Accordingly, there has been a notable increase in the number of actual suicides as well as self-reported cases of considering, planning, or attempting suicide in that specific population. Several researchers have suggested a potential link between these two occurrences, given that the divergence in mental health trends between younger adults and older generations happened at the same time as the rising usage of social media [15]–[18].

Adolescents in the current digital era are becoming more and more engrossed in social media platforms, which is influencing their social networks, mental health, and self-image. Social media provides a platform for self-expression and

contact, but there are worries about what can happen to teenage mental health [19]. This study aims to investigate the complex relationship between teenage mental health and social media use in order to better understand this issue [20]–[23].

## 2. LITERATURE REVIEW

The literature review phase involves a critical examination of published research and publications regarding the impact of social media on the mental health of adolescents [24]. The ensuing publications will be consulted in order to determine the research gap and make the aims of the study more clear [25]–[27], [28]. Young people' usage of social media and sense of social isolation in the United States. [29]–[32] Increases in depressed symptoms, suicide rates, and suicide-related outcomes among adolescents in the United States following 2010, along with correlations to longer screen times for new media. [33]–[35]. the relationship between the use of digital technology and teenage wellbeing. [36]–[38]Screen time and adolescent depression are related. [28], [39], [40]relationships between kids in the US who use social media and those who internalize and externalize difficulties [1], [2], [41], [42]. Welcome to the special section on the relationship between mental health and digital media use.[6], [7], [43], [44] . Effects of social media on youth and child health. [8], [9], [45], [46] Teenage suicide and self-harm. [10], [13], [47], [48] A meta-analysis of teenage social media use with risky behavior. [16], [49]–[51] a thorough analysis of how social networking site use affects outcomes related to disordered eating and body image. [17], [52]–[54] Do social media use and mental health suffer as a result? investigating the viewpoints of teenagers. Figure 1: Framework Model

Psychiatry and Clinical Child Psychology, [20], [22], [53], [55]Results from a large-scale, nationally representative sample of adolescents on problematic social media use. [25]–[27], [56].

## 3. METHODOLOGY

The study will use a mixed-methods approach, integrating quantitative and qualitative techniques, to thoroughly examine how social media affects the mental health of teenagers. With the help of qualitative insights and statistical analysis of numerical data, this approach will provide a comprehensive investigation of the phenomenon. To guarantee that participants are chosen from a range of diverse demographics, such as gender, age, and status, use random sampling. This approach will improve how they are presented and enable a useful analysis.

### 3.1. Variables

#### *Independent Variables;*

- *Daily Social Media usage Duration, demographic.*
- *Specific content (categorized as positive, negative or neutral), demographic.*
- *Digital literacy level, demographic.*

#### *Dependent Variables;*

- *Anxiety and depression level, demographic.*

#### *Moderating Variable;*

- *Level of parental involvement, demographic.*

#### *Mediating Variable;*

- *Self-esteem, dichotomous.*

The following framework model presents the identified variable.

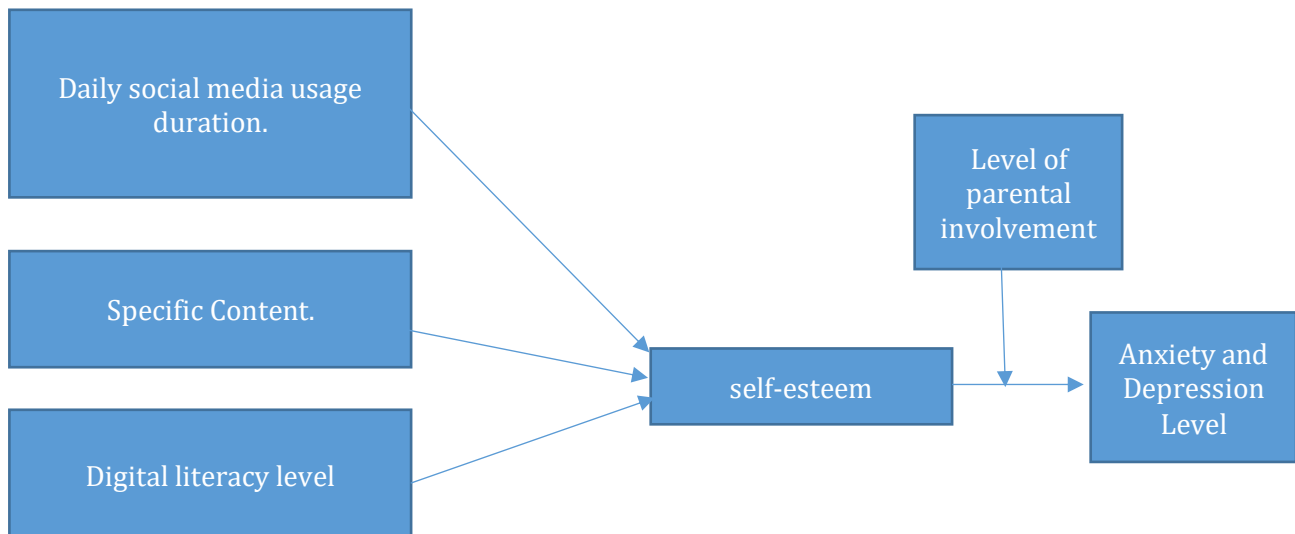


Figure 1: Conceptual Framework

The research guides the understanding of social theory, which emphasizes the interaction between personal factors, behavior and the environment. In context of social media, this theory suggests the adolescent's mental health outcomes are influenced by individual characteristics, social interactions and the environment engaged with daily.

Hypothesis statement:

- Null Hypothesis H0: Daily social media usage does not affect self-esteem.
- Alternative Hypothesis H1: Daily social media usage does affect on self-esteem.
- Null Hypothesis H0: Focusing on specific content does not affect self-esteem.
- Alternative Hypothesis H1: Focusing on specific content does effect on self-esteem.
- Null Hypothesis H0: Digital literacy does not have significance on self-esteem.
- Alternative Hypothesis H1: Digital literacy does have a significance on self-esteem.
- Null hypothesis H0: Self-esteem does not affect anxiety and depression level.
- Alternative Hypothesis H1: Self-esteem does affect anxiety and depression level.
- Null Hypothesis H0: The connection between anxiety and depression levels and self-esteem is unaffected by differences in environment.

Alternative Hypothesis: Different environment does affect the relationship of self-esteem and anxiety & depression level.

Is a process of gathering and measuring information on variables of interest (research questions) It is a crucial step [1]–[4]. Data collection methods are classified into two types, qualitative and quantitative. Additionally, in order to ascertain the effect of social media on teenage mental health, this study uses both qualitative and quantitative data collection techniques [6]–[9]. Qualitative *research* is a method that inquires to aims to understand, interpret and explore the complexity of human behavior, experiences and phenomena [57]. The qualitative methodologies include various unique approaches by understanding human experiences by interviews, observations and literature reviews which reveals concepts with hypothesis. Literature review is conducted in this stage [10]–[13]. The method of empirical inquiry known as quantitative research focuses primarily on the methodical gathering and analysis of numerical data. It qualifies attitudes, behaviors, and views that are subject to statistical analysis. At this point, online surveys are carried out [15]–[18].

A survey can be established on deployment technique and deployment frequency. *The deployment method* determines the way the survey is directed it approaches online, phone and live interviews. It is carried out by google forms which helps on online surveys. *The deployment frequency* is a study based on longitudinal surveys and retrospective surveys. The deployment frequency is one since the survey is only conducted once [20]–[23]. The survey has 75 Reponses.

NO.	RESEARCH QUESTION
RQ1	Does parental involvement effect impact of social media on adolescent?
RQ2	Does social media usage duration effect self-esteem?
RQ3	Does focusing on specific content effect self-esteem?
RQ4	Indicate the extent to which you believe level of digital literacy influences self-esteem.
RQ5	I believe self-esteem significantly influences levels of anxiety and depression.
RQ6	How does the degree of environmental variation affect the connection between anxiety and depression levels and self-esteem?

A key component of research technique is sampling, which is the process of choosing a group of people or other components to represent a wider population. Making reliable inferences about the population from the features of the chosen sample is the aim of sampling. Probabilistic and non-probabilistic sampling procedures are the two categories.

Not Very Likely Unlike random selection, sampling does not guarantee that every member of the population will be included in the sample on an equal basis. Among them are: Participants in Convenience Sampling are chosen according to their accessibility and availability. conducting street interviews or polling people who happen to be in a certain place at a particular time. With judgmental sampling, participants are chosen by researchers according to predetermined standards or their subject-matter expertise. By referring or nominating individuals to participate in the study, current participants engage in snowball sampling. It examines a tiny community where initial participants recommend other eligible individuals to the researchers. Using quota sampling, researchers choose participants according to predetermined standards to guarantee a representative sample. It guarantees that a

particular proportion of study participants meet predetermined criteria, including age, gender, and socioeconomic background.

Every unit in the population has a known probability of being chosen for the sample when using the probability sampling technique [25]–[27]. By guaranteeing that every component of the population has an equal chance of being included in the sample, this kind of sampling helps when drawing conclusions about the population as a whole from the sample's characteristics. Among them are:

**Multistage Sampling:** This technique includes several sampling phases. It blends components of other sampling techniques, like cluster sampling and then plain random sampling inside the cluster. In stratified sampling, the population is separated into strata or subgroups according to attributes like income, gender, or age. In order to guarantee representation from every subgroup in the final sample, random samples are drawn independently from each stratum [28].

Using systematic sampling, each of the K elements is included in the sample once a random starting point is chosen. The population size divided by the intended sample size yields the K value.

Every member of the population has an equal probability of being chosen in simple random sampling. This technique is frequently applied utilizing a randomization procedure or random number generation.

The probability sampling strategy has been adopted in this study. One component of the probability sampling strategy that will be used in this study is the stratified sampling technique. To ascertain if respondents believe social media can impact teenage self-esteem in adulthood, stratified sampling is used. 37.3% disagree with the 49.3% who believe social media has an impact on adolescents' self-esteem.

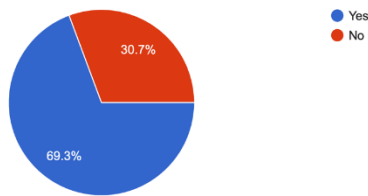
#### 4. DATA ANALYSIS AND FINDINGS

The process of examining, purifying, converting, and modeling data in order to find relevant information, make inferences, and aid in decision-making is known as data analysis. primarily divided into four types: The primary characteristics of the dataset are summarized and destringed as part of descriptive analysis. It seeks to give a concise and insightful synopsis of the key features of the data.

Exploratory analysis is conducted to discover patterns, relationships and trends in the data. Particularly useful when you don't have a specific hypothesis and want to explore the data for insights. Report analysis offers a comprehensive overview of research outcomes, presenting factual information in a easy and understandable format. Predictive analysis focuses on forecasting future trends or outcomes based on historical data. Involves building models that can make predictions about future observations. This research uses both descriptive and exploratory research method since the survey is used as a infographic statistic. The statistical terms used in this research are: Mean, denotes the average value of data Skewness: measure of distribution's asymmetry. Standard deviation: measures the spread of data around the mean.

RQ1

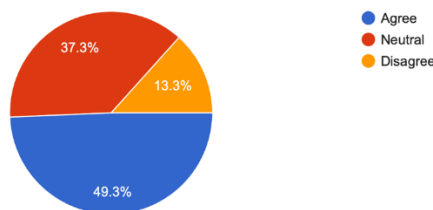
Does parental involvement effect impact of social media on adolescent?  
75 responses



The response of this research question indicates, 69.3% of the respondents agree that parental involvement do effect in the impact of social media on adolescent while 30.7% feel the involvement doesn't necessarily involve in this matter.

RQ2

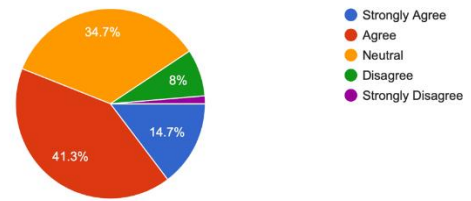
Does social media usage duration effect self-esteem?  
75 responses



Reponses of this research question indicates that 49.3% of respondents agree that the time spent on social media has effect on the self-esteem while 37.3% have a neutral response and 13.3% feel like there is no impact of screen time on the self-

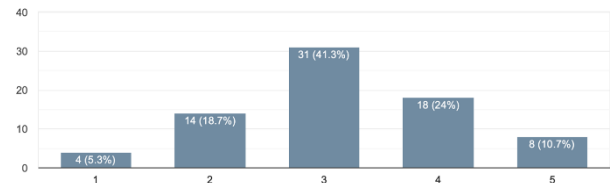
esteem.  
RQ3

Does focusing on specific content effect self-esteem?  
75 responses



The response of this research question indicates whether focusing on specific content effect self-esteem, while 41.3% agreed on this statement, 34.7% have a neutral feeling towards it. 14.7% have agreed strongly on the statement which kept 8% disagreeing on it. It shows that there is an impact of the content frequently watched on the self-esteem.

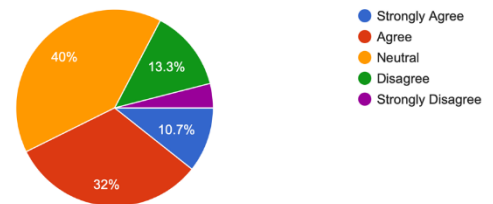
Indicate the extent to which you believe level of digital literacy influences self-esteem.  
75 responses



The response of this research question indicates that 5% of respondents are strongly disagreeing mentioning there is no impact of digital literacy on self-esteem, 19% are agreeing on it, 41% are more on the neutral side, 24% agree with the statement while 11% strongly agree on the statement.

RQ5

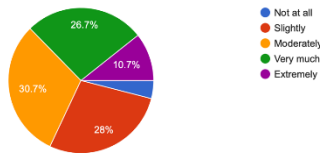
I believe self-esteem significantly influences levels of anxiety and depression.  
75 responses



This research question shows that 40% have a neutral feeling towards this statement, 32% agree with self-esteem effecting anxiety and depression while 13% disagreed and 11% strongly agreed.

## RQ6

How does level of differential environment effect the social media users with relation to self-esteem or anxiety & depression level?  
75 responses



The research question indicates whether differential environment can affect social media users in their self-esteem while 31% have moderate feeling on it, 28% feel slightly effected, 27% agree that it has a great impact and 11% have extreme effect.

## 5. CONCLUSION

Social media platforms have become an integral part of teenage life because of their capacity to promote knowledge exchange, self-expression, and social relationships. However, a lot of people are worried about the impact that teen use of social media has on mental health. This study explores the complicated association between social media usage habits and teenage mental health outcomes by examining both the direct and indirect consequences, which are mediated by multiple psychological and physiological factors. This study intends to explore the complicated association between social media use and mental health markers, such as anxiety, melancholy, and self-esteem, using a diverse adolescent sample. This study examines the various effects of varied parental guidance and social media content using a mixed-method approach that incorporates quantitative surveys and qualitative interviews.

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