

Internalization of Appearance Ideals and Body Appreciation: Association Moderated by BMI and Social Media Use

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Abstrak. Apresiasi tubuh merupakan aspek penting dari kesejahteraan psikologis remaja, namun perkembangan media sosial dan meningkatnya standar penampilan ideal menyebabkan banyak remaja mengalami dampak negatifnya terhadap tubuh. Penelitian ini bertujuan menganalisis BMI dan durasi penggunaan media sosial sebagai moderator hubungan antara internalisasi standar penampilan ideal dan apresiasi tubuh. Penelitian menggunakan pendekatan kuantitatif dengan desain korelasional pada 166 siswi kelas XI yang dipilih melalui teknik cluster sampling. Data dikumpulkan menggunakan instrumen SATAQ-4R, BAS-2, *self-reported* BMI dan durasi penggunaan media sosial. Analisis dilakukan menggunakan Hayes PROCESS Macro Model 2 setelah memenuhi asumsi normalitas, linearitas, multikolinearitas, dan heteroskedastisitas. Hasil penelitian menunjukkan bahwa internalisasi standar penampilan ideal berhubungan negatif dengan apresiasi tubuh ($\beta = -0,238$; $p < 0,001$). BMI terbukti memoderasi hubungan tersebut ($\beta = 0,016$; $p = 0,028$), sedangkan penggunaan media sosial tidak menunjukkan efek moderasi yang signifikan ($\beta = -0,006$; $p = 0,579$), meskipun berpengaruh langsung terhadap apresiasi tubuh ($\beta = -0,476$; $p = 0,028$). Temuan ini juga menunjukkan pengaruh internalisasi standar penampilan ideal terhadap apresiasi tubuh paling kuat terjadi pada siswi dengan BMI rendah dan melemah pada siswi dengan BMI tinggi. Temuan ini memperkaya bukti empiris mengenai faktor yang memengaruhi body appreciation pada remaja dan menjadi dasar pengembangan layanan bimbingan dan konseling.

Abstract. Body appreciation is an important aspect of adolescents' psychological well-being; however, the rise of social media and increasingly stringent standards of ideal appearance have led many adolescents to experience negative effects on their body image. This study aims to analyze BMI and duration of social media use as moderators of the relationship between the internalization of ideal appearance standards and body appreciation. The study employed a quantitative approach with a correlational design involving 166 11th-grade female students selected through cluster sampling. Data were collected using the SATAQ-4R, BAS-2, *self-reported* BMI, and social media usage duration. Analysis was conducted using the Hayes PROCESS Macro Model 2 after verifying the assumptions of normality, linearity, multicollinearity, and heteroscedasticity. The results indicate that the internalization of ideal body image standards is negatively associated with body appreciation ($\beta = -0.238$; $p < 0.001$). BMI was found to moderate this relationship ($\beta = 0.016$; $p = 0.028$), whereas social media use did not show a significant moderating effect ($\beta = -0.006$; $p = 0.579$), although it had a direct effect on body appreciation ($\beta = -0.476$; $p = 0.028$). These findings also indicate that the influence of the internalization of ideal appearance standards on body appreciation is strongest among female students with a low BMI and weakens among those with a high BMI. These findings enrich the empirical evidence regarding factors influencing body appreciation among adolescents and serve as a foundation for the development of guidance and counselling services.

Key word: Body Appreciation; Internalization of Appearance Ideals; Body Mass Index; Social Media Use; Adolescents.

INTRODUCTION

Adolescence is a transitional period marked by various challenges related to the search for self-identity, social adjustment, and acceptance of one's developing self (Santrock, 2018). During this phase, adolescents experience rapid biological changes, such as hormonal changes, the development of secondary sexual characteristics, and physical growth—which generally occurs earlier in adolescent girls (Steinberg, 2020). As a result, adolescent girls begin to worry about their body image earlier than adolescent boys (Latiff et al., 2018). Body image refers to an individual's perceptions, thoughts, and feelings about their body (Cash & Smolak, 2011). However, various studies indicate that many adolescent girls experience body dissatisfaction because they feel their appearance does not align with prevailing societal beauty standards (Rodgers et al., 2023). This body dissatisfaction can lead to low self-esteem, increased symptoms of depression and anxiety (Duchesne et al., 2016), and the development of unhealthy eating behaviors (Jankauskiene & Baceviciene, 2022).

In recent decades, research on body image has focused not only on negative aspects but also on positive ones, one of which is known as body appreciation. Body appreciation describes an attitude of acceptance, appreciation, and respect for one's body regardless of its shape, size, or physical limitations (Avalos et al., 2005). Individuals with high levels of body appreciation tend to have better psychological well-being (Hartman-Munick et al., 2020), can reduce unhealthy behaviors such as smoking, alcohol consumption, and restrictive dieting, and increase physical activity (Andrew et al., 2016), self-confidence, self-esteem (Tort-Nasarre et al., 2023), and even academic achievement (Torres et al., 2022).

Nevertheless, one of the most significant factors that can hinder the development of body appreciation is the internalization of ideal appearance standards that individuals absorb from their environment (Moreno-Domínguez, 2019; Frederick, 2022; Jarman, 2020). This internalization refers to the adoption of societal standards of appearance and attractiveness into how individuals manage and perceive their own appearance (Thompson et al., 2012). When adolescents internalize unattainable standards of the

“ideal body,” they tend to engage in social comparison and evaluate their bodies negatively, thereby reducing their body appreciation.

Exposure to media—such as social media, magazines, television, and other sources—has the greatest influence on the creation of beauty standards or ideals of appearance (Thompson, 1999; Schaefer et al., 2015). These ideal standards are internalized by the majority of the public as fixed standards of ideal appearance—for example, that women must be thin and men must be muscular (in most Western and Asian countries)—which then leads to body dissatisfaction when individuals are unable to meet these ideal appearance standards (Schaefer et al., 2015). Although numerous studies have examined the relationship between the internalization of ideal appearance standards and body appreciation, the extent to which individual characteristics—such as BMI and duration of social media use—can simultaneously strengthen or weaken this relationship has not been extensively studied, particularly among Indonesian adolescent girls.

Several previous studies have demonstrated that extensive social media use is strongly associated with the internalization of weight bias as well as the internalization of ideal appearance standards, both of which lead to body dissatisfaction (Moufawad et al., 2024; T. Vuong, 2021). Although some studies suggest that the type of content viewed on social media has a greater influence on body image than the mere duration of use (Sanzari, 2023), the reality is that the longer a person spends on social media, the more the platform’s algorithms tend to display content they have viewed frequently before—including content containing negative body messages (Richman & Fast, 2019). Additionally, the risk of being targeted by body-based cyberbullying increases (Peebles, 2003).

BMI can also influence the relationship between the internalization of ideal appearance standards and body appreciation. Given the existence of weight stigma in sociocultural contexts—which targets individuals who are overweight through negative judgments (Hunger, Blodorn, Miller, & Major, 2018; Mensinger, Tylka, & Calamari, 2018; Puhl & Heuer, 2009; Tylka et al., 2014), women with a high BMI tend to receive more critical cultural and interpersonal messages regarding their weight and appearance

compared to women with a lower BMI (Puhl & Brownell, 2006). A study by Moreno-Domínguez (2019) demonstrated that the relationship between internalization and body dissatisfaction becomes stronger as BMI increases. Media literacy can serve as a protective factor in reducing the negative impact of media-driven appearance standards. However, these benefits tend to diminish among individuals with a high BMI, making BMI a factor that must be considered when understanding how individuals respond to the idealization of appearance in the media (Ahzadeh, 2022). BMI is an important moderator in examining the relationships described by objectification theory and the Tripartite Influence Model, which form the basis for theories of the internalization of ideal appearance standards and body image (Frederick, 2022).

Although numerous studies have examined the internalization of ideal appearance standards and body appreciation, most previous literature has tended to test the roles of Body Mass Index and social media use separately or treat them purely as direct independent variables affecting body image (Moufawad et al., 2024; Moreno-Domínguez, 2019). In reality, however, in the lives of adolescents, biological characteristics and the dynamics of digital behavior do not operate in isolation; rather, they act as contextual factors that can simultaneously influence an individual's psychological responses. Furthermore, the majority of studies examining the interaction of these variables have focused on Western populations (Frederick, 2022). There is a scarcity of empirical data on how body structure and social media usage interact in moderating body appreciation among adolescent girls in developing countries such as Indonesia.

This study offers a more comprehensive theoretical approach by applying a simultaneous dual-moderator test. Through this approach, individual variations in physical characteristics (BMI) and social media usage duration are positioned simultaneously as moderators to map the boundaries or conditions under which the negative effects of the internalization of appearance standards on body appreciation can be strengthened or, conversely, weakened, particularly among adolescent girls in Indonesia. Therefore, this study aims to understand whether BMI and social media

usage duration moderate the relationship between the internalization of ideal appearance standards and body appreciation among adolescent girls in Indonesia.

The findings of this study are expected to provide theoretical benefits for the advancement of psychology, particularly adolescent developmental psychology and media psychology, by expanding the ecological validity of the Tripartite Influence Model through the identification of biological and digital boundary conditions in Southeast Asia. Practically, this study makes an important contribution to the public, counselors, and educational institutions in designing more precise mental health intervention programs. Rather than treating all adolescents as a homogeneous group, these findings can serve as the basis for determining media literacy education strategies that are specifically tailored to the actual body weight characteristics of adolescent girls and their digital habits.

METHOD

The study population consisted of 236 female students in the 11th grade at State Senior High School 07 in Semarang. Based on the results of the GPower analysis, this study required at least 120 respondents. However, the number of respondents in this study reached 166 female students. Participants were selected using a cluster sampling technique, with random selection from several 11th-grade classes, specifically targeting female students.

Data collection was conducted using two psychological instruments: the Body Appreciation Scale-2 (BAS-2), developed by Tylka and Wood-Barcalow (2015), and the Sociocultural Attitudes Toward Appearance Questionnaire-4 Revised (SATAQ-4R), developed by Schaefer et al. (2017). In addition, data regarding Body Mass Index (BMI) and duration of social media use were obtained through respondent self-reports. Prior to use, all instruments obtained permission from their developers, were translated and underwent a back-translation process by the Language Training Center at Muhammadiyah University of Yogyakarta, and were validated through expert judgment by an academic and a guidance and counseling practitioner. Furthermore, the instruments were tested for validity and reliability before being used in the study. Data collection was conducted from April to May 2026 both in person and online. In-person

data collection took place in classrooms as the primary source of study participants, while online data collection via Google Forms aimed to supplement the number of participants to meet the study's sampling requirements.

The BAS-2 instrument was used to measure the level of Body Appreciation, consisting of 10 items using a five-point Likert scale (1 = Never to 5 = Always). All items were found to be valid ($p < 0.320$) and reliable ($\alpha = 0.892$). The internalization of appearance ideals was measured using the SATAQ-4R. This instrument consists of 31 items using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Twenty-six items were found to be valid ($p < 0.266$), while the remaining 5 items were invalid and were not used. Subsequently, the 26 SATAQ-4R items were tested for reliability and were found to demonstrate strong internal consistency with a Cronbach's alpha value of $\alpha = 0.904$.

Body Mass Index (BMI) data were obtained through calculations based on self-reported weight and height provided by the respondents prior to completing the main instrument. According to the Indonesian Ministry of Health, there are five BMI categories that can be used as a reference for assessing an individual's physical health: severely underweight = <17 , underweight = $17- <18.5$, normal = $18.5-25.0$, overweight = $25-27$, and obese = >27 . BMI is calculated using the formula: $\text{BMI} = \text{Weight (kg)} \div \text{Height (m)}^2$. Social media use was also measured using self-reported data through the question: "How much time do you spend on social media in total per day/24 hours, regardless of the specific platform?" A similar approach has also been used in previous studies to measure the frequency of social media use (Moufawad et al., 2024; Sanzari, 2023). Duration categories can be classified as High: ≥ 6 hours/day, Moderate: $3.0-5.9$ hours/day, and Low: < 3 hours/day (Antari et al., 2025; Wuisang, 2023).

This study employed a quantitative approach with a descriptive correlational design. Data analysis employed the PROCESS Macro Model 2 (Hayes, 2018). Prior to hypothesis testing, preliminary diagnostic assessments confirmed that key statistical assumptions were met, including normality of residuals, linearity, absence of multicollinearity, and no evidence of heteroscedasticity, thereby validating the suitability of the regression model used. PROCESS Macro Model 2 allows for the testing

of two moderator variables—BMI and social media use—which operate simultaneously yet independently on the relationship between the internalization of ideal appearance standards and body appreciation. The significance of the moderating effects was evaluated using a bootstrapping procedure with 5,000 resamplings and a bias-corrected 95% confidence interval (CI). A moderating effect is considered significant if the confidence interval does not cross the zero value (Hayes, 2018).

RESULTS AND DISCUSSION

The results of the descriptive statistical analysis indicate that the respondents have relatively moderate levels of internalization of appearance ideals and BMI, accompanied by high levels of social media use and body appreciation. These results suggest that the data are suitable for further inferential analysis and hypothesis testing. Table 1 details the results of the descriptive statistical tests.

Table 1. Results of Descriptive Statistical Tests

Category	Internalization of Appearance Ideals	BMI	Social Media Use	Body Appreciation
	f (%)	f (%)	f (%)	f (%)
Low	80 (48.2)	13 (7.8)	27 (16.3)	28 (16.9)
Moderate	57 (34.3)	95 (57.2)	65 (39.2)	59 (35.5)
High	29 (17.5)	58 (34.9)	74 (44.6)	79 (47.6)
Mean (SD)	69.43 (19.33)	24.075 (3.98)	5.15 (2.66)	39.62 (7.52)

Note: Low BMI (underweight and severely underweight); Moderate BMI (normal); High BMI (overweight and obese).

The results of the analysis show that the internalization of appearance ideals has a significant negative effect on body appreciation ($\beta = -0.238$; $p < 0.001$). This means that the higher adolescents' internalization of appearance ideals, the lower their level of body appreciation—and vice versa. Although BMI does not have a significant direct effect on body appreciation ($\beta = 0.173$; $p = 0.229$), social media use was found to have a significant negative effect on body appreciation ($\beta = -0.476$; $p = 0.028$), indicating that the higher the intensity of social media use, the lower the respondents' body appreciation.

Furthermore, the analysis results show that BMI significantly moderates the relationship between the internalization of appearance ideals and body appreciation ($\beta = 0.016$; $p = 0.028$). Although the effect of social media use was not significant ($\beta = -0.006$;

$p = 0.579$)—as indicated by the lower limit of the confidence interval passing through zero on its way to the upper limit (Hayes, 2018)—social media use was not found to act as a moderator. A more detailed analysis of these interactions can be found in Table 2.

Table 2. Results of the PROCESS Macro Hayes Model 2 Moderation Analysis

Predictor	β	SE	t	p	Bootstrapping BC 95 % CI	
					Lower	Higher
Internalization of Appearance Ideals	-0.238	0.024	-9.956	<0.001	-0.284	-0.190
Body Mass Index	0.173	0.143	1.208	0.229	-0.110	0.4565
Social Media Use	-0.476	0.215	-2.219	0.028	-0.899	-0.052
Internalization X Body Mass Index	0.016	0.007	2.223	0.028	0.002	0.0307
Internalization X Social Media Use	-0.006	0.011	-0.557	0.579	-0.272	0.0152

Figure 1 shows that all the lines have a negative slope, indicating that an increase in the internalization of appearance ideals is always accompanied by a decrease in body appreciation. However, the slope of the lines differs at each BMI level. The strongest negative effect was found in the low-BMI group ($\beta = -0.302$), then decreased in the moderate-BMI group ($\beta = -0.238$), and was weakest in the high-BMI group ($\beta = -0.173$). This indicates that the negative correlation between the internalization of appearance ideals and body appreciation is stronger at low BMIs, whereas among individuals with high BMIs, the relationship between the two tends to weaken. This pattern holds true for social media users in the low, moderate, and high BMI categories.

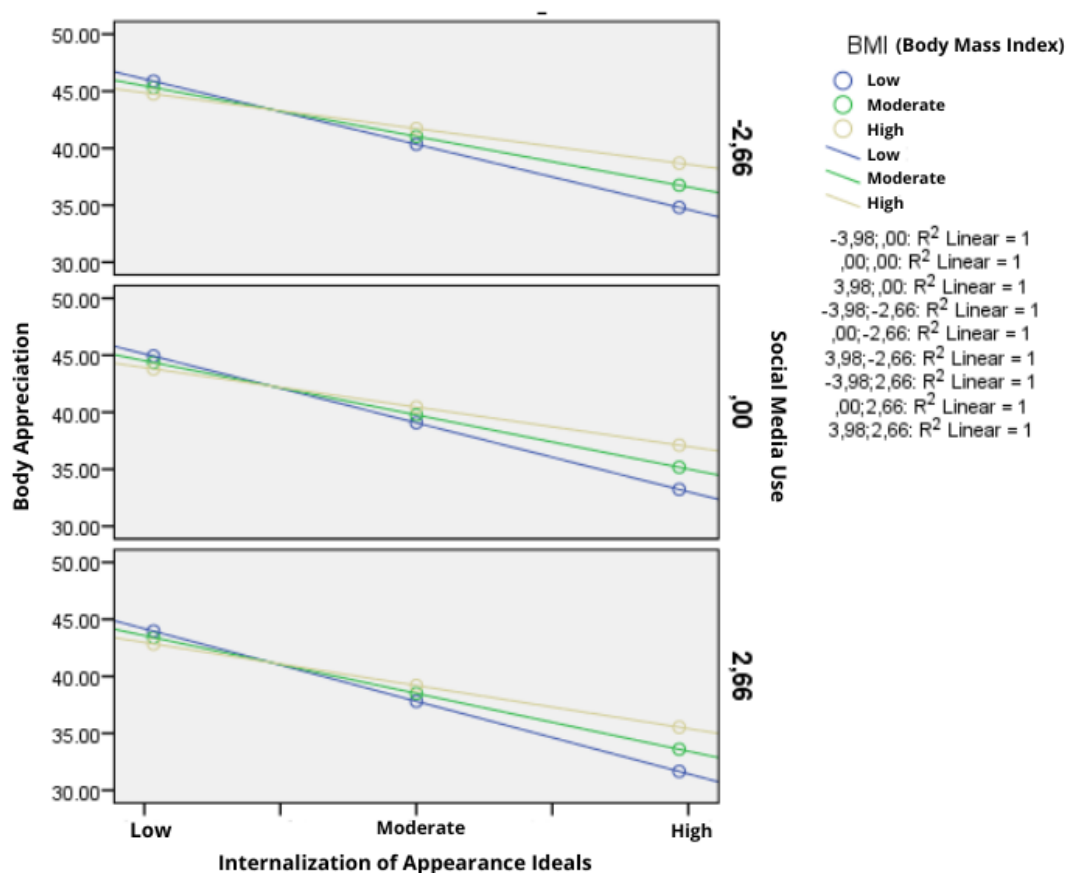


Figure 1. Visualization of the interaction between BMI and social media use on body appreciation.

The psychological dynamics revealed in this study indicate that the internalization of sociocultural appearance standards remains a major threat to adolescent girls' mental health as they view their own bodies. The finding that unrealistic beauty standards can undermine self-esteem aligns with global studies confirming that conventional beauty messages consistently place women in a vulnerable position regarding body dissatisfaction (Dignard & Jarry, 2021). Individuals with low BMIs (thin and very thin) are closer to sociocultural ideal standards. This proximity makes them highly sensitive and leads them to be extremely hard on themselves in order to maintain that position; even minor fluctuations in their bodies immediately trigger anxiety and undermine their body appreciation (Cornelissen, 2015). However, Ahzadeh (2022) found that individuals with low BMIs possess good media literacy, which serves to protect them from negative body-related messages.

The weakened effects of the internalization of appearance ideals and body appreciation among individuals with a high BMI (overweight and obese) can be explained through cognitive dissonance theory and self-defense adaptation mechanisms (Tylka & Wood-Barcalow, 2015). Individuals who are overweight or obese are acutely aware that their bodies are far from the ideal constructs promoted by the media. This objective awareness prompts them to activate self-defense mechanisms in the form of whole-body acceptance or to shift the source of their self-esteem to non-physical domains such as academic achievement or social relationships (Tylka & Wood-Barcalow, 2015; Carr, 2012). Daily experiences of facing body stigma also train this high-BMI group to develop psychological habituation and resilience, so that external messages regarding appearance standards no longer inflict destructive emotional blows (Carr, 2012).

On the other hand, the finding that the duration of social media use does not moderate this relationship offers a new critical perspective for the literature on digital behavior. These results challenge the common assumption that the quantity or duration of screen time spent by adolescents online is not a determining factor that alters the psychological impact of appearance standards. This supports recent studies indicating that the quality of interactions and the type of content consumed are far more harmful than the mere number of hours spent online (Sanzari, 2023; Jarman et al., 2021). Individuals who spend only a brief time on social media but become caught in a vortex of upward social comparison or body objectification may experience psychological vulnerability equivalent to—or even more severe than—that of those who spend hours passively scrolling without engaging in self-comparison (Saiphoo & Vahedi, 2019).

The theoretical benefit of this study is to enrich the body of knowledge regarding adolescent developmental psychology and media consumer behavior by demonstrating the dynamic interaction between biological physical conditions and cognitive perceptions. Practically, the results of this study make a significant contribution to the public, school counselors, and educators by highlighting the need to avoid a one-size-fits-all approach to adolescent mental health intervention programs. Programs to promote body appreciation in school settings must be specifically tailored: thin adolescent girls require interventions to reduce their appearance-related perfectionism,

while strategies for managing social media use should not merely limit screen time but should also foster critical media literacy so that adolescents can filter out and reject content that objectifies the human body.

CONCLUSION

This study successfully addressed its research objectives by demonstrating that the negative impact of the internalization of appearance ideals on the decline in body appreciation among female students is not uniform but is significantly moderated by a physical characteristic—body mass index. The destructive effect of adopting these ideal beauty standards was found to be far more potent in reducing body appreciation among thin female students who face psychological pressure to maintain their physical appearance, while this negative effect was attenuated among female students who are taller or heavier. On the other hand, daily social media usage duration was found to have a direct effect that independently worsens body appreciation, but it does not moderate the relationship between appearance internalization and body appreciation across all time scales.

Based on these findings, the public, counselors, and educational institutions are advised to design more specific body image intervention programs tailored to group characteristics—such as focusing on reducing appearance-related perfectionism anxiety among slender female students—and to orient device regulation toward enhancing critical digital media literacy rather than merely imposing rigid limits on screen time. For future research, it is recommended to expand the geographic scope of the sample and explore other, more dynamic moderator variables—such as the type or specific characteristics of digital content accessed by adolescents—in order to map the dynamics of adolescent girls' mental health in Indonesia more comprehensively.

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