The Impact of Low Self-Esteem, Social Comparison, and Tiktok/Instagram on Social Anxiety: An Examination of Tiktok and Instagram as a Social Mirror

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Abstract

The popularity of social media has grown significantly and rapidly over the last ten years. Nevertheless, there is a constant debate over whether social media improves or worsens people's emotional health. The purpose of this study is to investigate the mechanisms underlying social anxiety and determine the effect of Instagram/tiktok usage on it. In Pakistan, we surveyed 275 people online for a cross-sectional study using the three-stage model of interactive media use for health promotion. Our goal was to examine relationship between social anxiety and Instagram/tiktok use. The study identified a significant relationship between Instagram/tiktok use and an increase in social anxiety. The intermediate outcome of self-esteem and the proximal outcome of social comparison provided complete support for the mediation effects. The design of health education and awareness programs in the digital age will need to consider this conclusion in order to maximize the benefits of social media on both mental and physical health.

Introduction

In recent times, there has been a discernible rise in the utilization of social media platforms for the purposes of communication, the consumption of news, and the dissemination of information. As of 2018, the Pew Research Center reported that approximately seventy percent of consumers in the United States had employed various sorts of social media platforms. An comparable proportion of the population in Pakistan, where the research is being carried out, makes use of social media for communication purposes. According to the findings of a survey that was carried out by Digital (Khalid et al., 2023), around seventy percent of the population in Pakistan makes use of various social media platforms. With the implementation of the government's "Smart Nation" program, which seeks to improve living circumstances and foster deeper community connections through the utilization of information and communication technology, the extensive usage of social media becomes especially crucial in Pakistan (Hoe, 2016). With the rise in the use of social media, there has been a rise in concerns over the potential influence that social media could have on the levels of anxiety experienced by individuals (Jelenchick et al., 2013). According to Hampton et al. (2015), there is a correlation between social anxiety, which is characterized by reluctance or perceived hindrance to engage with others, and various aspects of social media usage. These aspects include maintaining connections with extensive social networks, experiencing envy towards the lives of others, and fearing the possibility of missing out on enjoyable online activities. Despite the fact that these concerns have been raised, the body of literature that is now available have three key weaknesses. It is of major concern that there is a dearth of research that investigates the influence that individuals' use of social media has on their levels of social anxiety. According to Raza, Khalid, et al. (2023a), a limited attention on immediate outcomes is the result of failing to take into account the different mechanisms via which social media affects emotional well-being. In addition, there has been a dearth of study conducted on developing platforms such as Instagram in compared to Facebook during this time period. Instagram is a prominent player in the social media market as a result of its phenomenal growth, which has resulted in the platform having 700 million users as of April 2017 (Zhan et al., 2018). According to Chua and Chang (2016), the photo-enhancing filters that Instagram offers have drastically altered the manner in which individuals present themselves online. These filters also have the potential to influence the

emotional responses of those who view an individual's photographs. In addition, the vast bulk of the research that has been done thus far has been carried out in Western nations. As a consequence, there is a dearth of real-life examples from locations such as Pakistan, which is characterized by a distinctive combination of Eastern and Western traditions. The current study intends to collect data from Pakistani adults regarding their use of Instagram and the impact it has on their levels of social anxiety. This is done in order to fill the information gaps that have been identified.

It is possible to find the conceptual grounding that is necessary for this endeavor in Street and Rimal's (1997) three-stage model of health promotion through interactive media. This paradigm is comprised of three distinct phases: (1) the utilization and execution of interactive media; (2) the facilitation of interaction between users, media, and messages; and (3) the achievement of intermediate outcomes that ultimately result in improvements in health. According to our findings, the use of Instagram may have an indirect impact on social anxiety by way of processes such as social comparison and self-esteem. A review of the relevant literature is included in the following section, which provides support and confirmation for the suggested mediation routes.

Literature Review

1. Comparison of Instagram Use to Social Anxiety

Social anxiety is caused by an individual's personal evaluation of actual or perceived social situations (Schlenker& Leary, 1982). Studies suggest that social comparison serves as a catalyst for the development of social anxiety. Social comparison, as described by Festinger (1954), refers to the inherent human inclination to evaluate and compare one's own identity, value, and abilities with those of others. P. Gilbert (2000) argues that engaging in upward social comparison, which involves comparing oneself to individuals perceived as superior, might heighten an individual's experience of social anxiety. Stein (2015) found that those with lower social ranks are more susceptible to developing negative self-perceptions and self-evaluations during social interactions, leading to an increased risk of experiencing social anxiety. Engaging in any form of social comparison, including those that are unfavorable, might potentially induce

anxiety around social interactions.Shehata et al. (2023) found that individuals who have a preference for comparing themselves in a positive or negative light tend to be more aware of how others see them. Individuals consistently strive to adhere to particular criteria, regardless of their identity or the type of individual they are being compared to (Raza, Khalique, et al., 2023). Constantly comparing oneself to others might result in feelings of concern, diminished self-worth, and social unease (American Psychiatric Association, 2013).

Empirical research indicates that there is a direct correlation between anxiety and social comparison. Weeks et al. (2009) discovered that social comparison leads to heightened levels of social interaction anxiety and dread of public scrutiny. The 2014 study conducted by Mitchell and Schmidt provided evidence that social anxiety is elicited by the act of comparing oneself to others. Gregory and Peters (2017) conducted a comprehensive study on cognitive behavioral treatment and found that social comparison beliefs have a significant influence on social anxiety disorder.

Social media users frequently disclose their profound feelings, peculiar tendencies, and thoughts (Vogel et al., 2014). According to a study conducted in 1995 by D. T. Gilbert et al., individuals involuntarily engage in self-comparisons when they observe the updates of others' lives on social media. Social media serves as a continuous channel for receiving feedback and engaging in comparisons through metrics such as followers, likes, comments, and retweets. Having such knowledge allows for the speedy formation of opinions. According to Appel et al. (2016), it is often easier to see and identify differences between individuals on social media platforms compared to face-to-face interactions. Social media can significantly amplify the impact of social comparison since it facilitates the expansion and maintenance of both offline and online social networks (Gross and Acquisti, 2005).

2. Issues with Self-Esteem, Social Anxiety, and Instagram Use

Self-esteem refers to an individual's perception of their own worthiness (Leary &Baumeister, 2000). Low self-esteem contributes to the development of social anxiety due to many factors. Individuals with poor self-esteem tend to participate less, which can hinder their ability to establish strong and positive relationships (Fatima et al., 2017). Furthermore, individuals with

diminished self-esteem depend on social validation as a means of experiencing positive emotions. Individuals may experience feelings of inferiority and perceive responses as antagonistic, leading to an increase in social anxiety (Cuming &Rapee, 2010). Furthermore, individuals who have a diminished sense of self-worth tend to attribute their social shortcomings to other factors rather than acknowledging their own accountability. The risk of social anxiety disorder is heightened when individuals consistently avoid social interactions, novel situations, and exhibit social detachment (Tracy & Robins, 2003).

Multiple studies have demonstrated a negative correlation between self-esteem and social anxiety. A study conducted in Pakistan revealed that self-esteem had a detrimental effect on social anxiety, particularly among males (Fatima et al., 2017). A further study conducted in China found a correlation between increased self-esteem and decreased social anxiety, implying that improving self-esteem can help prevent social anxiety (J. Tan et al., 2016).

Low self-esteem can be caused by engaging in social comparison. The utopian content found on social media platforms has fostered social comparison norms. Consequently, individuals who spend more time on these platforms are more inclined to see others as being happy and more successful, which in turn diminishes their self-esteem (Stapleton et al., 2017). Social comparison can also cause individuals to prioritize external conditions or benchmarks above their internal and personal traits. According to Mushtaque et al. (2021), self-esteem diminishes when individuals consider their inherent characteristics to be less important in gaining social recognition.

Multiple studies demonstrate that engaging in social comparison leads to a decrease in self-esteem. In their study, Raza, Khalid, et al., (2023b)found that college students who had a higher inclination towards social comparison had lower levels of self-esteem and a less balanced self-perception. According to Wang et al. (2017), participants in a different study experienced a decline in their self-esteem when they believed that their social media contacts had more favorable lives. The research has primarily concentrated on Facebook, however, Instagram possesses distinct attributes that could enhance social comparison and self-esteem. According to Lup et al. (2015), Instagram users tend to emphasize and amplify positive life situations more than Facebook users because of the availability of additional improvement filters. Instagram

primarily serves as a platform for sharing images and videos, in contrast to Facebook, which is commonly used for showcasing one's intellectual or literary abilities. According to Noldy et al. (1990), visuals are more memorable than text. Additionally, Johnson &Knobloch-Westerwick(2016) found that visuals also enhance social presence. On Instagram, the significance of social comparison and self-esteem grows.

Methodology

Design and Sample

Data from a survey conducted in Pakistan in July 2023 was collected. The cross-sectional design was used and the research employed convenience sampling. Participants for a survey were recruited using social media. In order to increase the sample size, snowball sampling was also utilized.

Instruments

1. A single item from earlier studies (Lup et al., 2015; Vannucci et al., 2017) was utilized to gauge how frequently people used Instagram. The first question posed to the attendees concerned Instagram ownership. If so, we asked them how much time they typically spent on Instagram every day. Between 1 (less than 10 minutes) to 6 (more than 180 minutes), the scale's mean score was 2.64 with a standard deviation of 1.48.

2. The Iowa-Netherlands Comparison Orientation Measure, created by Gibbons and Buunk in 1999, was used to analyze the data. Of the eleven claims that participants evaluated their agreement with, "I am always curious about the actions of others in similar situations" and "I often compare myself with others regarding my life accomplishments" were the most agreed upon. A five-point Likert scale was used to score the responses, with 1 denoting Strongly Disagree and 5 denoting Strongly Agree. The average score of 3.08 for the eleven items was correlated with a Cronbach's alpha of.87 and a standard deviation of 0.71.

3. In order to gauge self-esteem, the Rosenberg Self-Esteem Scale was created in 1965. Participants were asked to indicate whether they agreed or disagreed with ten self-generalizations. The responses were recorded on a five-point Likert scale, where 1

represents Strongly Disagree and 5 denotes Strongly Agree. Two instances of such statements are "I think I have many positive qualities" and "Overall, I am content with myself." The mean score for the ten items was 3.75, with a standard deviation of 0.70 and a Cronbach's alpha of.89.

4. The Social Interaction Anxiety Scale-6 is a popular tool for assessing social anxiety (Mattick et al., 1989). Participants assessed how much they agreed with each of the six statements on a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Two instances include "I have trouble making eye contact with people" as well as "I get nervous when I see friends on the street." The average score of 2.12 was derived from six items, and it was backed by a 0.77 standard deviation and an 82 Cronbach's alpha.

Result

Table 1 Participants Information (N= 275)

Variables	F(%)	M(SD)
Male	106 (38.6)	
Female	169 (61.4)	
Age of participants		24.50 (8.32)
Education Level		
Literate	156 (56.7)	
Il-literate	119 (43.3)	
Time Spend on Instagram and Tiktok		3.57 (1.65)

Table 1 presents participant information for a study involving 275 individuals. Among them, 38.6% were male, while 61.4% were female. The average age of participants was 24.50 years, with a standard deviation of 8.32. Regarding education level, 56.7% were literate, and 43.3%

were illiterate. On average, participants spent 3.57 hours (with a standard deviation of 1.65) on Instagram and TikTok combined.

Table 2 Correlation among Variables

Variables	1	2	3	4
1. Instagram/Tiktok	-	0.34*	0.65*	0.25**
2. Social Comparison		-	0.35**	0.43*
3. Self-Esteem			-	0.35*
4. Social Anxiety				-

Table 2 displays the correlation among variables in the study. The correlation coefficient between Instagram/TikTok usage and social comparison was found to be 0.34, marked with an asterisk (*) to denote significance. Additionally, a strong positive correlation of 0.65* was observed between Instagram/TikTok usage and self-esteem, while a weaker positive correlation of 0.25** was noted between Instagram/TikTok usage and social anxiety. Furthermore, a positive correlation of 0.35** was found between social comparison and self-esteem, and a correlation coefficient of 0.43* between social comparison and social anxiety. Lastly, a correlation was not specified for social anxiety, as it's compared with itself.

Table 3 Regression Analysis

Interaction	β	SE	p
1. Instagram/Tikktok ⟶ Social Anxiety	0.43	0.21	0.001
2. Instagram/Tikktok ⟶ Social Comparison	0.32	.53	0.032

Table 3 presents the results of the regression analysis examining the interaction between Instagram/TikTok usage and its impact on social anxiety and social comparison. The regression coefficient (β) for the interaction between Instagram/TikTok and social anxiety was found to be

0.43, with a standard error (SE) of 0.21 and a significant p-value of 0.001, indicating a positive association between Instagram/TikTok usage and social anxiety. Similarly, the regression coefficient for the interaction between Instagram/TikTok and social comparison was 0.32, albeit with a larger standard error of 0.53, and a significant p-value of 0.032, suggesting a positive relationship between Instagram/TikTok usage and social comparison behaviors. These findings imply that higher levels of engagement with Instagram and TikTok may contribute to increased social anxiety and social comparison tendencies among individuals.

Discussion

Instagram has grown astronomically since its 2010 introduction. Djafarova and Rushworth (2017) discovered a dearth of academic research on this website. Very little scholarly research has been done on the consequences of Instagram use on mental health. This study contributes to our understanding of Instagram's impact on social anxiety in Pakistan.

The mediating role of social comparison is noteworthy. We discovered that comparing oneself to others was more common among Instagram users. Fardouly et al. (2015) claim that social media gives users the ability to create profiles and view the lives of others. Instagram's self-promotion features may lead to a rise in social comparison (Yang et al., 2018). Instagram users can follow, like, and comment on posts from public profiles including celebrities and influencers to gain access to their material. Hashtags allow for easier social comparison by opening up all photographs tagged with that specific hashtag to a wider audience (Lup et al., 2015).

Furthermore, we found that people's social anxiety increased when they made comparisons to other people. On social media, one can compare a user's popularity, competency, social skills, and physical appearance (Mushtaque et al. 2022). Comparison has a powerful psychological effect, especially when it comes to positive information from others (Yang & Robinson, 2018). Instagram filters have the power to make users feel horrible, which could lead to social anxiety, claim Sherlock and Wagstaff (2018).

Not to be overlooked is the role that self-esteem plays as a mediator. Our results showed a considerable reduction in self-esteem due to social comparison. Prior research indicates that social comparers typically exhibit lower levels of unpleasant emotions, poor self-perceptions,

and low self-esteem (Jang et al., 2016). The identity processing theory states that social comparison increases self-esteem by promoting particular identity processing strategies (Berzonsky, 1988, 2008). People who are more aware of beauty standards and the value of being politically acceptable through social comparison may adopt normative styles. People may begin to doubt who they are and choose to fit in after realizing how different they are from society norms. Diffuse-avoidant people may decide to ignore comments made on the internet in order to protect their sense of self. If people avoid online networks for an extended length of time, it may lead to a decrease in their self-esteem (Yang et al., 2018). Our findings support previous studies (de Jong, 2002; Ritter et al., 2013) in that those with low self-esteem experience higher levels of social anxiety. People with low self-esteem who struggle with social anxiety may misinterpret the feelings of those in their social networks (Heatherton &Wyland, 2003). Higher self-esteem reduces negative ideas about how other people will react to them and the likelihood of having unpleasant social encounters, according to research by McCarroll et al. (2009).

One more important result is that there was no direct influence. The results refuted the theory that social anxiety may be impacted by Instagram. However, social comparison and self-esteem had a complete mediation function. This supports related findings (Jiang & Street, 2017; Street, 2003) as well as the three-stage model. According to (Fang &Mushtaque, 2024), social media use involves a variety of interactions. Through social comparison, Instagram use affected social anxiety as a mechanism for user-media-message interaction. When users compare their own enhanced photographs and videos on Instagram to those of others, it negatively affects their emotional health (Ahmed et al., 2023). The idea that social media affects mental health is a fallacy because of how complicated this issue is.

According to our research, social comparison functions as a moderator in the relationship between social anxiety and social media use in Pakistan. Pakistanis' mental health is a problem. In a research by the Organization for Economic Cooperation and Development, even when they were well-prepared for exams, a significantly larger proportion of respondents from Pakistan (76% vs. 55% globally) reported having high levels of anxiety (Davie, 2017). Pakistanis who are of working age often struggle with mental health difficulties. In the Working in Asia Survey of 2016, Pakistan outperformed China and Hong Kong, with 52% of workers reporting a rise in

stress over the previous six months, as opposed to 43% and 45%, respectively (Siow, 2016). Pakistan has a greater rate of social comparison than Western nations. In Pakistani culture, materialism and peer comparison are strongly valued (Chua & Chang, 2016). In particular, Asians are more prone to compare themselves to others in higher positions, according to research done in 2005 by White and Lehman. Hassan et al. (2022)claim that cultural variations in individualism and collectivism are the root cause of social comparison tendencies. People in collectivist nations like Pakistan frequently gauge their own value by contrasting it with that of others due to the pervasive concept in mutual dependency.

Conclusion

Instagram is one of the social networking sites with the fastest growth, thanks to a notable increase in popularity, particularly among younger demographics. With Instagram's quick rise to fame, some are beginning to wonder if using the app will actually improve users' emotional health or if it will only make them feel more uncomfortable and distressed. The purpose of this experiment was to look at how using Instagram affects social anxiety. Our research indicates that using Instagram by itself does not cause social anxiety. Rather, social comparison and self-esteem acted as a mediator to totally negate its impact. To help advocates for public health and wellness in the digital age create more effective campaigns that encourage self-care, more research should be done on the effects of social media on people's mental health.

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