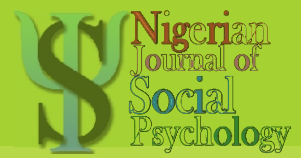


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Moderating Role of Gender in the Relationship among Social Media Use, Body Image Perception and Self-Esteem of In-School Adolescents in Abeokuta

*Morenikeji R. AKINYEDE¹

Abel C. OBOSI¹,

¹Department of Psychology,
University of Ibadan, Ibadan, Nigeria

*Corresponding author: Akinyede R. Morenikeji, Department of Psychology, University of Ibadan, Ibadan, Nigeria, Tel: 07017732446, E-mail: morenikejiakinyede404@gmail.com

Abstract

The increasing prevalence of social media use among adolescents has raised concerns about its potential impact on self-esteem and body image perception. This study investigated the relationship between social media use, body image perception, and self-esteem, alongside the moderating role of gender among in-school adolescents in Abeokuta, Ogun State, Nigeria. A cross-sectional design was employed, involving 431 adolescents aged 10–19 years. Data were collected using the Social Media Use Scale, Body Self-Image Questionnaire–Short Form (BSIQ-SF), and Rosenberg Self-Esteem Scale. Analyses included Pearson correlation, multiple regression, and PROCESS Macro 4.2, with a significance level set at 0.05. Findings revealed a significant negative relationship between social media use and self-esteem ($r = -0.12$, $p < .05$). Conversely, a significant positive relationship was found between social media use and body image perception ($r = .27$, $p < .01$). However, body image perception was not significantly related to self-esteem ($r = .01$, $p > .05$). Results also showed that only social media use significantly predicted self-esteem ($\beta = -0.14$, $p < .05$), while body image perception ($\beta = 0.04$, $p > .05$) and gender ($\beta = -0.02$, $p > .05$) did not. Additionally, gender did not moderate the relationship between social media use and self-esteem ($B = -0.005$, $p > .05$), nor between body image perception and self-esteem ($B = -0.008$, $p > .05$). The study concludes that while social media use negatively influences self-esteem, body image perception and gender do not play significant predictive or moderating roles. It recommends awareness programmes promoting responsible digital use and psychological interventions to support adolescent self-esteem.

Keywords: Social Media Use, Body Image Perception, Self-Esteem, Adolescents, Gender

Introduction

Self-esteem, often described as an individual's overall evaluation of their worth, plays a pivotal role in psychological well-being. It influences not only how people view themselves but also how they engage with others and navigate life's challenges. Comprising both a sense of self-competence and social acceptance, self-esteem underpins emotional resilience, motivation, and relationship satisfaction. According to Orth and Robins (2022), self-esteem encompasses both cognitive assessments and emotional experiences, including pride, shame, and triumph. Rosenberg (1965), a seminal figure in self-esteem theory, defined it as a positive or negative attitude toward the self, highlighting its dual nature. Self-esteem exists along a continuum—from high levels signifying confidence and adaptability to low levels reflecting insecurity and self-doubt, often with far-reaching consequences for social and emotional functioning. Several factors shape its development from early childhood, including parental support, peer relationships, and broader cultural expectations (Omoponle, 2023; Muhwezi & Kiyangi, 2025). High self-esteem has been associated with emotional stability, goal-directed behaviour, and healthy interpersonal bonds (Odimegwu, 2023), whereas

excessively elevated self-esteem may manifest as narcissism, arrogance, and resistance to feedback (Chukwuorji et al., 2020; Chado & Garba, 2024). Conversely, low self-esteem is a known risk factor for a host of difficulties such as anxiety, depression, and diminished academic or occupational achievement, particularly among adolescents (Mfoafo-M'Carthy & Grischow, 2021).

Adolescence, defined by the World Health Organisation (2022) as the period between ages 10 and 19, represents a developmental window marked by profound physical, emotional, cognitive, and social changes (Aruoture & Adegoke, 2024). During this time, ongoing brain development—particularly in areas involved in emotional regulation and executive functioning—makes adolescents more vulnerable to psychological distress (Lowe, Morton, & Reichelt, 2020). For individuals grappling with low self-esteem, this heightened neuroplasticity can exacerbate emotional instability and identity confusion, leading to behaviours such as social withdrawal, overconformity, or self-sabotage (Ibigbami et al., 2023). Central to adolescence is the task of identity formation—a psychosocial milestone emphasized in Erikson's theory of development, which posits that adolescents must resolve the conflict between identity and role confusion. Success fosters a coherent sense of self, while failure often results in emotional dissonance and uncertainty about one's role in society (Adebo & Hamsan, 2024; Omoponle, 2023). Peer acceptance and the pursuit of social approval play dominant roles in this process, which can have either protective or detrimental effects on adolescent well-being, depending on the nature of social interactions (Oluremi, 2023).

In the digital age, social media has become a dominant force shaping adolescents' experiences and self-perceptions. Platforms such as Instagram, TikTok, and Snapchat not only offer tools for creativity and self-expression but also function as spaces where social capital is accumulated and self-worth is negotiated (Ugwu et al., 2023; Balogun & Aruoture, 2024). Although these platforms can promote social connectivity, they also expose adolescents to idealised images and cultural standards that may conflict with their developing identities. Prolonged use of smartphones and social media has been linked with mental health challenges, including anxiety, depression, and compulsive use patterns (Obosi & Busari, 2019). Furthermore, adolescents are often pressured to curate their online presence in ways that attract “likes,” comments, and followers—metrics that are frequently perceived as direct reflections of popularity or personal value. This reliance on digital validation amplifies the risk of internalising unrealistic beauty standards and social comparisons, contributing to body dissatisfaction and reduced self-esteem.

The relationship between social media exposure and self-concept is particularly salient in the context of body image. Numerous adolescents engage in appearance-based comparisons with peers and online influencers, which often results in feelings of inadequacy and negative self-assessment (Nnamchi et al., 2024). These comparisons are not merely superficial; they affect core aspects of self-worth, especially in school environments where peer interactions and social media use are intricately woven into daily routines. Despite a growing body of international literature on this topic, many studies in Nigeria have focused predominantly on young adults, leaving a critical knowledge gap regarding adolescents, a population that is often more impressionable and socially dependent. Additionally, the moderating role of gender in the relationship between social media use and self-esteem remains underexplored in Nigerian contexts. While global research increasingly highlights how boys and girls experience social media differently, many local studies, such as that of Adedeji et al. (2021), have tended to treat adolescents as a homogeneous group. This approach risks overlooking

key variations in how gendered expectations and online experiences shape self-perception. Consequently, this study seeks to fill that gap by investigating how gender moderates the relationship between social media use, body image perception, and self-esteem among in-school adolescents in Nigeria.

While social media provides platforms for creative expression and peer interaction, its influence on adolescent self-concept remains multifaceted and, at times, detrimental. Emerging research highlights that frequent exposure to idealised images and curated lifestyles on digital platforms often fosters unfavourable social comparisons, which can undermine adolescents' self-esteem (Awopetu et al., 2024; Habeeb & Odutayo, 2024). For instance, adolescent girls who consistently engage with content showcasing seemingly flawless beauty standards may develop body dissatisfaction, which can manifest in harmful behaviours such as restrictive dieting or excessive photo editing. Likewise, adolescent boys exposed to hypermasculine ideals may resort to extreme workout regimens, potentially neglecting their mental and emotional well-being (Wadi et al., 2024; Abamara et al., 2022).

A growing body of Nigerian scholarship supports these findings, pointing to a significant relationship between social media use, body image perception, and self-esteem among young people. Nnamchi et al. (2024) identified body image perception as a significant predictor of self-esteem among Nigerian undergraduates. Similarly, studies by Adebola (2024) and Olatona et al. (2024) documented widespread body dissatisfaction among Nigerian youth, driven largely by cultural ideals and media portrayals. However, the majority of these investigations have focused primarily on young adults, leaving a critical gap in our understanding of how these dynamics affect adolescents, an age group that is particularly vulnerable to social influence and identity challenges. Furthermore, while global literature has increasingly explored gender as a moderating factor in the relationship between social media use and self-esteem, such distinctions remain underexplored within the Nigerian context. Existing studies, such as that by Adedeji et al. (2021), often treat adolescents as a homogenous group, thereby neglecting the nuanced ways in which gender may shape individual responses to social media content. Addressing this limitation, the present study aims to investigate gender as a potential moderator in the interplay between social media use, body image perception, and self-esteem among Nigerian adolescents.

Accordingly, this study hypothesises that there is a significant positive relationship between social media use, body image perception, and self-esteem among in-school adolescents. It also posits that social media use and body image perception will independently and jointly predict self-esteem. Furthermore, the study examines whether gender moderates these relationships. Finally, it explores potential gender differences in self-esteem among senior secondary school students.

Theoretical Review

Social Comparison Theory

Social Comparison Theory (SCT), first articulated by Leon Festinger in 1954, posits that individuals have an innate inclination to assess their own beliefs, capabilities, and self-worth by juxtaposing themselves against others. Festinger, renowned for his contributions to cognitive dissonance, argued that people rely on external benchmarks such as the appearance, achievements, or behaviours of others to gauge their standing and identity (Suls & Wills, 2024). These comparisons serve as a mechanism for self-evaluation, enabling individuals to

measure their progress, establish their social position, and refine their sense of self. SCT provides a vital lens for examining the interplay between social media use, body image perception, and self-esteem among in-school adolescents. Young people frequently engage in social comparisons, either upward (comparing themselves to those perceived as superior, such as influencers showcasing idealised beauty) or downward (comparing themselves to those deemed less successful). Such comparisons, particularly on social media platforms, profoundly shape adolescents' self-perceptions and emotional well-being (Burnell, 2020). Upward comparisons, where adolescents measure themselves against seemingly flawless images, often lead to dissatisfaction with one's body and diminished self-esteem, driven by the pervasive influence of unrealistic beauty ideals online (Merino et al., 2024). In contrast, downward comparisons may temporarily bolster self-esteem but rarely foster sustained body positivity or self-acceptance.

Gender plays a pivotal role in these dynamics, as male and female adolescents respond differently to social comparisons. For example, young women are more likely to internalise portrayals of slender, idealised figures, resulting in heightened body dissatisfaction, whereas young men may aspire to muscular ideals, influencing their self-worth and behaviours (Ogundele et al., 2023). These gender-specific responses underscore the importance of SCT in understanding how social media-driven comparisons affect adolescents' perceptions of their bodies and overall self-esteem. By exploring these gendered patterns, this study aims to inform interventions that promote healthier self-evaluation and enhance media literacy among adolescents.

Participants and Procedure

This study utilised a cross-sectional research design to examine the moderating role of gender in the relationship between social media use, body image perception, and self-esteem among in-school adolescents in Abeokuta Metropolis. The research aimed to explore how the frequency, type, and content of social media engagement, along with gender differences, influence adolescents' perceptions of their physical appearance and overall self-worth. Participants in this study were 431 in-school adolescents (186 males = 43.2%, 245 females = 56.8%) recruited from four selected secondary schools within the Abeokuta Metropolis, Ogun State, Nigeria. The schools included two public institutions—Premier Grammar School and Lafenwa High School—and two private institutions—Leadway Model College and Comprehensive Academy. All participants were students in Senior Secondary School classes (SSS1 to SSS3), with ages ranging from approximately 14 to 19 years. The inclusion criteria required that participants must (i) be enrolled in SSS1 to SSS3, (ii) currently attend one of the selected schools in Abeokuta Metropolis, (iii) be willing to participate and have a signed parental consent form, and (iv) be able to read and understand English. Students who did not meet these criteria were excluded from the study.

A purposive sampling technique was adopted to ensure that only students who met these criteria were included in the study. The sample size was determined using the Taro Yamane formula (Yamane, 1973) at a 95% confidence level. Based on a student population of 19,152 across public and private secondary schools in Abeokuta North Local Government, a minimum of 392 participants was calculated. To accommodate possible non-responses and incomplete questionnaires, 10% of the sample size was added, bringing the final sample size to 431. Prior to data collection, ethical approval was obtained from the Ogun State Ministry of Education (PL.545/IV^T/32). Permission was also secured from the selected schools' principals. Data collection was conducted in February 2025, during school break periods to

avoid disrupting academic activities. The researcher, along with three trained research assistants, visited each school on pre-arranged dates. The research assistants, who were postgraduate students with experience in psychological fieldwork, were briefed on the objectives of the study, questionnaire administration.

Instruments

Socio-demographic item, which requires the participant to give a response to. Socio-demographic variables such as age, sex, religion, student class level, parent educational level, parent occupation, who are you living with, etc.

The Social Media Use Scale (SMUS), developed by Tuck and Thompson (2024), was created to provide a more nuanced measure of social media engagement beyond general metrics like time spent. It comprises 17 items rated on a nine-point Likert scale, assessing frequency of specific activities over the past seven days, ranging from "Never" to "Hourly or more." The SMUS captures four distinct types of social media use through subscales: Image-based (items 1–5), Comparison-based (items 6–8), Belief-based (items 9–12), and Consumption-based (items 13–17). Scores are calculated by averaging responses within each subscale. This detailed structure allows for a deeper understanding of individual social media habits across platforms. The scale has demonstrated strong reliability, with Cronbach's alpha values of .86 (Image-based), .77 (Comparison-based), .78 (Belief-based), and .80 (Consumption-based), indicating acceptable internal consistency. In the present study, the overall reliability of the SMUS was $\alpha = .84$, confirming its robustness as a tool for assessing diverse patterns of social media engagement.

The Body Self-Image Questionnaire-Short Form (BSIQ-SF), developed by David Rowe in 2005, is a concise tool designed to assess individuals' perceptions and evaluations of their physical appearance. Comprising 27 items across nine subscales, it captures both cognitive and emotional aspects of body image, including concerns about weight, shape, grooming, and social influence. Each subscale (e.g., Overall Appearance Evaluation, Health Fitness Influence, Fatness Evaluation) includes three items rated on a 5-point scale, with one item reverse-scored. The BSIQ-SF demonstrates strong reliability with a Cronbach's alpha of 0.87, making it a valid and efficient measure for assessing both positive and negative body image, particularly among adolescents. The scale demonstrated strong internal consistency for this study, with an overall Cronbach's alpha of $\alpha = .85$.

The Rosenberg Self-Esteem Scale (RSES), developed by Dr. Morris Rosenberg in 1965, is a widely used 10-item instrument for assessing global self-esteem. It evaluates both positive (items 1, 3, 4, 7, 10) and negative (items 2, 5, 6, 8, 9) self-perceptions using a 4-point Likert scale. Positive items are scored from "strongly agree" (4) to "strongly disagree" (1), while negative items are reverse-scored. The total score ranges continuously, with higher scores indicating higher self-esteem. The RSES is applicable across various disciplines and populations, particularly in psychology and adolescent health research. It demonstrates strong psychometric properties, including a Guttman reproducibility coefficient of .92 and high test-retest reliability ($r = 0.85\text{--}0.88$). In this study, it yielded an internal consistency (Cronbach's alpha) of .70. The scale's simplicity, reliability, and ease of use make it a trusted tool for evaluating self-esteem across different age groups and settings.

Statistical Analysis

Responses to the questionnaire were coded and entered into SPSS. Five hypotheses were stated, of which the first one was tested using Pearson's moment correlation, and the second hypothesis was tested using multiple regression. The third and fourth hypotheses were tested using Hayes's moderation analysis, and the last hypothesis was tested using an independent sample t-test.

Results

Table 1: Summary of Descriptive Analysis of The Demographic Characteristics of The Participants

Variable	Categories	Frequency (N)	Percent (%)
Gender	Male	186	43.2
	Female	245	56.8
Ethnicity	Yoruba	380	88.2
	Igbo	35	8.1
	Hausa	4	0.9
	Others	11	2.6
	Christian	219	50.8
Religion	Islam	211	49.0
	Government Worker	102	23.7
Parental Occupation	Private Worker	108	25.1
	Trader	149	34.6
	Artisan/Business Owner	70	16.2
	Single Parent	57	13.2
Parental Marital Status	Married	311	72.2
	Separated	32	7.4
	Divorced	16	3.7
	Widowed	15	3.5
	SSS1	119	27.6
Present Class	SSS2	159	36.9
	SSS3	152	35.3
	Less than 1 hour	269	62.4
Average Time on Social Media	1-5 hours	96	22.3
	5-10 hours	33	7.7
	More than 10 hours	27	6.3
	Both Parents	284	65.9
Who Are You Living With?	Mother Alone	92	21.3
	Father Alone	20	4.6
	Relatives	29	6.7
	Others	6	1.4
	Private	223	51.7
Type of School	Public	208	48.3

Table 2: Summary of Pearson correlation showing the relationship between age, gender, social media use, body image perception and self-esteem among senior secondary school students.

Variable	Mean	SD	1	2	3	4	5
1. Age	15.40	1.84	—				
2. Gender	1.57	0.50	.04	—			
3. Social Media Use	44.01	17.79	.08	-.01	—		
4. Body Image	73.63	18.29	.11*	-.07	.27**	—	
5. Self-Esteem	29.37	4.05	-.15**	-.03	-.12*	.01	—

Note. $p < .05$ (*), $p < .01$ (**).

The hypothesis stated that there will be a significant positive relationship between age, gender, social media use, body image perception and self-esteem. The results revealed a significant negative relationship between age and self-esteem ($r = -.15$, $p = .01$), indicating that as age increases, self-esteem decreases and vice versa. A significant positive relationship between age and body image ($r = .11$, $p < .05$), indicating that as age increases, body image increases and vice versa. The results also revealed a significant negative correlation between social media use and self-esteem ($r = -.12$, $p < .05$), suggesting that higher social media use is associated with lower self-esteem and vice versa. In addition, a significant positive correlation was observed between social media use and body image ($r = .27$, $p < .01$), indicating that greater social media use is associated with more positive body image perceptions and vice versa. Conversely, the relationship between gender and self-esteem was not statistically significant ($r = -.03$, $p > .05$), suggesting that gender does not have a meaningful relationship with self-esteem in this sample. Also, body image was not significantly correlated with self-esteem ($r = .01$, $p > .05$), suggesting that body image perceptions do not directly relate to self-esteem in this sample.

Table 3: Summary of multiple regression analysis showing the prediction of social media use, body image perception and gender on self-esteem.

Predictor	β	t	Sig	R ²	ΔR^2	F	df	p
Social Media Use	-0.138	-2.539	.012					
Body Image	0.042	0.763	.446	.018	.010	2.224	2, 359	.085

A multiple regression analysis was conducted to examine whether social media use and body image predict self-esteem. The overall model was not statistically significant, ($F(3, 359) = 2.224$, $p > .05$), accounting for (insignificant) 1.8% of the variance in self-esteem. Among the predictors, social media use was a significant negative predictor of self-esteem ($\beta = -0.14$, $t(359) = -2.539$, $p < .05$) This suggests that increased social media use is associated with lower self-esteem and vice versa. On the other hand, body image was not a significant independent predictor of self-esteem ($\beta = 0.04$, $t(359) = 0.76$, $p > .05$)

Table 4: Summary of Hayes macro process moderation analysis showing the independent and interaction influence of social media and gender on self-esteem.

Predictor	B	SE	t	p	95% CI (LL, UL)
Social Media Use	-0.021	0.039	-0.534	.593	[-0.097, 0.055]
Gender	-0.050	1.120	-0.044	.965	[-2.253, 2.153]
Social Media Use × Gender (Interaction)	-0.005	0.024	-0.208	.835	[-0.051, 0.041]

$R^2 = .016$, $F(3, 379) = 2.107$, $p = .099$

Interaction effect: $\Delta R^2 = .000$, $F(1, 379) = 0.043$, $p = .835$

A moderation analysis was conducted to examine whether gender moderates the relationship between social media use and self-esteem. The overall model was not statistically significant, ($F(3, 379) = 2.107$, $p > .05$), insignificantly accounting for only 1.6% of the variance in self-esteem. Independently, social media use was not a significant predictor of self-esteem, ($B = -0.021$, $t(379) = -0.534$, $p > .05$). Similarly, gender was not a significant predictor of self-esteem, ($B = -0.050$, $t(379) = -0.044$, $p > .05$). The interaction between social media use and gender was also non-significant, ($B = -0.005$, $t(379) = -0.208$, $p > .05$), indicating that gender does not moderate the relationship between social media use and self-esteem. The change in R^2 due to the interaction term was 0%, meaning the interaction did not contribute to explaining variance in self-esteem. In conclusion, the results suggest that neither social media use nor gender significantly predicts self-esteem, and gender does not moderate the relationship between social media use and self-esteem.

Table 5: Summary of Hayes macro process moderation analysis showing the independent and interaction influence of body image perception and gender on self-esteem.

Predictor	B	SE	t	p	95% CI (LL, UL)
Body Image	0.016	0.040	0.388	.698	[-0.063, 0.094]
Gender	0.343	1.801	0.191	.849	[-3.199, 3.886]
Body Image × Gender (Interaction)	-0.008	0.024	-0.337	.736	[-0.054, 0.038]

$R^2 = .001$, $F(3, 373) = 0.178$, $p = .911$

Interaction effect: $\Delta R^2 = .000$, $F(1, 373) = 0.113$, $p = .736$

A moderation analysis was conducted to examine whether gender moderates the relationship between body image and self-esteem. The overall model was not statistically significant, ($F(3, 373) = 0.178$, $p > .05$), insignificantly accounting for only 0.1% of the variance in self-esteem. On one hand, body image was not a significant predictor of self-esteem, ($B = 0.016$, $t(373) = 0.388$, $p > .05$). Likewise, gender was not a significant predictor, ($B = 0.343$, $t(373) = 0.191$, $p > .05$). The interaction between body image and gender was also non-significant, ($B = -0.008$, $t(373) = -0.337$, $p > .05$), indicating that gender does not moderate the relationship between body image and self-esteem. The change in R^2 due to the interaction term was 0%, meaning the interaction did not contribute to explaining variance in self-esteem. Overall, the findings suggest that neither body image nor gender significantly predicts self-esteem, and gender does not moderate the relationship between body image and self-esteem.

Table 6: Summary of Independent Samples t-test Comparing Self-Esteem between Male and Female Students

Gender	N	$\bar{x}$	SD	df	t	p
Male	173	29.52	4.14	401	0.63	.532
Female	230	29.27	3.98			

Table 4.6 presents the result of an independent samples t-test comparing self-esteem between male and female students revealed no significant difference between the groups, ($t(401) = 0.63$, $p = .532$). The mean self-esteem score for male students was ($M = 29.52$, $SD = 4.14$), while female students had a mean of ($M = 29.27$, $SD = 3.98$). These findings suggest that gender does not have a statistically significant effect on self-esteem among senior secondary school students. Based on these findings, the stated hypothesis is rejected.

Discussion

This study explored the influence of social media use and body image perception on self-esteem among in-school adolescents in Abeokuta, with gender as a potential moderating factor. A descriptive quantitative approach was employed, testing five hypotheses to elucidate these relationships.

The first hypothesis posited a significant positive relationship between social media use, body image perception, and self-esteem. Contrary to expectations, Pearson correlation analysis revealed that greater social media engagement was significantly associated with reduced self-esteem, aligning with findings by Miljeteig and von Soest (2022), who noted that adolescents, particularly females, often experience diminished self-worth following prolonged social media use. This may form a cyclical pattern, where lower self-esteem prompts increased digital engagement, further eroding self-confidence. Similarly, Lee (2022) highlighted that comparing oneself to idealised online personas, such as peers or influencers, exacerbates self-esteem declines. However, Valkenburg et al. (2021) suggest that social media's impact varies across individuals, with personality traits and coping strategies mediating outcomes, potentially explaining the nuanced effects observed in this study.

Unexpectedly, social media use was positively correlated with body image perception, suggesting that greater exposure to digital platforms may foster more favourable views of one's physical appearance. This finding diverges from prior research, such as Fioravanti et al. (2022) and Jarra et al. (2022), which linked social media to body dissatisfaction. The positive correlation may reflect recent shifts towards body positivity and self-acceptance on platforms like Instagram and TikTok, as noted by Kilby and Mickelson (2025) and Sarah (2021). Adolescents engaging with content that promotes diverse beauty standards may develop healthier body perceptions, particularly in a cultural context like Nigeria, where evolving societal norms could mitigate traditional beauty pressures. Notably, body image perception showed no significant relationship with self-esteem, possibly due to these emerging norms reducing the psychological weight of body image concerns.

The study also identified a negative correlation between age and self-esteem, indicating that older adolescents report lower self-worth. This contrasts with research by Okunlola, Gesinde & Odukoya (2022) and Ifeonu et al. (2021), which suggests self-esteem typically rises from adolescence to adulthood. However, Reitz (2022) proposes that self-esteem trajectories vary depending on demographic and psychological factors, which may account for this finding among Nigerian adolescents. Conversely, a positive relationship emerged between age and body image perception, suggesting that older adolescents develop a more accepting view of their bodies, potentially due to increased maturity or exposure to diverse representations online (Rodgers & Rousseau, 2022). These bring to focus the complex and evolving role of social media in adolescent development, suggesting that while digital engagement may erode self-esteem, it can simultaneously promote more positive body image perceptions. Interventions should therefore be multifaceted, promoting critical media literacy and emotional regulation, while also leveraging the growing presence of body-positive content to reinforce healthy self-concepts across age groups.

The second hypothesis tested whether social media use and body image perception predict self-esteem. Multiple regression analysis indicated that the overall model was not statistically significant, explaining only a small fraction of self-esteem variance. However, social media use emerged as a significant negative predictor, corroborating McComb et al. (2023), who found that frequent engagement with idealised online content undermines self-worth. Neither body image perception nor gender significantly predicted self-esteem, suggesting that individual differences, such as resilience or peer support, may play a more substantial role (Van Oosten, Vandenbosch, & Peter, 2023). These findings highlight the need for targeted digital literacy and emotional resilience programmes to help adolescents critically navigate social media. Emphasis should be placed on fostering self-worth from within, while encouraging supportive environments and reducing overreliance on external validation.

The third and fourth hypotheses examined gender's moderating role in the relationships between social media use, body image perception, and self-esteem. Moderation analyses revealed that gender did not significantly influence these relationships. These findings align with Krause, Baum, Baumann, and Krasnova (2021), who noted that social media's effects on self-esteem vary widely, with content engagement and peer dynamics often outweighing gender differences. While Papadopoulou (2024) reported greater self-esteem declines among females, this study suggests that Nigerian adolescents, regardless of gender, experience similar social media influences. Similarly, body image perception did not predict self-esteem, nor was this relationship moderated by gender, contrasting with studies like Flynn (2023) and Akram et al. (2025), which link appearance dissatisfaction to mental health outcomes. Protective factors, such as social support or shifting societal attitudes, may buffer these effects, as suggested by Valkenburg et al. (2021) and Onwuka, Ajaelu & Ucheagwu (2024). These imply that interventions should move beyond gendered assumptions and instead emphasise fostering resilience, promoting healthy online behaviours, and strengthening adolescent coping strategies across the board. Stakeholders should consider integrating peer-led initiatives and culturally relevant support systems that reflect the shared experiences of Nigerian youth.

The fifth hypothesis, tested via an independent samples t-test, found no significant gender differences in self-esteem. This challenges prior research by Gosar, Bhatt, Sheth, and Kushwaha (2024), which indicated lower self-esteem among females due to societal beauty standards. Instead, psychosocial factors like parental guidance, peer relationships, or academic performance may be more influential in shaping self-esteem among Nigerian

adolescents. This finding also aligns with Valkenburg et al. (2021), who argue that social media's impact is individual rather than strictly gender-dependent. Notably, both male and female adolescents face distinct pressures, females with idealized beauty standards and males with muscular ideals (Verrastro et al., 2020), yet these do not translate into significant self-esteem differences in this sample. This suggests that self-esteem interventions should prioritise psychosocial factors over gender-specific concerns, with a focus on strengthening parental support, peer dynamics, and media literacy among adolescents.

Limitations and suggestions for future studies

One key limitation of this study is its cross-sectional research design, which prevents the establishment of causal relationships between social media use, body image perception, gender, and self-esteem. A longitudinal approach would be more effective in capturing how these variables interact over time. Additionally, the study relied on self-reported measures, making the findings susceptible to social desirability bias. Adolescents may have misreported their social media usage, body image perception, or self-esteem levels due to personal biases or social expectations. Another limitation is that the study focused solely on in-school adolescents in Abeokuta, which may not be representative of all adolescents, especially those from rural areas or out-of-school populations. The results may not fully capture the experiences of individuals from different socioeconomic or cultural backgrounds. Furthermore, the study only considered social media use, body image perception, and gender as predictors of self-esteem, overlooking other potential influencing factors such as personality traits, peer relationships, parental support, and mental health status. Including these variables in future studies could provide a more comprehensive understanding of adolescent self-esteem. Moreover, the study did not differentiate between various social media platforms or the type of content consumed. Platforms like Instagram, TikTok, and Facebook may have distinct impacts on self-esteem, and exposure to body-positive content versus idealised beauty standards could yield different psychological effects. Future research should investigate these distinctions to better understand how specific social media experiences influence adolescents' self-perception.

To address these limitations, future studies should adopt a longitudinal research design to track changes in self-esteem over time regarding social media use and body image perception. This would help establish causality and provide deeper insights into the long-term psychological effects of digital engagement. Additionally, incorporating qualitative methods such as interviews and focus groups could offer a more nuanced understanding of adolescents' experiences, complementing quantitative findings with personal narratives. A mixed-methods approach would be particularly valuable in capturing the complexities of social media influence. Further research should also examine protective psychological factors such as self-compassion, emotional intelligence, and resilience, which may moderate the effects of social media on self-esteem. Understanding these factors could aid in the development of effective psychological interventions for adolescents. Additionally, future studies should explore how social media influences self-esteem across diverse cultural, geographical, and economic backgrounds to account for sociocultural variations in digital experiences.

Finally, research should assess the effectiveness of intervention programs designed to promote positive self-esteem and healthy social media engagement among adolescents. Digital literacy programs, self-esteem enhancement workshops, and mindfulness-based interventions should be tested to determine their impact on adolescent well-being in the digital era. By addressing these gaps, future studies can contribute to a more comprehensive

understanding of how social media shapes self-esteem and mental health among young people.

Conclusion

The study concludes that increased social media use is associated with lower self-esteem among in-school adolescents in Abeokuta, while it positively influences body image perception. However, body image perception does not significantly affect self-esteem. Additionally, gender does not moderate the relationships between social media use, body image perception, and self-esteem, suggesting that both male and female adolescents experience similar social media influences. These findings highlight the need for further research to explore other psychological and social factors that may impact adolescent self-esteem beyond social media use and body image perception.

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Consent

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