

# Unboxing Social Media Abuse and Depression among Teens; an Ivory Tower Syndrome

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**Received date:** March 03, 2025; **Accepted date:** March 19, 2025; **Published date:** April 09, 2025

**Citation:** Muhammad Ahmad Alamgir, Majid Raza, (2025), Unboxing Social Media Abuse and Depression among Teens; an Ivory Tower Syndrome., *J Clinical Research and Reports*, 19(4); DOI:10.31579/2690-1919/511

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## Abstract

**Introduction:** Social network sites (SNS) are extensively being used worldwide. Among the various pros resulting from its usage, there is substantial evidence that mental illness like anxiety/depression or sleep disturbances may result and particularly the adolescents of developing countries may be prone to it. Our hypothesis is to collect the research-based evidence to observe the impact of problematic SNS use on mental health.

**Hypothesis:** Problematic social media use might increase the depressive outcomes among Adolescents.

### Methodology:

**Inclusion criterion:** A qualitative systemic review was carried out and the data of adolescents {age 13 to 18 years} with SNS abuse with the effects on depression/anxiety or sleep disorders was assessed. To limit grey literature, the retrospective results of previous 10 years cross-sectional, case-control or cohort study and surveys were included. Records were obtained from Google Scholar, Medline/PubMed, Scopus, Science Direct, and Web of Science until 2024. This study was prepared based on the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guideline.

**Exclusion criterion:** Only research work of above mentioned topic pertaining to adolescents was analyzed. Symposium or conference abstracts, book chapters, case reports or letters to the editor were excluded.

**Results:** Adolescents are more vulnerable to psycho-social disorders particularly depressive episodes and sleep disturbances due to problematic use of social media platforms for long term use

**Keywords:** adolescents; depression/sleep disturbances; social media abuse

## Introduction

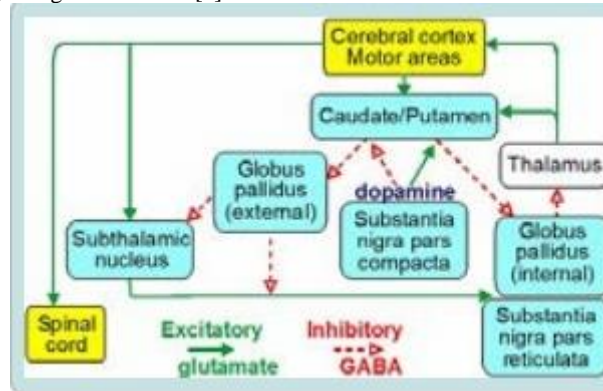
Since the last decade the use of social media has increased dramatically and recent epidemiological data reveal that more than 4.62 billion people worldwide use social networking sites (SNS) while about two-thirds (67.1 percent) of world population are mobile users [1]. More than two-thirds of the world's population now uses the internet. Different Social network sites (SNS) sites are used depending upon gender, race and culture and literacy level [2]. The most frequently used tool is Face book, followed by tik Tok, whatsapp and Instagram. About 84 percent of Americans use at least one social media network [1][2]. Internet and U tube is also frequently used. Highest percentage (65%) of population in Indonesia use internet and worldwide mostly people use internet for work purposes [2].

Certainly, different platforms of social media have revolutionized dissemination of information and attaining knowledge in academics. It has also resulted in great progress in economics, organizational growth, corporate fields and academics. However, there are large numbers of demerits as well. In a survey, it was revealed that 72.2% of respondents from European Union had internet addiction, followed by lack of security, information overload, and loss of social contacts and increased wastage of time [3]. However, people are not affected at uniform and age along with gender is important determinant. Adolescents are common sufferers. The use of news' social media was significantly associated with more negative effects, depression, anxiety, and stress, rather than traditional media [4]. Studies concluded that social media use by adolescent particularly at night resulted in poor quality of sleep, anxiety along with

depression and loss of self-esteem[4][5]. Smartphone use can lead to a negative health impacts like alterations in brain activity, impaired response times, and abnormal sleeping habits [6].

### Literature Review

Adolescents of any nation can develop remarkable creative and innovative academic achievement. By imparting quality behavior and code of conduct, they can contribute excellent professionalism to the society [7]. Unfortunately, SNS abuse has adversely affected these qualities and often the teens have reportedly changed in behavior. Particularly during era of Covid pandemic, there had been more prevalence of online users at home leading to digital addiction [8].



Positive social stimuli similarly result in a release of dopamine. The neuronal pathways get stronger with ever-increasing surge of dopamine. Eventually, if that stimulus is decreased or if that stimulus is removed suddenly the brain responds by activating the areas concerned with grief and sorrow, hence a state of depression. Different SNS platforms have been analyzed in research studies. Smart phones have provided us with ample supply of social stimuli, both positive and negative. Every notification, whether it is a text message, a Facebook notification, or a “like” on Instagram, has a positive social stimulus and dopamine influx [9]. 92% of teens report going online daily—including 24% who say they go online almost constantly [10]. Nearly three-quarters of teens have or have access to a smart phone. Facebook is the most popularly used among adolescents. Half of teens use Instagram, and nearly as many uses Snap Chat as well [10].

Moreover, online users in developing countries are more vulnerable to impaired cognitive functions owing to poor awareness and non-compliance with preventive measures. Considering this paradigm, retrospectively studies were reviewed to analyze the abnormal impact of different social media platforms and ultimate behavior outcomes particularly depression among adolescents of south Punjab, Pakistan.

### Methodology

**Inclusion criterion:** A qualitative rapid systemic review was carried out and the data of adolescents {age 13 to 18 years} with SNS abuse with the effects on depression/anxiety or sleep disorders was assessed. To limit grey literature, the retrospective results of previous 10 years cross-sectional, case-control or cohort study and surveys were included. Records were obtained from Google Scholar, Medline/PubMed, Scopus, Science Direct, and Web of Science until 2024. This study was prepared based on the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guideline.

Searching key variables with the following key terms were used: (a) adolescents population (b) exposure to SNS/ digital platforms (c) outcome of cognitive behavior/ sleep disturbances/ mood disorders. (d) Study design (cohort studies, cross sectional studies, epidemiology, and observational/ national health surveys); (e) study setting (school, community based surveys, health institutions) and (f) location (names of low and middle-income countries or developing countries). Simple

How screen use affects physical and mental health? Anything that a person perceives as rewarding will drive through dopamine pathway. If it happens time and time again, it's a powerful reinforcement for repeated behavior until it becomes habit in your life. Dopamine is main hormone regulating nigrostriatal pathway and is produced by substantia nigra. It significantly regulates movements, emotions, behavior and addictive habits [9]. It is called pleasure hormone. It produces stimulatory affect by acting on D1 receptors and inhibition by effect on D2 receptors.

### Dopamine loop

descriptive statistics with percentage were used and results were interpreted in tabular-cum- graphical form.

Following signs of mood disorders or sleep disturbances were noted.

Signs of depression

- the patient suffers from extreme levels of fatigue due to over exhaustion of brain stress areas.
- Persistent sensations of sadness and least interest in surroundings.
- Increased or decreased appetite along with changes in body weight.

**Exclusion criterion.** Only research work of above mentioned topic pertaining to adolescents was analyzed. Symposium or conference abstracts, book chapters, case reports or letters to the editor were excluded.

### Discussion:

The most common mental health disorder among adolescent with social media abuse is depression [11]. The patient is in a cycle of never-ending trauma. This leads to a state of fight between patient's consciousness and emotions. Both try to exert their dominance, which results in continuous state of rage, anger and depression followed by intervals of emotional wellbeing. Adverse consequences of depression and anxiety include impaired social relationships lower educational credentials, increased risk of substance abuse school dropout, mental health problems and suicide [12] [13].

We retrospectively collected the qualitative results of different met analysis and research studies about the impact of different SNS platforms on mental well being of adolescents. It is high time to describe the analytic results of a land mark trial. A recent international data reported that the average time consumed by face book and Tik Tok is 19 hours per month while for what's app it is 18 hours and average time consumed by Instagram is 11 hour per month (1)

In a met analysis, using the databases, a total of 18 studies and 9269 participants were identified. Results showed statistically significant correlations between problematic social media use and depression ( $r=0.273$ ) In a met analysis, using the databases, a total of 18 studies and

9269 participants were identified. Results showed statistically significant correlations between problematic social media use and depression ( $r=0.273$ ,  $PP<.001$ ), anxiety ( $r=0.348$ ,  $P<.001$ ) and stress as well ( $r=0.313$ ) [14]. Another research also showed a bi-directional relationship between problematic Internet use and depression on adolescents and university students [15]. Another meta-analysis (including 12 studies) showed identical findings, they found a small but significant positive correlation between adolescent social media use and depressive symptoms [16]. Unique feature of this trial was heterogeneity, and it was considered that other variables may be involved. Time spent is important variable. Researchers in a longitudinal study concluded that Increases in time spent on social media were associated with increases in symptoms of depression. There was also increased episodic drinking confounder among these participants [17]. They reported that there may also be some prior depressive symptoms, but it was difficult to sort out. Among adolescent girls, Raudsepp and Kais's 2-year study revealed that prior social media use did not predict depressive symptoms whereas baseline levels of depressive symptoms predicted problematic social media use [18]. But sometimes, determining the outcome is not so easy and reverse association can happen. Some theories also indicate that depressive symptoms may lead to social media use. It is called as the theory of compensatory internet use [19][20]. How can we reduce the depressive symptoms? Obviously, the answer is to reduce screen time. Authors of recent study concluded that stopping use of social media for just one week resulted in significant improvement in wellbeing, reduction in anxiety /depression and increase in overall academic performance [21]. In a local study, Mahmood, R. S ,et al [22] concluded that the majority with screen time of one hour were not much affected. People with 2 hours and more than 3 hours screen time faced depression the most. Balouch MA and colleagues concluded that Types and pattern of SNS platforms and duration also matters. They concluded that YouTube was most famous websites among young generation, 24.4% of their participants were found to be mildly depressed whereas 44.6% were moderately depressed. Moderately severe depressed were found to be 26.3% and 4.7% were found to be severely depressed [23].

Some contrary results were obtained as well. More prolonged studies spanning over 8 or 9 years have viewed that frequency of social media use does not longitudinally predict depressive symptoms in adolescents [24]. The rational explanation is that it may be due to important confounding factors as education level, gender, race and cultural heritage

According to another study it was concluded that Facebook is imparting more negative impact on mental and social life of the students as compared to other digital plate forms [25]. The study also reveals that in future prospective interaction may be occurring on the performance of the students in their academics. It was suggested by authors that some monitoring bodies must be implanted to monitor the issue. Hunt et al demonstrated that limiting social media use to 30 min daily alleviated loneliness and depressive symptoms over a span of 3 weeks [26].

Collectively the above-mentioned research studies concluded that among teens, different SNS platforms have negative impact on mental wellbeing. Other consequences were, no time for real world friends, cyber bullying, lack of self-reflection and insomnias etc.

## Conclusion

The above-mentioned research review largely conclude that adolescents are more vulnerable to psycho-social disorders particularly depression due to problematic use of social media platforms for long term use. The public health workers, health care providers and social workers should have a constructive approach towards solving this critical issue by inculcating awareness and by educating preventative measures. "One of the only ways to get out of a tight box is to invent your way out"

## Top takeaway

"Life is not over yet" Social media work is habit forming. Habit is actually a behavior that is performed repeatedly until becomes automatic. Effects of your habits multiply. Making a choice that is 1 percent better or worse seems insignificant but over period of time it makes difference because "All big things come from small beginning".

Following are outlines of updated suggestions to change habits and behavior linked to SNS:

- Set a timer to remind how long you've spent on a networking site. Be calculated and plan real-world activities to limit your time on social media.
- Make the time to enjoy life off line. Play any game, watch a movie or read a book.
- Do not bring your phone or tablet to bed
- If you have neglected face-to-face friendships, reach out to an old friend
- Join a club and exercise accordingly.
- Volunteer for social work or charity.
- Lastly, monitor and limit your child's social media use
- Facilitate and promote affection and generosity and "Remember kindness is always rewarded."

## Limitations of the study.

Only the depressive effect of social media use was assessed and other predisposing factors that cause certain individuals to use social media problematically might be there. Together, the longitudinal evidence of reverse relationship has been overlooked.

## Acknowledgement

First and foremost, I dedicate my work to my dearest late parents, Muhammad Aslam Khan and Kaneez Zaneb, who had unconditional love with affection for me and have motivated me throughout my life. Almighty Allah shower countless blessings on them. Amen

## Conflict of interest

Author declares that there is no Conflict of interest exists.

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DOI: [10.31579/2690-1919/511](https://doi.org/10.31579/2690-1919/511)

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