

Impact of Instagram Usage on Adolescents' Self-Esteem; A Cross-Sectional Study

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Abstract: Social media has become an integral part of adolescents' daily lives, with Instagram emerging as one of the most widely used social networking platforms. Although Instagram provides opportunities for communication, social interaction, and self-expression, concerns have been raised regarding its potential influence on adolescents' psychological well-being, particularly self-esteem. The present study examined the predictive role of Instagram usage in self-esteem among adolescents. A cross-sectional research approach employing a correlational research design was adopted. The sample consisted of 200 adolescents aged 13–18 years selected through purposive sampling from senior secondary schools in Gogunda, Udaipur District, Rajasthan. Instagram usage was assessed using the Bergen Facebook Addiction Scale adapted for Instagram usage, while self-esteem was measured using the Rosenberg Self-Esteem Scale. The data was analyzed using JASP (Version 0.19.3). The findings revealed a significant negative relationship between Instagram usage and self-esteem ($r = -.573$, $p < .001$). Linear regression analysis indicated that Instagram usage significantly accounting 32.9% variance in prediction of self-esteem ($R^2 = .329$, $\beta = -.573$, $t = -9.846$, $p < .001$). The findings concludes that Instagram usage is a significant predictor of self-esteem. These findings suggest the importance of promoting healthy social media practices among adolescents and increasing awareness among parents, educators, and mental health professionals regarding the influence of social media on adolescent psychological well-being.

Keywords: *Adolescents, Instagram Usage, Self-esteem, Social Media, Psychological Well-being, Social Networking Platforms.*

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I. Introduction

Adolescence is an important developmental period marked by significant physical, emotional, cognitive, and social changes. During this stage, individuals develop their identity, self-concept, and sense of self-worth. Self-esteem, defined as an individual's overall evaluation of personal worth and competence, plays an important role in psychological adjustment and well-being. Research has consistently shown that adolescents with higher self-esteem demonstrate better emotional health, social competence, and academic adjustment, whereas low self-esteem has been associated with depression, anxiety, social withdrawal, and behavioral difficulties (Orth & Robins, 2022).

The widespread availability of smartphones and internet connectivity has substantially increased adolescents' engagement with social media platforms. Among these platforms, Instagram has emerged as one of the most popular applications because of its emphasis on photographs, videos, stories, and reels. Unlike text-based social networking sites, Instagram primarily focuses on visual self-presentation and social interaction through likes, comments, and follower counts. These features provide opportunities for communication and self-expression but may also increase adolescents' exposure to social comparison and external validation (Valkenburg et al., 2022).

Recent studies have reported that greater engagement with image-based social media platforms is associated

with lower self-esteem, body dissatisfaction, and poorer psychological well-being among adolescents and young adults (Taylor et al., 2024; Varaona et al., 2024). Similarly, Colak et al. (2023) found that problematic social media use was significantly associated with lower self-esteem among adolescents. Despite growing research in this area, findings remain inconsistent. While several studies have reported negative associations between social media use and self-esteem, others have suggested that social media may facilitate social connectedness, peer support, and positive self-expression when used appropriately (Odgers & Jensen, 2020). Furthermore, much of the existing literature has focused on general social media use rather than Instagram specifically. Research examining the impact of Instagram usage on self-esteem among Indian adolescents remains limited, despite the increasing popularity of the platform among this population.

Considering the growing use of Instagram among adolescents and the limited evidence available in the Indian context, the present study was undertaken to examine the impact of Instagram usage on self-esteem among adolescents. Although various studies / researches have examined the relationship between social media use and self-esteem, several gaps remain in the existing literature. First, much of the available evidence has focused on social media use as a broad construct rather than examining Instagram specifically, despite its distinctive emphasis on visual self-

presentation, appearance-based feedback, and social comparison (Valkenburg et al., 2022; Varaona et al., 2024). Second, findings regarding the association between social media use and self-esteem remain inconsistent. While several studies have reported that greater social media engagement is associated with lower self-esteem and poorer psychological well-being (Colak et al., 2023; Taylor et al., 2024), other researchers have suggested that social media may also facilitate social connectedness, self-expression, and peer support under certain conditions (Odgers & Jensen, 2020; Valkenburg et al., 2022). Third, empirical evidence focusing specifically on Indian adolescents remains limited, particularly among school going adolescents from semi-urban and rural settings. Given the increasing popularity of Instagram among Indian youth and the mixed findings reported in previous research, further investigation is warranted. Therefore, the present study was undertaken to examine the predictive role of Instagram usage in self-esteem among adolescents.

II. Objectives

1. To study and measure the Instagram Usage among Adolescents.
2. To study the measure the Self-Esteem among Adolescents.
3. To study the impact of Instagram Usage on Self-Esteem among adolescents.

III. Methods

Participants and Sampling

The study was conducted among adolescents enrolled in senior secondary schools located in Gogunda, Udaipur District, Rajasthan, India. A total of 200 adolescents participated in the study. Participants were selected using purposive sampling, with selection based on their use of Instagram. The sample comprised adolescents aged 13 to 18 years who met the predefined inclusion criteria.

Inclusion and Exclusion Criteria

Inclusion Criteria:

1. Adolescents within the age range of 13–18 years.
2. Adolescents studying in government or private schools.

Exclusion Criteria:

1. Adolescents who fall under CWSN (Child with Special Need) in various categories.
2. Adolescents with any clinical physical or mental health conditions.

IV. Research Design

A correlational research design was employed to examine the relationship between Instagram usage and self-esteem among adolescents and to determine the predictive role of Instagram usage in self-esteem.

Measures

- The Bergen Facebook Addiction Scale (BFAS) was used to measure Instagram Usage.

- Rosenberg Self-Esteem Scale (RSE) developed by Rosenberg, (1979) was used to measure self-esteem.

V. Procedure and Statistical Analysis

Prior permission was obtained from the concerned school authorities before data collection. Participants who met the inclusion criteria were approached and informed about the purpose of the study. After obtaining their consent, the Bergen Facebook Addiction Scale (adapted for Instagram usage) and the Rosenberg Self-Esteem Scale were administered to the participants. The collected data were screened, coded, and entered for statistical analysis.

Data were analyzed using the Open-source Statistical Software JASP (Version 0.19.3). Descriptive statistics, including mean, standard deviation, minimum, and maximum scores, were computed to assess the levels of Instagram usage and self-esteem among adolescents. Pearson's product-moment correlation analysis was performed to examine the relationship between Instagram usage and self-esteem. Further, linear regression analysis was conducted to determine the predictive role of Instagram usage in self-esteem among adolescents. Statistical significance was determined at the .05 and .01 levels of significance.

VI. Results

The present study examined the predictive role of Instagram usage in self-esteem among adolescents. Descriptive statistics, Pearson's correlation analysis, and linear regression analysis were performed to address the study objectives. The results are presented below.

Result Table 1
Summary of Descriptive Analysis

	IU	SE
Valid	200	200
Missing	0	0
Mean	10.930	17.150
SD		4.075
Minimum		4.000
Maximum		20.000

Note- * Significant at .01 level, **Significant at .05 level.

Table 1 presents the descriptive statistics for Instagram Usage (IU), Social Comparison (SC), and Self-Esteem (SE) among the adolescents included in the study. The analysis was based on a total sample of 200 participants, and no missing data were reported for any of the study variables, indicating complete responses from all participants. The findings revealed that the mean score for Instagram Usage was 10.93 (SD = 4.08), suggesting a moderate level of Instagram engagement among the participants. The mean Self-Esteem score was found to be 17.15 (SD = 6.40), reflecting differences in perceived self-worth among the participants.

Result Table 2

Summary of Correlation Analysis

Variable		IU	SE
IU	Pearson's r	-	
	p-value	-	
	Effect size (Fisher's z)	-	
	SE Effect size	-	
SE	Pearson's r	-0.573	-
	p-value	< .001	-
	Effect size (Fisher's z)	-0.652	-
	SE Effect size	0.071	-

Table 2 presents the results of the Pearson's product-moment correlation analysis conducted to examine the relationship between Instagram Usage (IU) and Self-Esteem (SE) among adolescents. The findings revealed a statistically significant negative correlation between Instagram Usage and Self-Esteem ($r = -0.573$, $p < .001$). The negative direction of the correlation indicates that higher levels of Instagram usage were associated with lower levels of self-esteem among the participants. Therefore, the results support the assumption that Instagram usage is significantly related to self-esteem and provide a basis for further examination through regression analysis.

Result Table 3

Summary of Linear Regression Analysis

Model	R	R ²	Adjusted R ²	RMSE
M ₀	0.000	0.000	0.000	6.403
M ₁	0.573	0.329	0.325	5.259

Note. M₁ includes IU

ANOVA

Model		Sum of Squares	df	Mean Square	F	p
M ₁	Regr.	2681.356	1	2681.356	96.949	< .001
	Resid.	5476.144	98	27.657		
	Total	8157.500	99			

Regr.: Regression Resid.: Residual

Note. M₁ includes IU

Note. The intercept model is omitted, as no meaningful information can be shown.

Coefficients

Model		Unstd.	Std. Error	Std.	t	p
M ₀	(Intercept)	17.150	0.453		37.881	< .001
M ₁	(Intercept)	26.995	1.067		25.305	< .001
	IU	-0.901	0.091	-0.573	-9.846	< .001

Unstd.: Unstandardized Std.: Standardized

Table 3 presents the results of the linear regression analysis conducted to examine the predictive role of Instagram Usage (IU) in Self-Esteem (SE) among adolescents. The model summary revealed a correlation coefficient (R) of .573, indicating a moderate relationship between the observed and predicted values of self-esteem. The coefficient of determination ($R^2 = .329$) showed that Instagram Usage explained 32.9% of the total variance in Self-

Esteem scores. The adjusted R^2 value of .325 further indicated that the model retained substantial explanatory power even after adjusting for sample size and the number of predictors included in the model. The significance of the regression model was evaluated using analysis of variance (ANOVA). The findings demonstrated that the overall regression model was statistically significant, $F(1, 198) = 96.949$, $p < .001$. This result indicates that Instagram Usage significantly contributed to the prediction of Self-Esteem and that the regression model provided a significantly better fit than a model without the predictor variable.

The coefficient estimates further revealed that Instagram Usage was a significant predictor of Self-Esteem among adolescents. The unstandardized regression coefficient for Instagram Usage indicating that for every one-unit increase in Instagram Usage, Self-Esteem decreased by approximately 0.90 units ($B = -0.901$, $SE = 0.091$). The standardized regression coefficient confirmed the statistical significance of this relationship ($\beta = -0.573$, $t = -9.846$, $p < .001$). The negative beta coefficient suggests an inverse association between the two variables, indicating that higher levels of Instagram Usage were associated with lower levels of Self-Esteem among adolescents.

Overall, the findings of the regression analysis demonstrate that Instagram Usage emerged as a significant negative predictor of Self-Esteem. These findings provide empirical support for the study objective concerning the predictive role of Instagram Usage in Self-Esteem among adolescents.

VII. Discussion

The present study examined the predictive role of Instagram usage in self-esteem among adolescents. The findings revealed a significant negative relationship between Instagram usage and self-esteem ($r = -.573$, $p < .001$). Furthermore, linear regression analysis demonstrated that Instagram usage significantly predicted self-esteem, accounting for 32.9% of the variance in self-esteem scores ($R^2 = .329$, $\beta = -.573$, $p < .001$). These findings suggest that adolescents who reported higher levels of Instagram usage tended to report lower levels of self-esteem. The descriptive analysis indicated variability in Instagram usage and self-esteem among the participants.

Adolescence is a developmental period during which self-esteem is particularly sensitive to social evaluation, peer approval, and identity formation. As social interactions increasingly occur in digital environments, social media platforms have become important contexts influencing adolescents' perceptions of themselves and others. Research suggests that adolescents frequently use social networking platforms to seek social connection, self-expression, and validation from peers, making them particularly vulnerable to the psychological consequences of online interactions (Odgers & Jensen, 2020).

One of the major findings of the present study was the significant negative correlation between Instagram usage and self-esteem. This finding indicates that adolescents with higher levels of Instagram engagement tend to experience lower levels of self-worth and self-evaluation. The result is consistent with Social Comparison Theory (Festinger, 1954), which proposes that individuals evaluate themselves through comparisons with others. Instagram is primarily a visual platform where users are continuously exposed to carefully curated images, edited photographs, and idealized portrayals of appearance, lifestyle, and success. Such exposure may encourage upward social comparisons, leading adolescents to perceive themselves as less attractive, less successful, or less socially desirable than others. Consequently, repeated exposure to idealized content may contribute to reduced self-esteem.

The present findings are consistent with those reported by Colak et al. (2023), who found a significant negative relationship between social media addiction and self-esteem among adolescents. Their study further demonstrated that social media addiction negatively predicted self-esteem and that body image partially mediated this relationship. The authors concluded that excessive social media engagement may adversely influence adolescents' perceptions of themselves and their bodies, ultimately reducing self-esteem.

The observed negative association may also be explained by the unique features of Instagram. Unlike many other social networking platforms, Instagram places considerable emphasis on appearance-based content and public indicators of social approval, such as likes, comments, and follower counts. Adolescents often evaluate their social standing through these visible metrics, which may contribute to dependence on external validation. When expectations regarding online approval are not met, feelings of inadequacy, rejection, or dissatisfaction may emerge, negatively affecting self-esteem. Additionally, adolescents who spend substantial time viewing idealized content may internalize unrealistic standards of appearance and social success, further increasing the likelihood of negative self-evaluations. The regression findings provide additional support for the importance of Instagram usage in understanding adolescent self-esteem. The regression model explained 32.9% of the variance in self-esteem, indicating that Instagram usage represents a meaningful factor associated with adolescents' perceptions of self-worth. Although self-esteem is influenced by numerous variables, including family environment, peer relationships, academic achievement, personality characteristics, and socio-economic factors, the present findings suggest that Instagram usage contributes substantially to variations in self-esteem among adolescents. The significant negative beta coefficient further indicates that increases in Instagram usage were associated with decreases in self-esteem scores.

The findings of the present study are also in line with broader evidence indicating that problematic social media engagement is associated with poorer psychological outcomes among adolescents. Odgers and Jensen (2020) noted that while digital technologies offer opportunities for communication and social connection, concerns regarding excessive use, social comparison, and emotional vulnerability among adolescents continue to warrant scientific attention. The present findings contribute to this growing body of evidence by demonstrating a significant association between Instagram usage and self-esteem within an Indian adolescent sample. However, the findings should be interpreted with caution. Although Instagram usage significantly predicted self-esteem, the cross-sectional nature of the study does not permit causal conclusions. It cannot be determined whether increased Instagram usage contributes to lower self-esteem or whether adolescents with lower self-esteem are more likely to engage excessively with Instagram. Previous researchers have similarly emphasized the need for longitudinal investigations to better understand the directionality of these relationships.

Despite this limitation, the present study offers important practical implications. The findings highlight the need for parents, educators, school counselors, and mental health professionals to promote healthy social media habits among adolescents. Educational programs focusing on digital literacy, critical evaluation of online content, and awareness regarding social comparison processes may help adolescents develop healthier relationships with social media platforms. Encouraging balanced social media use and strengthening adolescents' self-worth through supportive family and school environments may also reduce the potential negative effects associated with excessive Instagram engagement. Overall, the study contributes to the growing literature examining the psychological implications of social media use and provides evidence regarding the predictive role of Instagram usage in self-esteem among Indian adolescents.

VIII. Conclusion

The present study examined the predictive role of Instagram usage in self-esteem among adolescents. The findings revealed a significant negative relationship between Instagram usage and self-esteem, indicating that adolescents with higher levels of Instagram usage tended to report lower levels of self-esteem. Furthermore, Instagram usage emerged as a significant predictor of self-esteem, accounting for a substantial proportion of the variance in self-esteem scores. These findings suggest that Instagram usage is an important factor associated with adolescents' perceptions of self-worth and self-evaluation. The results support growing evidence that excessive engagement with image based social networking platforms may be associated with adverse psychological outcomes among adolescents. Given the

increasing popularity of Instagram among young people, the findings underscore the importance of promoting healthy and balanced social media use.

IX. Limitations of the Study

The study employed a cross-sectional research design, which limits the ability to establish causal relationships between Instagram usage and self-esteem. Additionally, data was collected through self-report measures, which may be influenced by social desirability and response biases. Moreover, the sample was restricted to adolescents from schools located in Gogunda, Udaipur District, Rajasthan, limiting the generalizability of the findings to other populations. Furthermore, the study focused only on Instagram usage and did not consider other social media platforms (Facebook, X etc), that may also influence self-esteem.

Future research should use longitudinal designs and larger, more diverse samples to gain a deeper understanding of the relationship between Instagram usage and self-esteem.

X. Implications of the Study

- 1. Educational Implications:** The findings highlight the need for schools to promote digital literacy and responsible social media use among adolescents. Awareness programs may help students understand the potential effects of excessive Instagram usage on their self-esteem and overall well-being.
- 2. Psychological Implications:** The study emphasizes the importance of monitoring adolescents' social media engagement as part of mental health assessment and intervention. Mental health professionals may incorporate discussions regarding social media use while addressing self-esteem-related concerns among adolescents.
- 3. Practical Implications:** Parents, teachers, and caregivers should encourage balanced social media use and foster supportive environments that strengthen adolescents' self-worth beyond online validation. Promoting healthy offline relationships and activities may help mitigate the negative effects associated with excessive Instagram usage.

XI. Ethical Considerations

Prior permission was obtained from the concerned school authorities before data collection. Participants were informed about the purpose of the study, and participation was voluntary. Confidentiality and anonymity of the participants were maintained throughout the study.

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