From Likes to Distress: The Link Between Instagram Use, Muscle Dysmorphia, and Psychological Well-being"

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Abstract

In the digital era of self-presentation, Instagram platforms among other platforms has become an emergent and dominant in shaping the body perceptions in youth. This study investigates the relationship between Instagram use, muscle dysmorphia (MD), and psychological distress in late adolescents (15–17 years) and young adult males (18–25 years). Employing a comparative cross-sectional design, 150 male gym-goers who reported active Instagram use were recruited through purposive sampling. The Appearance-Related Social Media Consciousness Scale (adapted for Instagram), the Drive for Muscularity Scale, and the Kessler Psychological Distress Scale were used to gather data. Results revealed strong positive correlations between Instagram use and MD ($r = .70$, $p < .01$), Instagram use and psychological distress ($r = .55$, $p < .01$), and MD and psychological distress ($r = .60$, $p < .01$). Regression analyses further confirmed that MD significantly mediated the relationship between Instagram use and psychological distress, with Instagram use predicting 49% of the variance in MD, and MD partially accounting for the variance in distress levels ($\Delta R^2 = .14$). These findings highlight the psychological risks associated with high appearance-focused engagement on Instagram, especially in developmental stages marked by heightened body image vulnerability. The study underscores the need for preventive strategies and digital literacy programs to address body dissatisfaction and emotional distress linked to social media exposure. Interventions targeting appearance comparison and unrealistic muscular ideals are crucial in fostering healthier social media use and promoting psychological well-being among adolescent and young adult males.

Keywords; Instagram use, Muscle dysmorphia, Psychological distress, Body image, Adolescents and Young Adults.

Introduction

In this modern era, the trending use of social media, predominantly image-centric platforms like Instagram, has considerably influenced perception of young males about their physical appearance. A preoccupation about the muscularity, leanness around the waist, desire to have v physique has

become a strong desire in youngster due to excessive appearance-focused social media engagement, this pathological preoccupations and desire push them to a muscle dysmoprhia disorder that is the subtype of body dysmorhia. Researches have been identified several aspects that have a strong association with the Instagram influence. An Instagram platform is most contended by hyper-muscularity lean physique, is showcased by fitness influencers, bodybuilders, and celebrities who often use photo editing, lighting, and performance-enhancing drugs (PEDs) to impress the Instagram users. Scientific evidences signify the repeated and prolong exposure to such imagery aggravate the upward social comparisons, where individuals recognize their own bodies as inadequate (Fardouly et al., 2015; Griffiths et al., 2018). Researchers like Tiggemann & Slater (2014) found that young male adults reported high dissatisfaction with their body and have strong drive for muscularity because of excessive exposure to fitness-related content on Instagram. Under the guise of motivation some unrealistic body standards like fitspiration trend glorifies the extreme fitness and excessive dieting to achieve the masculine body with muscularity. Though, these posts reinforce toxic masculinity by equating self-worth with muscularity (Boepple et al., 2016). A 2021 study in Body Image uncovered that men were more likely to engage in compulsive exercise and restrictive eating main key component of muscle dysmoprhia, who followed fitness influencers. In instagram an algorithmic function bombarded the user with posts of bodybuilding or fitness content if have seen or opened any post linked with fitness, this curated content reinforces obsessive behaviors. Research published in Computers in Human Behavior (2020) revealed that frequent engagement with content emphasizing muscularity was associated with increased muscle dysmorphia (MD) symptoms. This connection stems from repeated exposure to unrealistic body standards, which reinforces negative self-perceptions and heightens body dissatisfaction. The visual nature of Instagram promotes a phenomenon where users begin to perceive themselves primarily as objects for others' visual appraisal. This platform facilitates heightened appearance consciousness through its built-in enhancement tools like filters, editing features, and public engagement metrics. Such mechanisms intensify users' preoccupation with their physical presentation, often resulting in compulsive self-monitoring behaviors (Choukas-Bradley et al., 2020). Supporting evidence comes from Holland and Tiggemann's (2016) investigation, which established a positive correlation between regular gym selfie posting among male users and elevated muscle dysmorphia indicators. These findings imply that direct involvement in image-focused social media activities may exacerbate body image disturbance symptoms. The Instagram environment cultivates an artificial representation of reality, where individuals selectively showcase only their most idealized and muscular photographs. This practice establishes distorted standards for physical appeal, resulting in persistent discontent (Perloff, 2014). Empirical research published in Psychology of Popular Media Culture (2019) revealed that male participants engaging with the platform for over half an hour each day exhibited markedly more pronounced muscle dysmorphia characteristics compared to those who abstained from use. Although certain content creators advocate for body acceptance through unfiltered imagery (evident in the #InstagramVsReality movement), numerous fitness-oriented accounts continue to disseminate improbable bodily metamorphoses, thereby exacerbating body image disturbances (Mabe et al., 2014). A comprehensive 2022 review appearing in Clinical Psychology Review established that Instagram engagement demonstrated a more robust association with muscle dysmorphia than interactions with alternative social media services, attributable to its predominant emphasis on visual perfection. The quest for digital affirmation, manifested through engagement metrics such as likes, comments, and follower statistics, perpetuates an unhealthy fixation on physical appearance. Investigative work published in Cyberpsychology, Behavior, and Social Networking (2020) documented that male subjects who temporarily discontinued Instagram usage for a mere seven-day period experienced measurable reductions in both body dissatisfaction and muscle

dysmorphia indicators, underscoring the platform's tangible psychological consequences. The social media platforms are used by the fitness industry for marketing purpose as a study in 2021 revealed that 60% fitness influencers and body builders as well promote the use of unverified supplements in achieving a muscles, strength that is the muscle enhancing symptom of muscle dysmoprhia. Instagram fosters a distorted perception of reality by encouraging users to selectively share only their most idealized and muscular images. This cultivated perfection creates unrealistic beauty standards that fuel chronic body dissatisfaction and psychological distress (Perloff, 2014). Research demonstrates this phenomenon clearly: a 2019 study in Psychology of Popular Media Culture found that men who spent more than 30 minutes daily on Instagram showed significantly greater muscle dysmorphia symptoms than non-users, directly linking platform engagement with increased emotional distress. Some influencers spread body positivity through unfiltered messaging (#InstagramVsReality) but most fitness accounts to this day share digitally enhanced transformations. Such unrealistic portrayals do not just play with perceptions of body, but they also add to psychological distress by perpetuating unrealistic ideas (Mabe et al., 2014). A Clinical Psychology Review meta-analysis released in 2022 confirms that Instagram use is more closely linked to muscle dysmorphia than other platforms, primarily because of its obsessive emphasis on physical appearance—a factor that compounds anxiety, depression, and self-worth issues for susceptible users. Moreover, Instagram's inbuilt reward structure—likes, comments and follower stats—escalates the pursuit of validation derived from looking a particular way. This fuels a vicious cycle where people tie their sense of value to approval on social media and their psychological pain increases. A critical study from 2020 in the journal Cyberpsychology, Behavior, and Social Networking discovered that men who permanently stopped using Instagram — for just one week — saw significant decreases in both body dissatisfaction and muscle dysmorphia symptoms, reminding us that the ways in which the platform validates us play a direct role in our emotional state.

Rationale of the Study
In recent years, the pervasive use of social media platforms, particularly Instagram, has raised significant concerns about its psychological impact on body image and mental health.   Through curated content, filtered images, and posts that are focused on appearance, Instagram, a platform that is driven by visuals, promotes idealized and frequently unattainable body standards. This constant exposure to idealized body types has been associated with increased body dissatisfaction and internalization of muscular ideals, especially among adolescents and young adults, who are highly active on such platforms.   One emerging consequence of this phenomenon is muscle dysmorphia, a subtype of body dysmorphic disorder, characterized by a pathological preoccupation with muscularity and body shape.   Research has shown that individuals with high drive for muscularity are more likely to engage in excessive exercise, disordered eating, steroid use, and experience psychological distress.   However, limited empirical studies have explored the mediating role of muscle dysmorphia in the relationship between Instagram use and psychological distress.   Furthermore, psychological distress—manifested as symptoms of anxiety, depression, and stress—has been increasingly reported among youth who frequently compare their physical appearance with others on social media.   This comparison can lead to feelings of inadequacy and low self-worth, significantly impairing emotional well-being.   It is essential to investigate how Instagram engagement may influence the body image and mental health outcomes of late adolescents (15–17 years old) and young adults (18–25 years old). This is due to the vulnerable developmental stage of these groups. By addressing these gaps, the study aims to contribute to the growing body of literature on social media's psychological impact and support the development of prevention strategies for muscle dysmorphia and emotional distress in youth populations.

Measures

In this study, we aimed to examine the relationship between Instagram use the development of muscle dysmorphia (MD) and psychological distress among late adolescents and adult male gym-goers.

Research Design

A comparative cross sectional research design was used to investigate the differences in instagram use, muscle dysmorphia and psychological distress between late adolescents (ages 15–17) and young adults (ages 18–25).

Sample and Sampling Strategy

The sample was comprised of two distinct groups late adolescents age range from 15 to 17 years and young adults with range of 18 to 25 years. A purposive and convenient sampling was use to recruited a participant from gyms and fitness centers in urban areas.

Inclusion Criteria

- Individuals who identified as male
- Aged 15–17 years (late adolescents) or 18–25 years (young adults)
- Reported active Instagram use (at least 30 minutes per day over the past month)
- Adults must engage in regular gym attendance (minimum 3 days per week)
- Adolescents participation in school-based physical activities at least twice a week
- Ability to read and understand English or Urdu

Exclusion Criteria

- Diagnosed with a severe mental health disorder (e.g., schizophrenia, bipolar disorder), as self-reported or disclosed by parents/guardians (for minors)
- Diagnosed with or receiving treatment for eating disorders
- Female participants (due to the gender-specific focus on male muscle dysmorphia)

Appearance-Related Social Media Consciousness Scale

To assess the extent of participants' appearance-related social media consciousness, we utilized the Appearance-Related Social Media Consciousness Scale developed by Choukas-Bradley et al. (2020). It consists of 13 items to asses individuals cognition about their appearance when interacting with social media platforms, specifically focusing on their behaviors related to posting pictures, editing images, and self-monitoring. It employs a 7-point Likert scale, where participants rate the frequency of their experiences with statements such as:"when people take pictures of me, I think about how I will look if the pictures are posted on social media" (ranging from 1 = Never to 7 = Always), Even when I'm alone, I imagine how my body would look in a social media picture." These items were modified slightly to reflect Instagram-specific contexts, such as:"When people take pictures of me, I think about how I will look if the pictures are posted on Instagram, "Before posting pictures on Instagram, I edit them to make myself look better." The Cronbach's alpha for our adapted scale was 0.76, indicating good internal consistency.

Drive for Muscularity Scale (DMS)

The Drive for Muscularity Scale (McCreary & Sasse, 2000) was used to assess participants' desire to increase muscle mass and engagement in muscle-enhancing behaviors. The DMS includes 15 items, rated on a 6-point Likert scale ranging from 1 (Always) to 6 (Never). The scale yields two subscales: Muscularity-Oriented Body Image (attitudes and dissatisfaction), Muscularity-Oriented Behaviors (behaviors like working out or supplement use). Higher scores reflect a greater drive for muscularity. The DMS has demonstrated good psychometric properties across male

populations, with internal consistency reported at α = .85–.90. Cronbach's alpha was .88, indicating strong reliability of this scale.

Kessler Psychological Distress Scale (K10)

To assess participants' levels of non-specific psychological distress, we used the Kessler Psychological Distress Scale (K10), developed by Kessler et al. (2002). The K10 is a brief self-report measure designed to capture symptoms of depression and anxiety experienced over the past four weeks. The scale consists of 10 items, each rated on a 5-point Likert scale ranging from 1 (None of the time) to 5 (All of the time). Items include statements such as: "During the past 4 weeks, about how often did you feel tired out for no good reason?" "During the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?" Total scores range from 10 to 50, with higher scores indicating greater psychological distress. In this study, the K10 was administered as part of a larger battery of self-report measures. Participants were asked to answer each item based on how they had felt over the past month. The internal consistency of the K10 in the current sample was high (Cronbach's α = 0.89), consistent with prior research reporting alpha values ranging from 0.88 to 0.93.

Procedure

Participants were recruited from local gyms and fitness centers in urban areas using purposive sampling. Inclusion criteria required participants to be male adults aged 18–35 years who regularly used Instagram and attended the gym at least three times a week. The rationale for gym-based data collection was to ensure participants were actively engaged in fitness activities, which is relevant for examining appearance-related concerns and potential muscle dysmorphia. After obtaining informed consent, participants were invited to complete a paper-based or online survey on-site at the gym premises in a private, designated area to ensure confidentiality. Trained research assistants were available to guide participants and answer any queries. Participants were instructed to reflect on their general Instagram use over the past month while completing the Instagram-adapted version of the Appearance-Related Social Media Consciousness Scale (ASMC). The scale included items that assessed the frequency of appearance-monitoring behaviors and editing/posting habits specifically in the context of Instagram. They were also asked to complete additional measures including the Drive for Muscularity Scale (DMS) and psychological distress scale. Participation was voluntary, and respondents were assured that their data would remain anonymous and used solely for research purposes.

Results

The data was analyzed by IBM SPSS software version 26.

Table 1. Demographic Characteristics of the Sample (N = 150)

Variable	Category	Frequency (n)	Percentage (%)
Family System	Nuclear	120	80.0%
	Joint	30	20.0%
Socioeconomic Status	Middle	132	88.0%
	Lower	18	12.0%
Educational Qualification	Graduate	105	70.0%
	Intermediate or Below	45	30.0%
Age Group	15–17	12	8.0%
	18–24	108	72.0%
	25	30	20.0%

Table 1 presents the demographic profile of the study participants. A majority of the sample (80%) belonged to nuclear families, whereas only 20% came from joint family systems. The socioeconomic distribution revealed that a significant proportion of participants (88%) reported belonging to the middle class, while the remaining 12% identified with the lower socioeconomic class. Regarding educational qualifications, most participants (70%) were graduates, while 30% had completed intermediate education or below. The sample was stratified into three age groups: 8% were late adolescents aged 15–17 years, 72% were young adults aged 18–24 years, and 20% were aged 25 years, indicating that the sample was predominantly composed of young adults.

Table 2. Descriptive Statistics, Correlations, and Regression Results for Instagram Use, Muscle Dysmorphia, and Psychological Distress (N = 150)

Variable	M	SD		1	2	3
1. Instagram Use	65.30	10.45	109.20	—	.70**	.55**
2. Muscle Dysmorphia	48.10	8.60	73.96		—	.60**
3. Psychological Distress	55.75	9.30	86.49			—

The mean scores for Instagram use, muscle dysmorphia, and psychological distress were 65.30, 48.10, and 55.75 respectively, with acceptable levels of variance across variables. Significant positive correlations were observed between Instagram use and muscle dysmorphia (r = .70, p < .01), Instagram use and psychological distress (r = .55, p < .01), and muscle dysmorphia and psychological distress (r = .60, p < .01). These findings suggest that higher engagement with Instagram is associated with increased symptoms of muscle dysmorphia and psychological distress.

Table 3
Regression Models for Mediation Analysis of Muscle Dysmorphia Between Instagram Use and Psychological Distress (N = 150)

DV	IV	B	SE B	β	t	P	R^2	ΔR^2
Muscle Dysmorphia	Instagram use	0.52	0.044	.70	11.92	< .001	.49	-
Psychological Distress	Instagram use	0.60	0.063	.55	9.52	< .001	.30	-
Psychological Distress	Muscle dysmoprhia	0.28	0.066	.26	4.24	< .001		
		0.38	0.042	.46	9.05	< .001	.44	.14

Table 3 outlines the results of a series of regression models assessing the mediating role of muscle dysmorphia in the relationship between Instagram use and psychological distress. In the first model, Instagram use significantly predicted muscle dysmorphia (β = .70, t = 11.92, p < .001), accounting for 49% of the variance (R^2 = .49). In the second model, Instagram use was also a significant predictor of psychological distress (β = .55, t = 9.52, p < .001; R^2 = .30). In the final model, when muscle dysmorphia was included as a mediator, the direct effect of Instagram use on psychological distress decreased (β = .26, t = 4.24, p < .001), while muscle dysmorphia independently contributed to psychological distress (β = .46, t = 9.05, p < .001). The model explained 44% of the variance in psychological distress, and the change in R^2 (ΔR^2 = .14) indicated a meaningful mediation effect. These results suggest that muscle dysmorphia partially mediates the relationship between Instagram use and psychological distress.

Table 4
One-Way ANOVA Comparing Muscle Dysmorphia and Psychological Distress Across Age Groups (N = 150)

Variable	Age Group	M	SD	F	P	η²	Post Hoc (Tukey)
Muscle Dysmorphia	15–17	41.30	6.50	18.75	< .001	.20	18–24 > 15–17**, 18–24 > 25**
	18–24	50.10	7.90				
	25	44.80	8.20				
Psychological Distress	15–17	48.40	6.90	14.20	< .001	.16	18–24 > 15–17**, 18–24 > 25*
	18–24	58.90	7.80				
	25	52.20	8.60				

Note. p < .05 (*), p < .001 (**). η² = partial eta squared (effect size). Post hoc test = Tukey HSD.

It summarizes the results of one-way ANOVA comparing muscle dysmorphia and psychological distress scores across three age groups: 15–17, 18–24, and 25 years. For muscle dysmorphia, a statistically significant group difference was found (F = 18.75, p < .001, η² = .20). Post hoc analysis using Tukey HSD revealed that participants aged 18–24 reported significantly higher muscle dysmorphia scores compared to both the 15–17 and 25-year-old groups. Similarly, significant differences were observed for psychological distress (F = 14.20, p < .001, η² = .16). Participants aged 18–24 also reported significantly greater psychological distress compared to the other two age groups. These results indicate that young adults (18–24) are particularly vulnerable to experiencing heightened body image concerns and emotional distress.

Discussion
The findings revealed strong positive correlations between all three primary variables. Instagram use was significantly correlated with muscle dysmorphia and psychological distress. These results support prior research suggesting that higher engagement with image-centric social media platforms can heighten appearance-related insecurities (Fardouly et al., 2015; Griffiths et al., 2018), especially when users engage in appearance comparisons or are exposed to idealized body images. The current study adds to this literature by focusing specifically on muscle dysmorphia, a lesser-studied but critical construct within the spectrum of body image concerns, particularly relevant for male participants or those influenced by fitness trends on Instagram. Neurobiological theorist explained the use of Instagram activates reward centers in the brain (via likes, comments, and validation), reinforcing compulsive behaviors. Over time, this constant feedback loop can create a dependency on external validation, making users more vulnerable to body dissatisfaction and mood disorders when validation is absent or inadequate (Sherman et al,2018).

One-way ANOVA revealed that young adults aged 18–24 reported significantly higher levels of both muscle dysmorphia and psychological distress compared to the 15–17 and 25-year-old groups. The developmental stage of emerging adulthood is characterized by heightened self-focus, identity exploration, and peer comparison, which may make individuals more vulnerable to body image concerns and social comparison on platforms like Instagram (Higgins, 1987). During this time, individuals are more likely to experiment with self-presentation and are sensitive to peer feedback. Instagram becomes a tool for forming identity, but it may also increase vulnerability to insecurity and distress when identity is closely tied to physical appearance. Interestingly, older participants (age 25) reported lower distress and dysmorphia levels, suggesting a possible maturational decline in appearance-related anxieties, which supports Erikson's psychosocial

development theory — that identity issues and self-image concerns begin to stabilize in later stages of young adulthood (Erikson, 1968). This study relied on self-report measures, which may be subject to social desirability bias. The cross-sectional design limits the ability to establish causality between variables. The sample was limited to male gym-goers, reducing generalizability to females or non-gym populations. Participants were selected through purposive sampling, which may introduce selection bias. Cultural and regional factors specific to urban Pakistani settings may limit applicability to other contexts. In the study frequency and type of content consumed was not measured that might have impact appearance comparison and sociocultural pressure.

Conclusion

The current study provides compelling evidence that Instagram use is significantly linked to increased levels of muscle dysmorphia and psychological distress among late adolescent and young adult males who are regular gym-goers. Importantly, muscle dysmorphia was found to significantly mediate the relationship between Instagram use and psychological distress, highlighting it as a key psychological mechanism through which social media exposure may impact mental health. These findings underscore the urgent need for targeted preventive interventions. Strategies such as media literacy programs, psychoeducation around unrealistic body ideals, and promotion of healthier social media habits can help mitigate the psychological consequences of hyper-muscular ideals. Additionally, stakeholders in the fitness industry and digital wellness advocacy must work collaboratively to promote more inclusive and realistic representations of body diversity on visual platforms like Instagram. Ultimately, addressing the mediating role of muscle dysmorphia is essential in reducing emotional distress and fostering psychological well-being among adolescent and young adult males in the digital age.

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