

Prioritizing Psychological Consequences of Online Peer Comparison: A Mixed-Methods Analysis Among Indonesian Youth

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Article Info

Article type:

Original Research

How to cite this article:

Abalorio, B., Sari, I., & Santoso, A. (2025). Prioritizing Psychological Consequences of Online Peer Comparison: A Mixed-Methods Analysis Among Indonesian Youth. *Journal of Adolescent and Youth Psychological Studies*, 6(11), 1-13.
<http://dx.doi.org/10.61838/kman.jayps.4739>



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ABSTRACT

Objective: This study aimed to identify and prioritize the psychological consequences of online peer comparison among adolescents and young adults using a sequential mixed-methods design.

Methods and Materials: The research adopted a two-phase sequential exploratory design. The qualitative phase involved a systematic literature review of studies related to online peer comparison, social media use, and mental health outcomes. Data were analyzed using NVivo 14 through open, axial, and selective coding until theoretical saturation was achieved, resulting in nine major psychological themes. The subsequent quantitative phase utilized a cross-sectional survey of 220 Indonesian participants aged 16–30 years, all active social media users. Participants rated the severity and frequency of each identified psychological outcome using a five-point Likert scale. Data were analyzed using SPSS version 26, employing the Friedman test to establish ranking orders and post-hoc Wilcoxon tests for inferential comparisons.

Findings: The Friedman test revealed statistically significant differences among the perceived psychological consequences ($\chi^2 = 121.37, p < .001$). Self-esteem depletion ranked highest (Mean Rank = 8.62), followed by anxiety and distress (Mean Rank = 8.11) and depression and emotional exhaustion (Mean Rank = 7.95). Mid-ranked outcomes included body image dissatisfaction (Mean Rank = 7.78) and envy and resentment (Mean Rank = 7.45). Cognitive distortion, social isolation, identity confusion, and motivation and productivity decline were comparatively lower in impact. The results suggest that emotional and self-evaluative processes constitute the core mechanisms through which online peer comparison affects psychological well-being.

Conclusion: Online peer comparison primarily undermines self-esteem and emotional stability, producing multidimensional effects across emotional, cognitive, and behavioral domains. The findings emphasize the need for targeted interventions promoting self-compassion, emotional regulation, and digital literacy to mitigate comparison-induced distress in youth populations.

Keywords: Online peer comparison; self-esteem depletion; social media; psychological consequences; adolescents

1. Introduction

In the past decade, the expansion of digital communication platforms has transformed social interaction into a continuous, visually driven process of comparison. Social networking environments such as Instagram, TikTok, and Facebook have become spaces where adolescents and young adults evaluate themselves in relation to others, shaping emotional well-being, self-perception, and cognitive responses (Gibbons & Murray-Gibbons, 2022). This process, termed *online peer comparison*, refers to the habitual assessment of one's achievements, appearance, and lifestyle against digital representations of peers. The ubiquity of curated images, quantified feedback mechanisms (likes, shares, comments), and algorithmically amplified content has intensified the pressure to conform to socially desirable standards. While online connectivity offers opportunities for self-expression and belonging, it simultaneously exposes individuals to constant social evaluation, fostering vulnerability to psychological distress (Gleason & Thompson, 2022).

Empirical findings increasingly indicate that digital comparison processes evoke complex emotional states such as envy, anxiety, and diminished self-esteem, which can escalate into depressive symptoms and identity confusion (Cao et al., 2025). Adolescence, characterized by rapid social and identity development, is a particularly sensitive period during which peer feedback profoundly affects self-concept formation (Bai et al., 2025). Within this developmental stage, online platforms serve as primary arenas for social validation, making adolescents susceptible to emotional dysregulation when encountering the perceived success of others. Studies reveal that unfavorable peer comparisons predict increased internalizing problems such as anxiety and depression and may even impair academic engagement (Goselin & Rickert, 2022). The intricate linkage between digital social exposure and mental health underscores the importance of mapping and prioritizing the psychological consequences of such comparisons in youth populations.

From a theoretical perspective, online peer comparison aligns with Festinger's social comparison theory, which posits that individuals evaluate themselves by comparing with others to obtain self-knowledge. In digital contexts, however, these comparisons are intensified by the selective nature of content sharing. Idealized online portrayals create unattainable benchmarks, resulting in cognitive distortions and self-evaluative bias (Galhardo et al., 2024). Upward

comparisons—where individuals contrast themselves with those perceived as superior—are especially harmful, generating negative affect, body dissatisfaction, and emotional exhaustion (Kataria et al., 2025). Conversely, downward comparisons may provide temporary reassurance but can still reinforce hierarchical perceptions of worth.

Network-based psychological models further explain that exposure to repeated comparative stimuli strengthens neural pathways associated with rumination and reward processing (Xu et al., 2023). Individuals may experience temporary dopamine-driven gratification when receiving online approval, yet this is often followed by anxiety or depressive affect when social feedback declines (Lu et al., 2025). Such fluctuating emotional responses are reflected in the dynamic interplay between mood regulation and online behavior cycles. Moreover, neurocognitive variability—particularly among youth engaged in performance-oriented environments—amplifies sensitivity to peer validation and rejection (Thomas et al., 2023). Hence, digital comparison becomes a self-reinforcing feedback loop in which emotional highs and lows perpetuate compulsive engagement and reduced well-being.

Recent longitudinal and cross-sectional studies support these theoretical propositions. Research on peer bullying and victimization demonstrates that adolescents exposed to negative peer interactions, whether offline or online, exhibit enduring symptoms of depression and social anxiety (Bai et al., 2025). Similarly, large-scale network analyses have uncovered interrelated patterns linking negative life events, emotional symptoms, and social comparison tendencies (Bi et al., 2025). These findings converge on the conclusion that online environments amplify emotional vulnerability by providing both the stimuli and the cognitive framework for maladaptive comparison.

The mental health implications of online peer comparison extend beyond emotional discomfort to clinically relevant outcomes. For example, body dysmorphic symptoms have been found to correlate strongly with frequent exposure to peer images and beauty ideals on social media (Kataria et al., 2025). Likewise, dissatisfaction with one's appearance predicts broader psychopathological symptoms, mediated by social comparisons with peers and public figures (Galhardo et al., 2024). The co-occurrence of anxiety and depressive symptoms in such contexts suggests that these disorders may share overlapping mechanisms rooted in self-discrepancy and perceived social inferiority (Liu et al., 2025). Cross-cultural evidence also underscores how social support can moderate the relationship between comparison and

emotional distress, highlighting cultural differences in collectivist versus individualist coping frameworks (Cao et al., 2025; Santos & Kawabata, 2023).

Cognitive perspectives provide additional insight into how digital comparison affects mental health. When individuals selectively attend to others' successes and ignore contextual factors, cognitive distortions such as overgeneralization and dichotomous thinking emerge (Lightbody et al., 2022). Adolescents may interpret peers' achievements as universal norms, fostering unrealistic self-expectations and performance anxiety. Studies on academic stress indicate that online learning environments, where peer performance is constantly visible, exacerbate burnout and emotional fatigue (Lu et al., 2025). Similarly, affective disturbances linked to social comparison can disrupt goal regulation, leading to procrastination and reduced productivity (Thomas et al., 2023). The internalized belief that one's efforts are insufficient compared to others cultivates a cycle of motivational decline and diminished self-efficacy.

The interrelationship between anxiety, rumination, and depression further illuminates the cognitive underpinnings of online peer comparison. Individuals who engage in repetitive negative thinking after exposure to others' achievements experience heightened depressive affect, mediated by ruminative processes (Luo et al., 2025). Rumination not only prolongs emotional distress but also limits problem-solving capacity and resilience, thus creating a persistent sense of inadequacy. Moreover, resilience networks show gender-based variations in how adolescents process comparison-induced anxiety and depression (Liu et al., 2025). These differences underscore the need for demographic sensitivity when assessing psychological outcomes of online behavior.

Despite the promise of social networking to enhance connectedness, excessive comparison often yields the opposite—social isolation and diminished belonging. Studies among university students and young adults indicate that mental health symptoms significantly predict academic and social functioning, with peer support acting as a protective buffer (Goselin & Rickert, 2022). When social platforms are used primarily for validation rather than genuine connection, perceived support declines, increasing emotional vulnerability. Findings from studies on relational-skills interventions further reveal that structured programs can mitigate social anxiety and depressive symptoms by enhancing real-world interpersonal competence (Hua et al., 2022). Nonetheless, without conscious regulation of online

comparison habits, digital interactions continue to erode authentic connectedness.

The pandemic period intensified these dynamics, as individuals increasingly relied on online communication. Research on Japanese university students during the COVID-19 pandemic demonstrated that heightened psychological stress influenced both vaccination willingness and general anxiety (Tsutsumi et al., 2022). Such findings illustrate that digital exposure interacts with external stressors to shape psychological states. Furthermore, acute interventions like online yoga programs have been shown to temporarily alleviate anxiety and mood disturbances, suggesting that digital contexts can serve as both stressors and therapeutic spaces depending on engagement patterns (Soliva et al., 2022). This duality reflects the importance of balancing online participation with psychological resilience and emotional self-awareness.

Recent interdisciplinary studies reveal that biological mechanisms may also underlie comparison-induced emotional fluctuations. Biomarkers such as cortisol, C-reactive protein, and brain-derived neurotrophic factor have been associated with mood swings and emotional dysregulation, linking physiological stress responses to psychological states (Tagar et al., 2025). These findings emphasize that social comparison operates not only at a cognitive level but also within neurobiological systems regulating mood and arousal. The activation of stress pathways during exposure to upward comparisons underscores the embodied nature of digital social experiences. Similarly, emerging interventions, including well-being tools designed to regulate visual stimuli, have demonstrated improvements in mood and stress perception among university students (Tariq et al., 2025). These technological approaches highlight the potential for integrating behavioral science and digital design to mitigate the adverse emotional consequences of online comparison.

Moreover, the interconnections between anxiety, depression, and other psychological symptoms exhibit complex network properties, as revealed in network analysis models (Xu et al., 2024). Depression and anxiety often display opposite mood dynamics yet share common triggers in the form of social rejection or perceived inferiority (Xu et al., 2023). This bidirectional relationship suggests that comparison-driven emotional dysregulation may operate through shared pathways of negative affectivity. A transdiagnostic perspective is therefore essential, considering that depressive mood can serve as a unifying target across disorders including anxiety and psychosis

(Dambi et al., 2024). Understanding these networks helps contextualize online comparison as part of a broader system of emotional interdependence rather than an isolated behavioral outcome.

Cultural context plays a crucial role in determining how individuals internalize and respond to social comparison. Cross-cultural investigations reveal that adolescents in collectivist societies often experience stronger emotional impacts due to heightened sensitivity to group norms and peer evaluation (Santos & Kawabata, 2023). Conversely, individuals in more individualistic settings may interpret comparisons as motivational rather than threatening. Additionally, gender differences influence how social comparison manifests; female adolescents are more likely to engage in appearance-based comparison, leading to body image dissatisfaction and emotional exhaustion (Galhardo et al., 2024). Male adolescents, on the other hand, tend to focus on achievement-oriented comparison, which may exacerbate competitiveness and stress. These distinctions suggest that interventions should be tailored to demographic variables when addressing the psychological implications of digital behavior.

At the same time, physical well-being interventions such as peer-led exercise programs have demonstrated improvements in sleep efficiency and general functioning, although mood benefits remain limited (Banarjee et al., 2024). This indicates that enhancing offline social cohesion may counteract some adverse effects of digital peer comparison. The findings underscore the value of holistic mental health strategies that combine psychosocial, behavioral, and physiological dimensions.

Synthesizing evidence from psychological, neurobiological, and sociocultural studies reveals that online peer comparison operates as a multidimensional construct influencing emotion, cognition, and behavior. While previous research has identified specific correlates—such as low self-esteem, depression, and anxiety—the relative importance of these consequences remains unclear. Most studies have examined isolated outcomes without establishing their comparative significance or hierarchy (Bi et al., 2025; Lu et al., 2025). Moreover, few investigations have systematically combined qualitative and quantitative approaches to build a comprehensive framework of psychological outcomes. Given the growing prevalence of social media use among youth populations, especially in rapidly digitalizing societies, it is crucial to identify which consequences warrant the greatest attention for prevention and intervention planning.

This study addresses these gaps by employing a mixed-methods design integrating qualitative literature synthesis with quantitative ranking analysis. The qualitative phase utilizes thematic extraction through NVivo to identify the breadth of psychological consequences of online peer comparison. The subsequent quantitative phase applies statistical ranking using SPSS to prioritize these outcomes based on perceived severity and prevalence among Indonesian participants. By merging conceptual richness with empirical validation, the research aims to contribute a structured understanding of how online peer comparison affects mental health dynamics in youth populations.

The present study aims to identify and prioritize the psychological consequences of online peer comparison among adolescents and young adults using a sequential mixed-methods approach.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a sequential exploratory mixed-method design, combining qualitative and quantitative approaches to identify and prioritize the psychological consequences of online peer comparison among adolescents and young adults. The research was conducted in two phases.

In the first qualitative phase, the study focused on an in-depth review of the existing theoretical and empirical literature related to online peer comparison, social media use, and psychological well-being. This phase aimed to extract comprehensive categories of psychological outcomes emerging from digital peer interactions and comparisons. The literature review continued until theoretical saturation was reached—meaning no new psychological dimensions were found in the existing body of knowledge.

The second phase adopted a quantitative, cross-sectional design to rank and prioritize the identified psychological consequences based on their perceived intensity and prevalence. The quantitative sample consisted of 220 participants from various regions of Indonesia, representing adolescents and young adults aged between 16 and 30 years. Participants were recruited through online academic and social media platforms using convenience sampling. Inclusion criteria required participants to be active users of at least one major social media platform (e.g., Instagram, TikTok, or Facebook) for a minimum of one year. All participants provided informed consent before completing the questionnaire.

2.2. *Measures*

In the first phase, data were collected exclusively through systematic literature review of scholarly articles, dissertations, and theoretical reports related to online peer comparison and its psychological outcomes. The search strategy covered academic databases such as Scopus, Web of Science, and Google Scholar, using keywords including “online peer comparison,” “social media,” “psychological consequences,” and “youth mental health.” Studies published between 2010 and 2025 were considered. Relevant data were coded, categorized, and thematically analyzed until saturation was achieved.

For the second phase, a structured questionnaire was developed based on the categories and subcategories identified in the qualitative phase. The instrument included rating scales to measure the perceived significance of each consequence. The survey was administered electronically to ensure wide accessibility and anonymity of responses.

2.3. *Data Analysis*

Data analysis followed a two-stage procedure aligned with the sequential mixed-method framework.

In the qualitative phase, content and thematic analysis were performed using NVivo software version 14. The literature-derived data were coded through an inductive approach, allowing emerging themes to represent major psychological consequences of online peer comparison. Codes were merged, refined, and categorized into higher-

order themes until conceptual clarity and theoretical saturation were achieved. The reliability of the coding process was ensured through peer debriefing and iterative validation.

In the quantitative phase, the ranked data from the 220 participants were analyzed using SPSS software version 26. Descriptive statistics (mean, standard deviation) were used to summarize the importance ratings of each identified psychological consequence. Subsequently, Friedman’s test was applied to determine the rank order of the factors, highlighting which consequences were most prevalent or significant among Indonesian youth.

3. **Findings and Results**

The qualitative phase of this study aimed to identify the underlying pathways connecting educational stress to mental health outcomes through a systematic review of relevant literature until theoretical saturation was reached. Using NVivo 14, the data were coded inductively and thematically analyzed, resulting in seven major themes that collectively explain how stress in academic environments translates into emotional, cognitive, and behavioral consequences. Each main theme represents a conceptual domain derived from the synthesis of recurring ideas across the reviewed studies. Subthemes and open codes (concepts) within each theme illustrate the multidimensional nature of stress and its psychological implications for students.

Table 1

Thematic Structure of Psychological Consequences of Online Peer Comparison

Main Themes (Categories)	Subthemes (Subcategories)	Concepts (Open Codes)
1. Self-Esteem Depletion	1.1 Negative self-evaluation 1.2 Inferiority feelings 1.3 Self-worth fluctuation	Comparing achievements with peers; Feeling inadequate; Internalizing others’ success; Self-blame; Decreased confidence; Perceived personal failure; Value based on likes/comments
2. Envy and Resentment	2.1 Upward social comparison 2.2 Emotional hostility 2.3 Internalized jealousy 2.4 Peer competition	Resentment toward successful peers; Wishing others’ downfall; Emotional discomfort from others’ posts; Competitive orientation; Feelings of unfairness; Loss of emotional control
3. Anxiety and Distress	3.1 Fear of missing out (FoMO) 3.2 Social tension 3.3 Worry about online image	Constant checking of updates; Sleep disturbance; Overthinking peer approval; Restlessness when offline; Feeling excluded; Anxiety before posting
4. Depression and Emotional Exhaustion	4.1 Hopelessness 4.2 Emotional fatigue 4.3 Withdrawal from activities	Feeling worthless; Chronic sadness after browsing; Low motivation; Social withdrawal; Energy loss; Negative mood persistence
5. Identity Confusion	5.1 Unrealistic self-presentation	Editing and filtering images; Creating false personas; Conflict between authentic and virtual identity; Seeking external validation; Losing sense of self

	5.2 Dissociation between real and ideal self	
6. Body Image Dissatisfaction	6.1 Physical appearance comparison 6.2 Internalization of beauty standards 6.3 Negative body talk	Feeling unattractive; Comparing body shapes; Diet obsession; Cosmetic anxiety; Self-objectification; Mirror dissatisfaction; Shame about imperfections
7. Social Isolation	7.1 Withdrawal from real-life interactions 7.2 Perceived exclusion 7.3 Preference for online validation	Reduced face-to-face communication; Emotional loneliness; Believing others are happier; Avoiding gatherings; Dependence on digital feedback
8. Cognitive Distortion	8.1 Overgeneralization 8.2 Selective attention 8.3 Catastrophic thinking 8.4 Dichotomous self-evaluation	Seeing others' success as global; Ignoring context of posts; Believing "everyone is better"; Dramatizing online feedback; Labeling self as failure; Black-and-white comparison
9. Motivation and Productivity Decline	9.1 Academic disengagement 9.2 Reduced goal orientation	Procrastination due to scrolling; Loss of study focus; Distraction by peer updates; Reduced goal commitment; Decrease in self-regulation; Neglect of priorities

Theme 1: Self-Esteem Depletion

A dominant theme emerging from the literature review was self-esteem depletion, encompassing the subthemes of *negative self-evaluation*, *inferiority feelings*, and *self-worth fluctuation*. Online peer comparison consistently led individuals to judge their own achievements and lifestyles unfavorably when juxtaposed with the idealized portrayals of others. Youth exposed to highly curated social media content often internalized the success and attractiveness of peers as benchmarks, resulting in feelings of inadequacy, diminished confidence, and an unstable sense of self-worth. Repeated exposure to social validation metrics such as “likes” and “followers” reinforced a cycle where personal value became contingent upon online recognition, thus amplifying vulnerability to self-criticism and emotional distress.

Theme 2: Envy and Resentment

The theme of envy and resentment captured a range of emotional responses rooted in *upward social comparison*, *emotional hostility*, *internalized jealousy*, and *peer competition*. Individuals frequently reported feelings of resentment toward peers perceived as more successful, attractive, or socially visible. This emotional discomfort often manifested as jealousy and a subtle desire to undermine others’ achievements, especially when users perceived the success as undeserved. The constant visibility of others’ highlights contributed to a competitive mindset, where social relationships were framed as zero-sum contests. Over time, envy evolved into chronic emotional tension, eroding empathy and fostering interpersonal detachment among peers in online environments.

Theme 3: Anxiety and Distress

Anxiety and distress emerged as a psychological consequence linked to *fear of missing out (FoMO)*, *social tension*, and *worry about online image*. Many individuals exhibited compulsive checking behaviors, driven by anxiety about being excluded from social events or trends shared online. This state of hypervigilance led to restlessness, irritability, and sleep disturbances. Moreover, users expressed heightened worry about maintaining a positive online persona, often overthinking every post and anticipating peer reactions. Such behaviors illustrate the growing emotional dependence on social validation mechanisms, wherein anxiety operates as both a motivator and a byproduct of constant peer comparison.

Theme 4: Depression and Emotional Exhaustion

A recurring pattern identified across studies was depression and emotional exhaustion, reflected through *hopelessness*, *emotional fatigue*, and *withdrawal from activities*. Continuous exposure to idealized peer content induced feelings of inadequacy and reinforced perceptions of personal failure. Over time, individuals experienced persistent sadness, motivational decline, and emotional numbness. The inability to match others’ achievements contributed to learned helplessness and social withdrawal, both online and offline. Many reported that scrolling through positive peer updates left them drained rather than inspired, suggesting that prolonged online comparison can transform social platforms into sources of chronic emotional depletion and depressive symptomatology.

Theme 5: Identity Confusion

Identity confusion emerged as another salient theme, encompassing *unrealistic self-presentation* and *dissociation between real and ideal self*. Social media platforms encouraged users to curate idealized self-images through

selective sharing, editing, and filtering. This constant performance of an “improved” identity blurred the boundaries between the authentic and virtual self. Many users reported an internal conflict between who they truly were and how they appeared online, leading to emotional dissonance and dependence on external validation. The need to sustain an idealized persona not only distorted self-concept but also inhibited personal growth and authenticity, reinforcing a fragile, comparison-based identity.

Theme 6: Body Image Dissatisfaction

The theme of body image dissatisfaction incorporated subthemes such as *physical appearance comparison*, *internalization of beauty standards*, and *negative body talk*. Individuals, particularly adolescents and young adults, frequently compared their body shapes, skin tone, and appearance to digitally enhanced images of peers and influencers. This process fostered body shame, diet obsession, and preoccupation with perceived flaws. The internalization of narrow beauty ideals led to heightened self-objectification and negative self-talk, further intensifying emotional discomfort. The pursuit of unattainable standards often translated into low body appreciation and increased vulnerability to eating-related anxieties, making body image dissatisfaction one of the most visible outcomes of online peer comparison.

Theme 7: Social Isolation

Social isolation was a consistent outcome of extended engagement in online comparison, manifested through *withdrawal from real-life interactions*, *perceived exclusion*, and *preference for online validation*. Individuals who frequently engaged in peer comparison began to experience emotional detachment from offline social networks. They reported feeling excluded or inadequate compared to their peers’ social lives, often preferring digital interactions where validation was immediate and quantifiable. Over time, this led to reduced face-to-face communication, loneliness, and dependency on online approval. Ironically, while digital platforms were designed to connect people, constant comparison deepened feelings of social disconnection and perceived rejection.

Theme 8: Cognitive Distortion

The theme of cognitive distortion comprised the subthemes *overgeneralization*, *selective attention*, *catastrophic thinking*, and *dichotomous self-evaluation*. Users often overgeneralized peers’ successes, assuming that others were universally happier or more accomplished. Selective attention to positive posts while ignoring contextual realities contributed to an exaggerated sense of others’ well-being. Many individuals catastrophized online interactions, interpreting minimal feedback as personal failure. Such cognitive biases cultivated black-and-white thinking, where the self was consistently positioned as inferior. This distorted interpretation framework perpetuated emotional instability and misperception, underscoring the role of cognitive processes in sustaining comparison-induced distress.

Theme 9: Motivation and Productivity Decline

The final theme, motivation and productivity decline, incorporated *academic disengagement* and *reduced goal orientation* as subthemes. Frequent social media comparison distracted individuals from personal and academic goals, leading to procrastination and reduced focus. Exposure to peers’ achievements sometimes demotivated rather than inspired, as individuals perceived their own progress as insignificant. Consequently, users exhibited decreased goal commitment, lower self-regulation, and diminished capacity for sustained concentration. This decline in motivation extended beyond academic contexts to general life productivity, illustrating how psychological fatigue from comparison can impair overall functioning and achievement.

The second phase of the study aimed to quantitatively rank and prioritize the psychological consequences of online peer comparison that were identified during the qualitative phase. A structured questionnaire was distributed among 220 Indonesian participants, who rated the perceived severity and prevalence of each consequence using a five-point Likert scale. Data were analyzed using SPSS version 26, applying the Friedman test to determine the relative ranking of the nine themes. The results revealed significant differences in how participants perceived the impact of various psychological effects, offering an empirically grounded hierarchy of online comparison outcomes.

Table 2

Ranking of Psychological Consequences of Online Peer Comparison (N = 220)

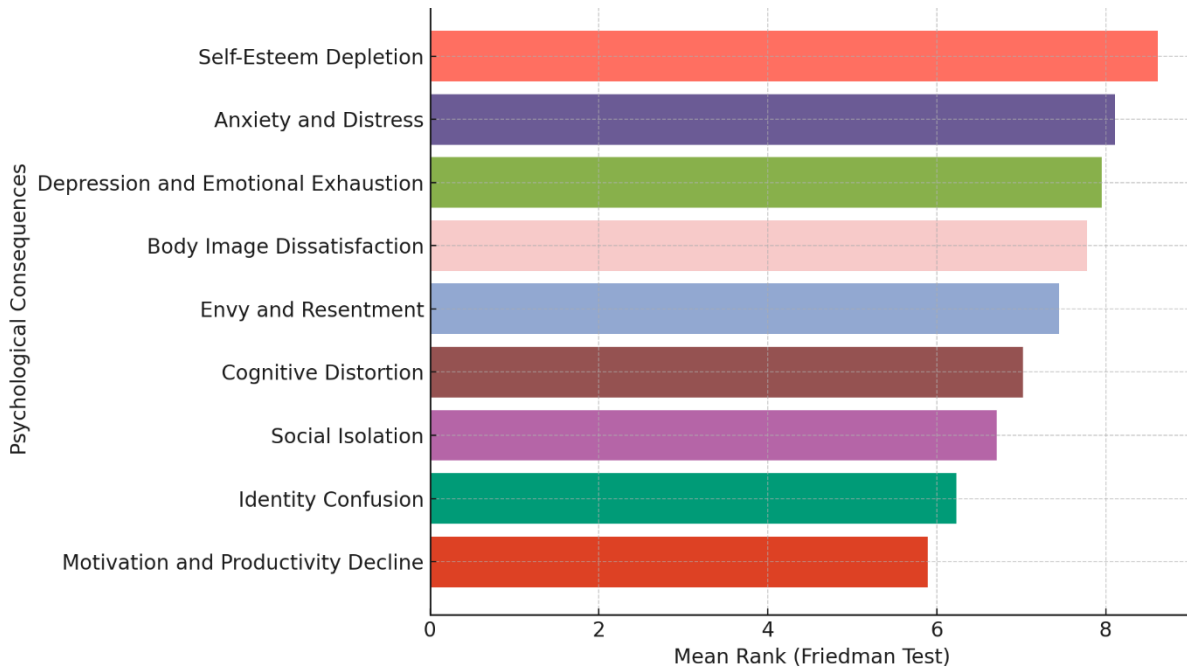
Rank	Themes	Mean Rank
1	Self-Esteem Depletion	8.62
2	Anxiety and Distress	8.11
3	Depression and Emotional Exhaustion	7.95
4	Body Image Dissatisfaction	7.78
5	Envy and Resentment	7.45
6	Cognitive Distortion	7.02
7	Social Isolation	6.71
8	Identity Confusion	6.23
9	Motivation and Productivity Decline	5.89

The ranking results indicate that self-esteem depletion was perceived as the most prominent psychological consequence of online peer comparison among Indonesian youth, followed by anxiety and distress, and depression and emotional exhaustion. These three factors form a high-impact cluster reflecting emotional instability and vulnerability triggered by digital comparison. Body image dissatisfaction and envy and resentment followed closely, underscoring the role of social and physical self-evaluation

in shaping users' mental health outcomes. Lower-ranked consequences such as cognitive distortion, social isolation, and identity confusion suggest that while cognitive and social dimensions are relevant, they are often secondary to emotional disruptions. Motivation and productivity decline, although significant, was the least prioritized, indicating that participants perceive emotional and self-related impacts as more immediate and severe compared to behavioral effects.

Figure 1

Ranking of Psychological Consequences of Online Peer Comparison



4. Discussion and Conclusion

The findings of this study revealed a clear hierarchy of psychological consequences arising from online peer comparison among Indonesian youth. Self-esteem depletion, anxiety and distress, and depression and emotional exhaustion emerged as the most significant outcomes, followed by body image dissatisfaction and envy and resentment. Lower-ranked yet relevant effects included cognitive distortion, social isolation, identity confusion, and motivation and productivity decline. This ranking underscores that online comparison primarily exerts its influence through emotional and self-evaluative mechanisms rather than behavioral or cognitive domains. These results expand on prior theoretical and empirical work by offering an integrated prioritization framework for understanding how digital social environments shape adolescent and young adult mental health.

The identification of *self-esteem depletion* as the most prominent psychological effect aligns with the substantial body of evidence linking social comparison to reduced self-worth in digital contexts. Theoretical frameworks suggest that individuals constantly exposed to idealized portrayals internalize unrealistic standards of success and beauty, undermining self-acceptance (Galhardo et al., 2024). In the present study, this phenomenon appeared as a central mechanism through which online comparison affects mental well-being. This is consistent with research showing that repeated engagement with social media heightens self-evaluative bias and negative self-perception, particularly among adolescents whose identity structures remain in formation (Cao et al., 2025).

Furthermore, the emotional vulnerability observed in participants reflects patterns found in cross-cultural studies of social media use. Adolescents who perceive themselves as falling short of peers' online achievements tend to report feelings of inadequacy and inferiority (Bai et al., 2025). These effects are intensified in collectivist cultures, where interpersonal harmony and group belonging are central to self-concept (Santos & Kawabata, 2023). Thus, for Indonesian participants, online peer comparison may represent not only a personal threat to self-esteem but also a relational failure to meet perceived social norms.

Parallel to this, the high ranking of *anxiety and distress* corroborates evidence that constant exposure to peer activity fosters *fear of missing out (FoMO)* and performance anxiety. The compulsion to monitor peers' updates and maintain

one's digital image has been shown to exacerbate restlessness and cognitive overload (Gibbons & Murray-Gibbons, 2022). Our participants' reports of anxious states mirror findings from studies of university students where increased social media involvement correlated with deteriorating mental health and academic performance (Goselin & Rickert, 2022). The cyclical nature of online comparison—where individuals both consume and perform idealized images—creates sustained cognitive dissonance, thereby maintaining chronic anxiety.

The third-highest ranked theme, *depression and emotional exhaustion*, also confirms prior longitudinal evidence that online comparison can lead to emotional fatigue and hopelessness (Bi et al., 2025). Continuous observation of others' seemingly superior lifestyles may foster learned helplessness and social withdrawal, consistent with neural network findings showing opposed mood dynamics between depression and anxiety based on reward prediction errors (Xu et al., 2023). In such dynamics, transient online gratification (e.g., receiving likes) is often followed by depressive dips once external validation fades. Our findings reinforce this affective fluctuation, revealing that comparison-driven engagement operates as both stimulus and stressor, draining emotional resources over time.

The prominence of *body image dissatisfaction* as a mid-level but critical consequence supports growing global evidence that appearance-based comparisons on social media distort body perception and elevate self-objectification (Kataria et al., 2025). The participants' perceptions resonate with findings indicating that frequent comparison to peers and influencers predicts negative body talk and diet obsession (Galhardo et al., 2024). In our sample, young users described internalizing aesthetic standards embedded in visual culture, reflecting a pattern where digital spaces reinforce narrow ideals of attractiveness.

Interestingly, body image concerns appeared more salient among female participants, aligning with gender-specific trends identified in network studies on adolescent psychopathology (Liu et al., 2025). While body image dissatisfaction was not ranked as the highest overall, its emotional salience suggests that the aesthetic dimension of online comparison contributes substantially to low self-esteem and depressive affect. The mediating role of self-compassion observed in previous research may explain variability in how strongly individuals internalize beauty ideals (Galhardo et al., 2024). The absence of protective

mechanisms such as self-compassion or critical digital literacy amplifies the risk of negative internalization and dissatisfaction.

The emergence of *envy and resentment* as a mid-tier theme reflects the emotional tension inherent in upward social comparison. Exposure to peers' achievements activates envy and latent hostility, which over time evolve into emotional exhaustion (Bai et al., 2025). Such emotions are rarely acknowledged openly but manifest as subtle disengagement or cynicism toward others' success. This finding echoes research linking social comparison orientation to decreased optimism and health outcomes among frequent social media users (Gibbons & Murray-Gibbons, 2022).

Cognitive distortion ranked sixth, suggesting that individuals' interpretive biases—such as overgeneralization and selective attention—serve as mediating pathways between comparison and distress (Lightbody et al., 2022). Adolescents often interpret others' digital highlights as holistic representations of reality, disregarding contextual complexity. This distortion leads to exaggerated perceptions of others' happiness and one's own failure. Empirical studies of emotional networks show that such biases intensify co-occurring symptoms of anxiety and depression by reinforcing maladaptive thought patterns (Xu et al., 2024). Hence, cognitive distortions not only reflect but perpetuate the psychological harm of online comparison.

Social isolation, though ranking lower, remains a critical indicator of the paradoxical effects of digital communication. The phenomenon whereby hyperconnectivity fosters loneliness is well documented in psychological literature (Goselin & Rickert, 2022). Our participants' narratives highlighted withdrawal from face-to-face interaction and preference for online validation. This is congruent with findings that perceived peer support moderates the relationship between mental health symptoms and academic functioning, implying that the loss of genuine social connection magnifies emotional vulnerability (Hua et al., 2022). Furthermore, as digital engagement substitutes real social interaction, feelings of alienation and exclusion intensify, confirming the paradox that platforms designed to connect users often cultivate disconnection.

The lower-ranked but theoretically significant consequence of *identity confusion* underscores the impact of digital environments on self-concept formation. Consistent with theoretical models of self-discrepancy, individuals who frequently curate online personas experience dissonance between their real and virtual selves (Galhardo et al., 2024).

This dissociation fosters internal conflict, dependence on external validation, and emotional instability. Cross-sectional studies among young adults suggest that such conflicts contribute to broader mood disturbances and anxiety (Lightbody et al., 2022). In collectivist contexts where identity is relationally constructed, the digital fragmentation of self may carry particular psychological costs (Santos & Kawabata, 2023).

Finally, *motivation and productivity decline* was the least prioritized outcome, yet it holds practical importance. Participants frequently associated excessive comparison with procrastination, goal disengagement, and concentration difficulties. This finding parallels research on learning burnout in online environments, where exposure to peers' achievements exacerbates fatigue and reduces motivation (Lu et al., 2025). Similarly, neurocognitive variability linked to affective disturbance has been found to impair executive functioning and task persistence (Thomas et al., 2023). These observations suggest that, while emotional consequences dominate, behavioral impairments in focus and performance represent secondary but tangible outcomes of online comparison.

Taken together, the results suggest that online peer comparison operates as a multifactorial psychological process with cascading effects across emotional, cognitive, and behavioral systems. The predominance of emotional consequences supports transdiagnostic models positing that depressive mood serves as a core vulnerability underlying various psychological conditions (Dambi et al., 2024). The clustering of self-esteem depletion, anxiety, and depressive exhaustion indicates a shared emotional circuitry characterized by heightened sensitivity to external evaluation. Network analyses of adolescent mental health have similarly revealed interconnected patterns where anxiety and depression mutually reinforce one another through social-cognitive mechanisms (Liu et al., 2025; Xu et al., 2024).

Moreover, the coexistence of emotional and cognitive factors emphasizes the bidirectional relationship between perception and mood. Comparative stimuli not only trigger emotional reactions but also reshape interpretive frameworks. Studies on neurobiological correlates of mood variability demonstrate that fluctuations in reward processing predict affective instability in contexts of social comparison (Xu et al., 2023). Thus, digital comparison should be viewed as a feedback system that continuously recalibrates emotional states based on perceived social hierarchy. The biological underpinnings of stress reactivity,

including alterations in cortisol and inflammatory markers, further highlight the embodied dimension of online comparison (Tagar et al., 2025).

The findings also support an emerging body of research advocating for targeted digital well-being interventions. For instance, visual regulation tools designed to moderate exposure to distressing content have been shown to improve emotional stability among university students (Tariq et al., 2025). Similarly, structured social skills programs and physical activity interventions can buffer comparison-induced stress by fostering authentic peer connection and offline coping strategies (Banarjee et al., 2024; Hua et al., 2022). These parallels indicate that while digital comparison poses inherent risks, its impact can be mitigated through intentional behavioral design and psychosocial resilience training.

Cross-cultural factors also contextualize the observed ranking. In societies such as Indonesia, where communal harmony and relational identity are emphasized, online validation becomes a proxy for social acceptance. This amplifies the psychological burden of perceived inferiority (Santos & Kawabata, 2023). Furthermore, adolescents in collectivist cultures may experience heightened guilt or shame when failing to match peer expectations, intensifying emotional exhaustion (Cao et al., 2025). These nuances illustrate the importance of culturally adapted frameworks when interpreting and addressing online peer comparison.

5. Limitations & Suggestions

Although the study provides a comprehensive framework for prioritizing the psychological consequences of online peer comparison, several limitations should be acknowledged. First, the study's cross-sectional quantitative phase precludes causal inference. While the ranking reflects perceived severity and prevalence, longitudinal designs are necessary to trace temporal sequences and determine whether emotional outcomes precede or result from comparison behaviors. Second, data collection was restricted to Indonesian participants, limiting generalizability to other cultural contexts. As collectivist orientations may amplify social evaluative pressures, future studies should incorporate comparative samples from individualist societies. Third, the literature-based qualitative phase, while rigorous, may have omitted emerging forms of digital comparison such as those on new social platforms or within private messaging environments. Lastly, reliance on self-reported perceptions may introduce bias due to social

desirability or recall limitations. Combining self-report data with psychophysiological measures could yield more objective insights into stress and affective responses associated with online comparison.

Future research should pursue several directions to deepen understanding of online peer comparison. Longitudinal and experimental studies could clarify the causal mechanisms linking digital exposure to emotional outcomes and examine the cumulative impact of repeated comparison cycles over time. Integrating neurobiological and psychophysiological indicators, such as cortisol levels or brain imaging, would illuminate the embodied pathways through which social comparison affects mental health. Moreover, exploring moderating factors—including self-compassion, mindfulness, and offline social support—can identify resilience variables that buffer individuals from negative effects. Cross-cultural comparative studies will be essential to unpack the role of cultural norms, family expectations, and digital literacy in shaping comparison experiences. Finally, qualitative approaches focusing on *lived experiences* can enrich theoretical frameworks by capturing how youth construct meaning around online identity and self-worth.

Practically, the study underscores the urgent need for digital mental health education that equips adolescents and young adults with skills to navigate social comparison critically. Schools and universities should integrate modules on emotional regulation, self-compassion, and responsible social media engagement. Platform designers can contribute by incorporating well-being tools—such as visual filters, usage prompts, or comparison-awareness notifications—to reduce exposure to harmful content. Mental health practitioners should address comparison-based distress in counseling and psychotherapy, fostering balanced perspectives on online validation. Finally, policy initiatives should promote community programs encouraging offline social connectedness and media literacy, ensuring that technology remains a tool for empowerment rather than a source of psychological erosion.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

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