A Study On The Impact Of Instagram On Anxiety Levels In Teenagers

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Abstract:
The use of social media around the world has been on an exponential rise, especially in today's teenagers. Social media has embedded itself into the daily routine of every human being. However, teenagers between the ages of 13-18 are the biggest user group of social media. Within teenagers, Instagram is among the most prominent applications. The purpose of this study is to highlight the pattern between Instagram usage and anxiety levels among the teenagers of the current generation.

Previous research has primarily studied the impact of the entire gamut of social media applications on the mental health of youth. None of the researchers give an individual focus to the potentially harmful impact of the most prominent social media application, "Instagram", on anxiety levels, specifically within the targeted age group of 13-18 years. It is a potential situation of alarm for the new generation.

It was hypothesized that if daily usage of Instagram among teenagers is between 3-4 hours, then nervousness, anxiety levels, procrastination levels and sleep deprivation will increase. The hypothesis was proven to be correct with the help of a structured questionnaire sent out to a random sample of 200 teenagers. The questionnaire received a response from 150 subjects. A set of 15 questions were answered by each of the subjects. Along with this survey, the researcher collected data from various articles, journals, and magazines regarding psychological and developmental factors in relation to anxiety.

Contrary to beliefs about increased self-expression and community building through Instagram, a significant dip in motivation levels and increased restlessness is clearly correlated with increased Instagram usage. The findings of this paper support the same.

Keywords: *Social media, Instagram, Anxiety, Impact, Teenagers*

I.   Introduction

Constant usage of social media platforms; especially Instagram, has been accompanied by an increase in anxiety levels in teenagers falling in the age group of 13-18 years. Social Media refers to the plethora of applications such as WhatsApp, Facebook, Instagram, Twitter, YouTube, TikTok, etc. that allow users to connect with others, and also create and share unlimited content. The World Health Organization (WHO) in 2011 defined 'teenagers' as people in the age group of 13-18 years. Social media has evolved in the past 2 decades and continues to do so. 'Instagram' refers to a "photo and video sharing app where media can be uploaded with added filters and often recognized by geographical tagging". These 'posts' can be uploaded publicly or to a select group of people (Meta Platforms, 2010).

According to the Pew Research Centre (2023), 72% of teenagers use Instagram daily, out of which two-thirds have reported negative impacts of the application, in their day-to-day lives. While the impact of social media on the mental health of youth is being investigated, the specific implications of Instagram on anxiety levels within a specific age group of 13-18 years is yet to be looked into. This paper explores how excessive use of Instagram increases anxiety levels. It also studies the impact on perception of oneself and passive aggression in today's teenagers.

II.   Literature Review

It is evident that there exists a correlation between Instagram and anxiety in teenagers. Today, 'Generation Z' has unlimited access to the Internet and consequently social media applications, notably Instagram. According to a study conducted by Woods & Scott (2016), teenagers who spend one-third of their day on social media have a 78.6% chance to report mental health issues such as anxiety and depression. Similarly, Henry Fersko

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of UNICEF (2018) claims applications such as Instagram are designed for excessive usage by "tapping into our desire for validation and fear of rejection". This is supported by the 'Variable Reward Schedule' theory tested by B.F. Skinner (1930) which is applicable to teenagers in terms of habitually checking Instagram to acquire bursts of dopamine in the form of 'likes' and 'comments'.

A study by Kross et al. (2013) noted that the use of Instagram can lead to a decrease in well-being, increased 'Fear of Missing Out' and social isolation. All these factors contribute to the rise of anxiety levels among teenagers. Expanding on this, Nakshine et al. (2022) stated that high "blue and intense light" exposure to teenagers reduces attentiveness and productivity, further impacting academics.

Laprise (2015) also stated that third-party tagging done in each other's comments specifically by teenagers promotes "talking behind one's back" instead of confronting the other. This leads to increased passive aggression and overthinking in teenagers which becomes a cause of anxiety in the receiver. Brown & Tiggerman (2016, pp. 37-43) further found that exposure to "Photoshopped" Instagram images depicting thin and attractive celebrities leads to self-comparison and dissatisfaction with one's body image, especially in teenage girls.

Finally, the questionnaire conducted with a sample set of 150 teenagers in 2023 concluded with reportedly higher anxiety levels and increased procrastination of daily tasks.

III. Research Methodology

Primary Research: Structured Questionnaire
Overview: A structured questionnaire was employed as the primary research tool. It was distributed to a random sample group of 150 school-going teenagers aged between 13 and 18 years.

Questionnaire Design: The questionnaire comprised 15 questions that focused on various aspects related to Instagram use, such as daily usage, perceived impact on productivity, motivation levels, sleep patterns, and more.

Confidentiality: Participants were assured of their anonymity. Data collected would remain confidential and used solely for the purposes of this research.

Benefits:
● Provides first-hand information directly from the target demographic.
● Allows for quantitative analysis of responses, enabling statistical inferences.
● The structured format ensures uniformity in responses, facilitating easier comparison and analysis.

Potential Shortcomings:
● Subject to biases as respondents might provide socially desirable answers.
● Limited to the perspectives of the 150 teenagers sampled, which might not represent the broader teenage population.
● The precision of results depends on the accuracy and honesty of respondents.

Secondary Research: Literature Review
Overview: To supplement the primary data, a comprehensive literature review was conducted.
Sources: This review sourced information from various articles, websites, previous research papers, journals, and magazines.

Benefits:
● Provides a broader context for the study by including findings from other research.
● Helps validate or contrast the primary research findings.
● Offers historical perspectives or trends on the topic.

Potential Shortcomings:
● The validity of the findings depends on the credibility of the sources.
● Possible outdated or irrelevant data might not directly apply to the current study.
● Potential for confirmation bias if only sources that support the primary research findings are considered.

In conclusion, this methodology seeks to provide a holistic view of the topic by incorporating firsthand experiences of teenagers with insights from previous research. The combination of primary and secondary research not only ensures depth but also widens the scope of the study. However, it is essential to approach the findings with an understanding of the potential limitations inherent in both research methods.

IV.   Instagram & Anxiety

'Likes' and 'Comments'

Instagram consists of a feature which allows users to 'like' and 'comment' to acknowledge a particular photo or video. Receiving these validations feeds the desire for recognition in the teenage brain. As a result, the release of the "feel-good" chemical dopamine increases, making teenagers crave it. This is aligned with the "Variable Reward Schedule" Theory (Skinner, 1930), which was first tested on mice but is deemed applicable to humans. Likes and comments come at random, and the perception of a reward delivered at random increases the habitual checking of Instagram by teenagers (Haynes 2018). This shifts the focus from real-life connections and brings it to constantly receiving validation. If this validation is not received, it increases the anxiety levels and overthinking of not being good enough. Furthermore, Instagram runs on an algorithm which sometimes withholds 'likes' and later delivers them in large bursts. So, when a user uploads a post, one is disappointed to find less attention, only to receive them in a bunch later. The dopamine centers in the teenage brain are the most active and they respond "robustly" to the influx of social appreciation. This increases the addiction to Instagram and further impacts the attentiveness of teenagers. The inability to get as many likes as wanted increases the self-doubt and further shoots up the anxiety levels (Haynes, 2018).

'Fear of Missing Out' (FOMO)

The main anxiety trigger on Instagram has reportedly been the 'Fear of Missing Out' (FOMO). Constant checking of videos and photos uploaded by peers and of what others are doing brings a comparison to mind. This induces anxiety about doing the same or better. The fear of not being able to do it hurts their self-esteem and causes self-judgment; of being looked down upon by others (Hattingh et al., 2022). The documentation of activities by others makes it seem like they are living their best lives. As a result, teenagers with their minds vulnerable to peer pressure, get sucked up in the fantastical world of perfection. This triggers FOMO and teenagers get negatively influenced. This reduces their capability to make rational decisions further leading to anxiety. The multiple features of hashtags, captions, 24-hour-long stories and highlights that do not expire, constantly act as encouragement to capture each moment of their lives. This increases the competition for having the best profile and further creates an exponential rise in anxiety levels among teenagers (Hattingh et al., 2022).

Screen Hours & Lack of Sleep

The addiction to Instagram causes high exposure to "blue and intense" light being emitted from devices. This hampers the production of melatonin; required for peaceful and deep sleep, thereby harming eyesight. Teenagers often succumb to the trap of "five more minutes", resulting in long hours of scrolling through Instagram. It negatively impacts the eyesight and also decreases the amount of good sleep. The amount of time spent on Instagram increases the amount of time a teenager spends engaging in an exciting task while staring at a cell phone screen which then enhances the psychophysiological arousal, disturbing sleep (Nakshine et al., 2022). A sleep of 7-8 hours is essential for school-going students. However, the usage of Instagram hinders this and impacts productivity levels and attentiveness. Lack of productivity and less attentiveness are often reflected in the grades and extra-curricular performance of teenagers. The inability to score well becomes a source of acute anxiety. Since 86% of teenagers keep their phones beside them while sleeping, the notifications at night also act as a factor in disrupting peaceful sleep (Lenhart et al., 2010). Being awakened by incoming notifications has been reported to be a prevailing issue. Hence, increased usage of Instagram not only causes a rise in anxiety levels but also impacts the eyesight and sleep of teenagers.

Passive Aggression

Being passively aggressive on Instagram is a common practice. Instead of confronting each other, teenagers have found ways to avoid face-to-face talking and sorting a conflict through Instagram. In recent times, no one bothers to tell the other if they are annoyed or irritated with them. Practices like avoiding liking someone's Instagram post to convey the message of being mad at a fellow peer or commenting using 'third-party tagging' have created an epidemic of its own. Liking photos, videos and comments that one truly despises just to spite the creator is a frequent trigger for anxiety in the receiver. Tagging friends in popular Instagram posts which relate to an experience of another friend, also known as 'third-party tagging', induces anxiety in the creator who can access the 'bad' comments. The anxiety within teenagers increases due to seeing the passive aggression of others and hence doubting oneself. Moreover, the feature of 'direct messaging' (DMs) on Instagram allows users to text each other and has 'read receipts'. To display their anger, teenagers often "leave each other on read" and as a result ignore the other. This causes overthinking in teenagers about what went wrong, causing them to constantly stay distracted (Laprise, 2015). These acts of passive aggression are an easy way out but further have an immense negative impact on the mental peace of teenagers.

Body Image

In an experimental study, Brown & Tiggerman (2016, p 37-43) noted that increased exposure to Instagram images that depict "attractive and thin celebrities and fellow peers are associated with high dissatisfaction levels, caused by social comparison". Likewise, it was also found that "photoshopped" Instagram photos have a negative influence on teenagers as they often believe what they see is completely real and not manipulated (Kleemans et al., 2018, p 93-110). Teenagers then doubt their ability to look good and compare themselves to others, to a dangerous extent. Furthermore, the quantitative and qualitative illusions formed by manipulated pictures and flooding of 'likes' and 'comments' cause teenagers to become anxious about why they are not able to do the same. A study backed this by revealing the higher the number of 'likes' and 'comments', the higher the perceived attractiveness of the person, which then results in higher dissatisfaction and appearance comparison between teenagers (Hayden & Brown, 2018). This higher dissatisfaction can often cause teenagers, especially adolescent girls to starve themselves in order to look better and lose weight, leading to serious problems such as anorexia. Hence, Instagram takes a negative toll on the perception of one's body image and can cause serious problems of anxiety to the mental and physical health of teenagers.

Data Analysis

Table 1: Details of the Age Group of Respondents

Age group (years)	No. of respondents	Percentage
13-15	38	25%
16-17	78	52%
18	34	23%
Total	150	100%

Interpretation: From the table above, it is inferred that 52% of respondents belong to the age group of 16-17 years, 25% of respondents belong to the age group of 13-15 years and 23% of the respondents are 18 years of age. This indicates the maximum number of respondents was from the age of 16-17.

Table 2: Most Frequent Use of Social Media Application.

Tools of social media	No. of respondents	Percentage
Instagram	52	35%
Snapchat	27	18%
WhatsApp	43	29%
TikTok	15	10%
Twitter	6	4%
Others	7	4%
Total	150	100%

Interpretation: From the table above, it is inferred that 35% of respondents use Instagram the most, 29% of respondents use WhatsApp the most, 18% of the respondents use Snapchat the most, 10% of the respondents use TikTok the most and 4% of respondents use Twitter and other tools of social media, each. This indicates the maximum number of respondents use Instagram the most.

Table 3: Number of Hours Spent on Instagram

Hours	No. of respondents	Percentage
1-2	60	40%
3-4	85	57%
More than 4 hours	5	3%
Total	150	100%

Interpretation: From the table above, it is inferred that 57% of respondents spend 3-4 hours on Instagram daily, 40% of respondents spend 1-2 hours on Instagram daily and 3% of the respondents spend more than 4 hours on Instagram daily. This indicates the maximum number of respondents who use Instagram for 3-4 hours in an average day.

Table 4, 5, 6: Details of Appreciation of Validation through Likes and Comments

Question asked: Does receiving a like on your Instagram post, make you excited?

Options	No. of respondents	Percentage
Yes	124	83%
No	5	3%
Sometimes	21	14%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 83% of respondents are excited by receiving a like on their Instagram post, 14% of respondents are excited sometimes and 3% of respondents do not get excited. This indicates the maximum number of respondents do get excited when they receive a like on their post.

Question asked: Does not receiving a like on your post, make you unhappy?

Options	No. of respondents	Percentage
Yes	120	80%
No	15	10%
Sometimes	15	10%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 80% of respondents are unhappy if they do not receive a like on their post, 10% of respondents are unhappy sometimes and 10% of respondents do not get unhappy. This indicates the maximum number of respondents do get unhappy when they do not receive a like on their post.

Question asked: Have you ever deleted a post because it did not receive enough likes?

Options	No. of respondents	Percentage
Yes	90	60%
No	33	22%
Maybe	27	18%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 60% of respondents have deleted their Instagram posts due to not getting enough likes, 22% of respondents have not and 27% of respondents may have. This indicates the maximum number of respondents have deleted an Instagram post due to not receiving enough likes.

Table 7: Prevalence of FOMO

Question asked: Have you ever felt like you are missing out on activities your peers are engaging in?

Options	No. of respondents	Percentage
Yes	88	59%
No	35	23%
Sometimes	27	18%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 59% of respondents have felt FOMO, 23% of respondents sometimes feel FOMO and 18% of respondents have not felt it. This indicates that the maximum number of respondents have felt FOMO.

Table 8: Relation between Instagram and Sleep Levels

Question asked: How many hours do you sleep for, on a daily basis, ever since you started using Instagram?

Options	No. of respondents	Percentage
7-8	19	13%
6-7	44	29%
5-6	72	48%
Less than 5	15	10%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 48% of respondents sleep for 5-6 hours, 29% of respondents sleep for 6-7 hours, 13% of respondents sleep for 7-8 hours and 10% of respondents sleep for less than 5 hours. This indicates that the maximum number of respondents sleeps for 3-4 hours.

Table 9.1: Passive Aggression on Instagram

Question asked: Have you ever been left on 'read' by a fellow peer?

Options	No. of respondents	Percentage
Yes	112	75%
No	38	25%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 75% of respondents have been left on 'read' by their peers and 25% of respondents have not been left on This indicates that the maximum number of respondents have been left on 'read'.

Table 9.2: Passive Aggression on Instagram

Question asked: Have you ever felt anxious after being left on 'read'?

Options	No. of respondents	Percentage
Yes	107	71%
No	18	12%
Sometimes	25	17%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 71% of respondents have felt anxious after being left on 'read' by their peers, 17% of respondents may have felt anxious and 12% of respondents have not felt anxious. This indicates that the maximum number of respondents have felt anxious when left on 'read' by their peers.

Table 10.1: Body Image and Instagram

Question asked: Have you ever compared yourself to pictures of your peers online?

Options	No. of respondents	Percentage
Yes	98	65%
No	14	10%
Maybe	38	25%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 65% of respondents have compared themselves to pictures online, 25% of respondents may have compared themselves and 10% of respondents have not compared themselves to pictures online. This indicates that the maximum number of respondents have compared themselves to pictures of their peers online.

Table 10.2: Body Image and Instagram

Question asked: Have you tried to change yourself after looking at pictures on Instagram?

Options	No. of respondents	Percentage
Yes	86	57%
No	45	30%
Maybe	19	13%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 57% of respondents have tried to change themselves after looking at pictures on Instagram, 30% of respondents have not tried to change themselves and 13% of respondents may have tried to change themselves. This indicates that the maximum number of respondents have tried to change themselves after looking at pictures on Instagram.

Table 11: Nervousness and Instagram

Question asked: Do you think you are more nervous in your day-to-day life after using Instagram?

Options	No. of respondents	Percentage
Yes	76	51%

No	27	18%
Maybe	47	31%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 51% of respondents have been more nervous/irritated/annoyed, 31% of respondents may have been observing these behavioural changes and 18% of respondents have not observed these changes. This indicates that the maximum number of respondents have experienced an increase in feelings of nervousness and irritation in their day-to-day lives.

Table 12: Procrastination and Instagram

Question asked: Have you begun to do your work at the last minute, more frequently?

Options	No. of respondents	Percentage
Yes	85	57%
No	45	30%
Maybe	20	13%
Total	**150**	**100%**

Interpretation: From the table above, it is inferred that 57% of respondents have begun procrastinating more, 30% of respondents have not begun procrastinating more and 13% of respondents may have increased their frequency of procrastination. This indicates that the maximum number of respondents has begun to procrastinate more.

V. Findings & Conclusion

Although some might argue that Instagram has increased global reach and has had positive effects, especially during the pandemic when the world was at a stall, the evidence clearly states that Instagram is a negative to teenagers' anxiety levels and mental health in their day-to-day lives. Many initiatives to impart knowledge about the pandemic and other things helped millions of people around the world. Since Instagram has a huge number of users, it is very easy to spread awareness through its handle making it beneficial for teenagers to stay up to date with prevalent issues. The reels posted by people around the world motivated teenagers to try new things and diversify their interests to develop new passions while sitting at home. However, the negatives of Instagram's increasing anxiety levels in teenagers clearly outweigh its positives.

This study examined the impact of the usage of Instagram on anxiety levels in teenagers. The findings reported a clear spike in feelings of anxiety and self-doubt in teenagers. Results also depicted that lack of productivity is on the rise due to the high addiction and anxiety caused by Instagram.

Suggestions

● Instagram could increase the efficiency of already existing heavy-usage warnings. The company could encourage all users to set timers for themselves instead of making it an optional feature.
● Instagram could also find a way to highlight when photos of people have been digitally manipulated as well as identify and offer help to users who could be suffering from mental health problems.
● Teenagers are advised to keep track of their screen time per day and to keep their phones on 'do not disturb' while sleeping to avoid disturbing notifications.
● There should be large-scale campaigns in schools and warnings about social media should be deployed.

To conclude, it is evident that Instagram has been affecting anxiety levels in teenagers immensely, despite its positives.

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