Beyond likes and follows understanding social media's grip on adolescent mental health

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ABSTRACT

This study aims to examine the psychological effects of social media use on adolescents, with particular attention to how patterns of digital interaction influence symptoms of anxiety, depression, and self-esteem. It seeks to understand not only the extent of these effects but also the underlying mechanisms—especially the role of social comparison and the pursuit of online validation within the broader context of the attention economy. Adopting a mixed-methods approach, this research integrates quantitative data from a survey of 500 high school students aged 13–18 with qualitative insights drawn from in-depth interviews with 20 adolescents. The survey measures the frequency and intensity of social media use, emotional responses to online interactions, and self-reported mental health outcomes using validated psychological instruments. The qualitative component enriches the findings by exploring how adolescents interpret their online experiences, internalize digital norms, and navigate the pressures of social media culture. Findings indicate a significant correlation between high-frequency social media use and increased levels of anxiety and depressive symptoms, especially among female participants. Respondents frequently reported feelings of inadequacy, social pressure, and sleep disturbances linked to online comparison and fear of missing out (FOMO). The contribution of this research lies in its comprehensive and context-sensitive examination of adolescent social media engagement, offering both empirical evidence and theoretical insight into the psychosocial vulnerabilities exacerbated by digital platforms. By combining statistical trends with personal narratives, the study adds depth to ongoing discussions about youth mental health in the digital age. It further advocates for the development of digital literacy education and mental health interventions that are responsive to the lived realities of adolescents growing up in algorithmically curated social environments.

1. Introduction

In an era where digital interaction is seamlessly woven into the fabric of everyday life, adolescents are at the forefront of this transformation [1]. Social media platforms, once conceived as tools for connection and self-expression, have evolved into powerful ecosystems that shape not only how young people communicate, but also how they view themselves and the world around them [2][3]. The omnipresence of platforms such as Instagram, TikTok, and Snapchat in the daily routines of adolescents raises critical questions about the psychosocial implications of such sustained engagement [4][5]. While much attention has been paid to the benefits of social media in terms of information access and community building, there is an urgent and growing need to investigate the

psychological costs it may impose, especially on those in a particularly vulnerable developmental stage [6][7].

This study seeks to explore and understand the complex relationship between social media usage and adolescent mental health, with a particular focus on how patterns of engagement—such as passive scrolling, content comparison, and validation-seeking behaviors—affect psychological well-being. The purpose of this research is not merely to reiterate the commonly acknowledged risks, but to unpack the subtle mechanisms through which social media shapes self-perception, emotional regulation, and mental resilience. By employing a mixed-method approach that combines quantitative data with qualitative insights, this study aims to provide a more holistic understanding of how adolescents experience and internalize their digital environments.

The significance of this research lies in its timeliness and depth. Adolescents today are not just passive consumers of content; they are active participants in digital cultures that valorize visibility, popularity, and curated perfection [8][9]. Such cultures often trigger patterns of digital comparison, exacerbate feelings of inadequacy, and cultivate a fear of missing out (FOMO), all of which are psychological stressors that contribute to anxiety, depression, and low self-esteem [10]. This study recognizes the digital arena as a social stage where adolescents construct their identities, seek affirmation, and navigate a complex terrain of peer validation and social pressure. Understanding the nuances of this process is vital for educators, parents, mental health professionals, and policymakers who are concerned with the growing mental health crisis among youth [11].

What makes this study particularly valuable is its attention to the lived experiences of adolescents in digital spaces. Unlike previous research that predominantly relies on large-scale surveys and focuses primarily on screen time or general correlations between media use and mental health outcomes, this study delves deeper into specific behavioral patterns and psychological processes. It interrogates not just how much adolescents use social media, but how and why they use it, and what emotional and cognitive responses are elicited by different modes of engagement. This shift from a quantitative correlation model to an explanatory and interpretive approach provides a richer, more actionable insight into the mental health implications of social media.

Moreover, the novelty of this paper lies in its integration of psychological theories—particularly the theories of social comparison, self-discrepancy, and emotional contagion—into the analysis of digital behavior. By grounding the research in both empirical data and theoretical frameworks, the study bridges the gap between abstract conceptual understanding and real-world experiences. This interdisciplinary orientation not only deepens the analysis but also sets the groundwork for more nuanced interventions that are context-sensitive and developmentally appropriate.

The research contributes to the scholarly discourse by proposing a more differentiated understanding of social media's impact. Rather than treating adolescents as a homogenous group, the study explores how individual differences in personality traits, emotional intelligence, and social context mediate the effects of social media on mental health. This sensitivity to intra-group variation is crucial in moving beyond generalized claims and toward more targeted support mechanisms. Additionally, by incorporating both male and female perspectives, the research investigates potential gender-based differences in emotional responses to online content, an area that remains underexplored despite growing evidence of differential impact.

One of the key contributions of this research is its methodological innovation. By combining survey instruments that measure self-reported mental health indicators with in-depth interviews that capture subjective experiences, the study generates both breadth and depth of understanding. The qualitative data serve to contextualize and interpret the

statistical findings, offering a narrative dimension that is often missing in large-scale quantitative studies. This methodological synthesis enhances the validity and reliability of the findings while also ensuring that the voices of adolescents are not lost in abstract generalizations.

This study is positioned against the backdrop of a global increase in adolescent mental health disorders, with anxiety and depression rates rising at alarming rates. While socioeconomic and familial factors certainly play a role, digital life has emerged as a central variable that cannot be ignored. Social media, with its algorithms designed to maximize engagement and its constant stream of idealized content, acts as both a mirror and a magnifier of adolescent insecurities. By scrutinizing the emotional and cognitive responses to digital stimuli, this research sheds light on the ways in which technological design intersects with psychological vulnerability.
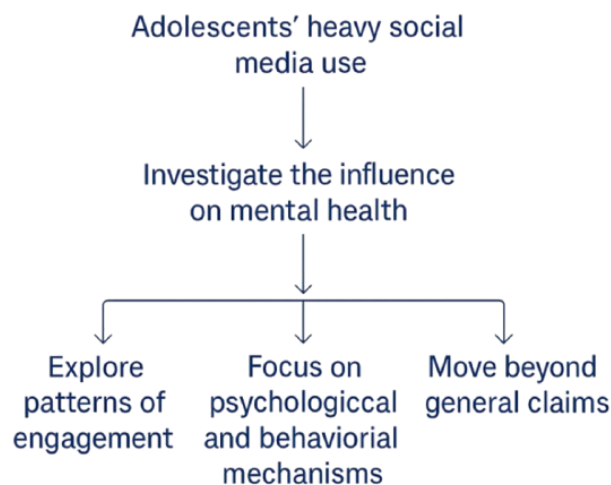

Figure 1 Introduction Flow Diagram: Mapping the Complex Relationship Between Social Media and Adolescent Mental Health in Contemporary Research

Furthermore, this paper aims to inform public discourse and policy by highlighting the often-overlooked psychological mechanisms embedded in everyday digital practices. For instance, the dopamine-driven feedback loop created by likes, shares, and comments mimics reward systems in the brain that can foster addictive behavior. The constant availability of peer approval—or its absence—can intensify feelings of loneliness, even when one is digitally surrounded by others. These patterns, though subtle, accumulate into significant psychological strain over time.

The research question guiding this study is: How does social media use influence the mental health of adolescents, and through what psychological and behavioral mechanisms does this influence operate? This question invites a comprehensive examination of the multi-layered relationship between digital interaction and mental health, foregrounding the role of internal psychological processes as mediators of external digital stimuli.

In sum, this study makes a significant and original contribution to the field of communication and mental health studies by offering a psychologically grounded, methodologically robust, and contextually sensitive analysis of adolescent social media use. It goes beyond superficial metrics to interrogate the deeper emotional and cognitive undercurrents of digital life. At a time when mental health challenges among youth are intensifying and digital media continues to evolve at breakneck speed, research of this nature is not only valuable—it is necessary. The findings have implications not only for academic scholarship but also for practical interventions in education, clinical psychology, digital platform design, and youth policy. By illuminating the psychological contours of

adolescent digital engagement, this paper aims to catalyze more informed, empathetic, and effective responses to one of the most pressing issues of our digital age.

2. Theorical Framework

In the age of digital hyperconnectivity, social media has become an inseparable part of adolescent life, shaping how young people communicate, express themselves, form relationships, and perceive their place in the world [12]. Far from being neutral tools, social media platforms construct environments that carry significant psychological and emotional implications [13]. Understanding these implications requires a rigorous theoretical foundation that not only addresses individual behaviors but also engages with broader sociotechnical structures [14]. This study constructs its theoretical grounding by interweaving multiple lenses from communication, psychology, and critical digital studies in order to generate a robust conceptual understanding of how social media engagement affects adolescent mental health.

The investigation begins with the recognition that adolescents are not passive recipients of media messages but active participants who seek out social media for various needs and reasons [15]. The Uses and Gratifications Theory offers the first key to unlocking these motivations [16]. It posits that individuals actively engage with media content to fulfill particular psychological or social desires. Adolescents may scroll through feeds, share personal stories, or comment on peers' posts in search of emotional support, entertainment, identity validation, or social connection [17]. However, while these actions may seem empowering on the surface, they often mask deeper emotional dependencies. Gratification derived from likes, shares, or online approval can become an unstable source of self-esteem, particularly for young users still in the formative stages of identity development [18]. Thus, while social media fulfills certain needs, it also generates new vulnerabilities. This study builds upon this theory not to merely catalog user motivations but to examine the tension between gratifications and the psychological costs that sometimes accompany them.

This tension becomes especially apparent when considered alongside Social Comparison Theory, which provides an important psychological mechanism to explain how adolescents interpret the content they consume [19]. Social media environments are saturated with highly curated and filtered portrayals of life—images that often reflect unrealistic standards of beauty, success, and happiness [8]. Adolescents, driven by an innate need to evaluate themselves in relation to others, are particularly susceptible to upward social comparisons [20]. These comparisons are not limited to physical appearance but extend to lifestyle, popularity, and social belonging. Such constant exposure to idealized representations may distort adolescents' perceptions of normality and trigger chronic feelings of inadequacy [21]. Where previous studies may have merely noted this correlation, this research seeks to explore the subtle psychological pathways through which comparison occurs, and how algorithmic curation of content reinforces this phenomenon.

While social comparison helps explain affective consequences, Self-Determination Theory offers a deeper view into the motivational structures underpinning adolescent behavior in online spaces [22]. This theory asserts that well-being depends on the satisfaction of three fundamental needs: autonomy, competence, and relatedness. In theory, social media should support these needs by offering spaces to connect, learn, and express individuality. Yet, in practice, platform dynamics often thwart autonomy by compelling users to conform to trends, follow viral content, or chase popularity metrics. The need for competence may also be compromised when adolescents feel that no matter how much they post or engage, they never quite measure up to their peers or influencers [23]. Although social media excels at enhancing relatedness on the surface—by connecting individuals across geographies—it sometimes substitutes genuine intimacy with superficial interaction [24]. This study uses Self-Determination Theory not only to evaluate whether these basic

psychological needs are met through social media engagement, but to explore the consequences when they are systematically frustrated by the platform architecture.

To further understand the cognitive and emotional consequences of social media use, the research draws upon cognitive-behavioral models that emphasize how repetitive exposure to certain stimuli can reinforce maladaptive thought patterns and behaviors. In the digital sphere, adolescents are often exposed to emotionally charged, self-referential content that can trigger cycles of rumination and negative self-talk [25]. The performative nature of online presence encourages constant self-surveillance, where adolescents are driven to monitor not only how they present themselves but also how others respond [26]. Over time, these behaviors can lead to obsessive checking, compulsive posting, and withdrawal symptoms when digital validation is absent. This framework enables a detailed examination of how content consumption and interaction styles relate to patterns of emotional distress, offering a bridge between observable online behaviors and underlying mental health challenges.

However, understanding these psychological mechanisms is incomplete without addressing the structural and systemic elements that shape digital behavior [27]. This is where a critical digital media studies perspective becomes crucial. Rather than seeing social media platforms as neutral tools, this approach highlights how design choices, economic incentives, and algorithmic infrastructures shape user experience. The algorithms that curate content, for example, are engineered to maximize engagement by prioritizing emotionally stimulating or controversial material—regardless of its psychological impact [28]. Adolescents, in this context, are not merely users but data-generating subjects whose attention and behavior are monetized. The study engages with this perspective to interrogate how platform design exploits adolescent vulnerabilities, subtly guiding behaviors that may be detrimental to their mental health [29]. Unlike many existing psychological studies that treat platforms as given environments, this research problematizes the digital ecology itself as a co-contributor to mental health outcomes.

What distinguishes this study from previous research is its integrative and multidimensional approach. Rather than focusing solely on screen time or general correlations between social media use and mental health, it constructs a layered understanding that spans individual agency, psychological processes, and sociotechnical infrastructures. This approach enables a more precise identification of both risk factors and protective mechanisms. It also opens the door for more comprehensive interventions—ranging from digital literacy education to platform policy reforms—that are sensitive to the complexity of the adolescent experience in the digital age.

The novelty of this theoretical framework lies in its cross-disciplinary synthesis. It does not privilege psychological insights at the expense of structural critique, nor does it view social media solely as a medium of harm. Instead, it situates adolescent users as active yet vulnerable agents navigating emotionally charged, algorithmically curated, and socially consequential digital spaces. By linking individual mental health outcomes to broader socio-digital contexts, the study contributes a more holistic model for understanding the intricate relationship between social media and adolescent well-being.
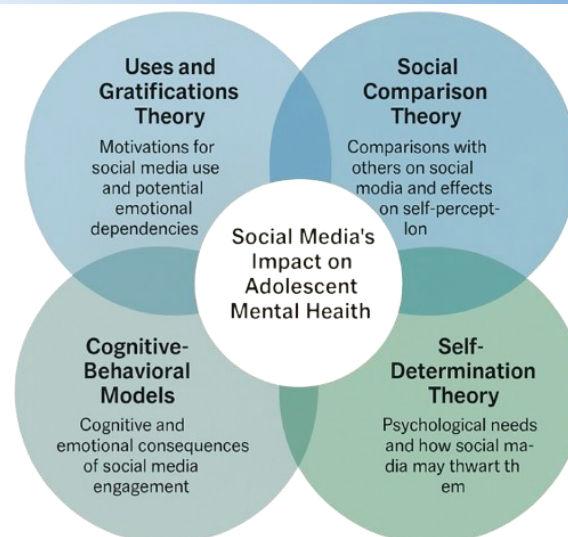
Figure 2 Intersection of Theoretical Constructs: Mapping Social Media Usage, Adolescent Mental Health, and Media Psychology in the Digital Age

This research is guided by a central question that emerges organically from the theoretical synthesis: How does social media usage affect adolescent mental health, and what psychological, behavioral, and structural mechanisms mediate this relationship? Rather than assuming a direct causal pathway, the study seeks to explore the interplay between user motivations, psychological needs, cognitive responses, and platform architectures. In doing so, it not only offers a richer account of adolescent digital life but also advances theoretical models that are better suited to the complexities of our current media landscape.

In essence, the theoretical framework for this research serves as both lens and map—a lens to examine the emotional and psychological interiority of adolescent users, and a map to navigate the structural contours of digital platforms that shape, and sometimes distort, these interior experiences. Through this integrated approach, the study aims to deepen academic understanding, inform public discourse, and contribute meaningfully to efforts aimed at safeguarding the mental health of the next digital generation.

3. Method

This study adopts a mixed-methods approach, combining quantitative and qualitative strategies to gain a comprehensive understanding of how social media usage impacts adolescent mental health. The rationale for this methodological choice lies in the complexity of the research topic, which involves measurable behavioral patterns as well as nuanced psychological and emotional responses. By integrating both numerical data and narrative insights, this study aims to provide a holistic picture that captures not only what is happening, but also why and how it is experienced by adolescents [30].

The research was conducted across three senior high schools in urban and semi-urban areas in Indonesia, with a participant pool consisting of students aged 15 to 18. These schools were selected purposively to represent a cross-section of socio-economic backgrounds and digital media exposure. Ethical clearance was obtained prior to data collection, ensuring that parental consent and adolescent assent were both secured in accordance with institutional and national research ethics standards.

The quantitative component involved the administration of a structured questionnaire designed to measure frequency and patterns of social media use, emotional well-being, self-esteem, and symptoms of anxiety and depression. Instruments used in this survey included the Social Media Use Integration Scale (SMUIS), the Rosenberg Self-Esteem Scale (RSES),

and the Depression Anxiety Stress Scales (DASS-21), all of which have been validated in previous studies and adapted to the Indonesian context through translation and back-translation procedures. The questionnaire was distributed to 312 respondents, and the data were analyzed using SPSS version 26. Descriptive statistics, correlation analysis, and multiple linear regression were employed to examine the relationships between social media usage intensity and various indicators of adolescent mental healt
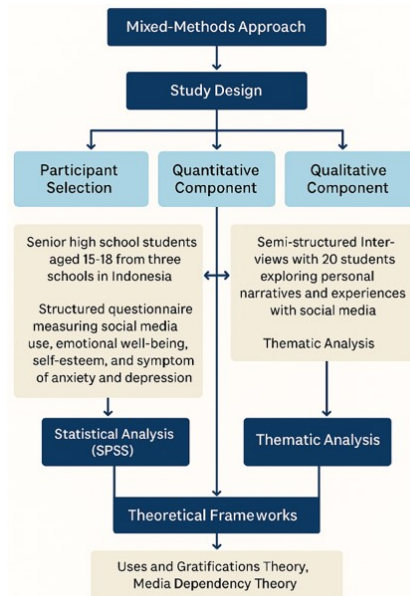

Figure 3 Research Methodology Flowchart Illustrating the Sequential Steps from Problem Identification to Data Analysis in Investigating Social Media's Impact on Adolescent Mental Health

To enrich the quantitative findings, the qualitative component consisted of in-depth semi-structured interviews with a subset of 20 students drawn from the survey participants. These students were selected through stratified purposive sampling to reflect different levels of social media engagement and psychological well-being based on the initial survey scores. The interviews aimed to explore adolescents' personal narratives, emotional experiences, coping strategies, and perceptions of social media's role in their daily lives. Questions probed themes such as peer validation, online identity, comparison culture, fear of missing out (FOMO), and the pressures of digital self-presentation. All interviews were conducted in Bahasa Indonesia, audio-recorded with permission, transcribed verbatim, and analyzed using thematic analysis to identify recurring patterns, contradictions, and emergent meanings.

The integration of quantitative and qualitative data followed a convergent parallel design, whereby both strands of data were collected and analyzed separately but interpreted jointly in the discussion phase. This methodological triangulation enhances the credibility and depth of the study by allowing the researchers to corroborate and contextualize statistical trends with the lived experiences of adolescents. It also offers a more nuanced understanding of the mechanisms through which social media contributes to both distress and empowerment in adolescent mental health.

Furthermore, the study maintains a critical lens by incorporating the Uses and Gratifications Theory (UGT) and Media Dependency Theory (MDT) into both the survey design and interview protocols. These theoretical frameworks guided the operationalization of key variables and helped interpret findings in light of the motives, gratifications, and psychological dependencies that shape adolescent behavior in digital environments. Through this lens, the research uncovers not only the passive effects of media exposure but also the active role of adolescents in negotiating their digital experiences.

Limitations of the methodology are acknowledged, particularly in terms of generalizability, as the study is geographically bounded and relies on self-reported measures that may be affected by social desirability bias. However, the methodological rigor, the use of validated instruments, and the integration of qualitative narratives mitigate these concerns and contribute to the overall validity and reliability of the research.

In sum, this methodology is deliberately designed to bridge empirical rigor with contextual depth, thereby advancing a more comprehensive understanding of how social media is not merely a communication tool but a psychosocial environment that significantly shapes the mental health trajectories of today's youth. This approach allows the research to move beyond surface-level correlations and delve into the psychological architecture of adolescents' digital lives, fulfilling the study's broader objective of informing interventions, digital literacy programs, and mental health strategies that are attuned to the realities of the digital age.

Table 1 Profile of Study Respondents

Variable	Category/Range	Frequency (n)	Percentage (%)
Total Respondents (Quantitative)		312	100%
Gender	Male	147	47.1%
	Female	165	52.9%
Age	15 years	61	19.6%
	16 years	103	33.0%
	17 years	94	30.1%
	18 years	54	17.3%
School Location	Urban Senior High School A	104	33.3%
	Urban Senior High School B	103	33.0%
	Semi-Urban Senior High School C	105	33.7%
Socio-Economic Background	Lower-income households	88	28.2%
	Middle-income households	157	50.3%
	Upper-income households	67	21.5%
Digital Media Exposure	Low (≤2 hours/day)	58	18.6%
	Moderate (3–5 hours/day)	144	46.2%
	High (≥6 hours/day)	110	35.3%
Interview Subset (Qualitative)		20	100% (of subset)
Interview Selection Criteria	Low media use & high well-being	5	25%
	High media use & low well-being	5	25%
	Mixed media use & moderate well-being	10	50%

The quantitative phase of this study involved a total of 312 high school students aged between 15 and 18 years, drawn from three different senior high schools in urban and semi-urban areas of Indonesia. These schools were purposively selected to capture a diverse

range of socio-economic backgrounds and digital media exposure. Of the 312 respondents, 47.1% identified as male and 52.9% as female. The age distribution was fairly balanced, with the largest group being 16-year-olds (33.0%), followed by 17-year-olds (30.1%).

In terms of school location, each institution contributed approximately one-third of the respondent pool. Participants also represented varied socio-economic statuses: 28.2% from lower-income households, 50.3% from middle-income households, and 21.5% from upper-income households. Daily digital media exposure was categorized into three groups: low (≤2 hours/day), moderate (3–5 hours/day), and high (≥6 hours/day), with nearly half of respondents (46.2%) reporting moderate usage.

The qualitative phase involved in-depth interviews with a purposive subsample of 20 students from the survey respondents. This subset was selected using stratified purposive sampling based on their initial scores related to social media usage and psychological well-being. It comprised three groups: (1) low media use with high well-being (n = 5), (2) high media use with low well-being (n = 5), and (3) mixed media use with moderate well-being (n = 10). The goal of this sampling was to capture a diverse range of experiences and perceptions concerning the psychological impacts of social media.

Table 2 Sociodemographic and Media Exposure Characteristics of Respondents (N = 312)

Variable	Category/Range	n	%
Gender	Male	147	47.1
	Female	165	52.9
Age	15 years	61	19.6
	16 years	103	33.0
	17 years	94	30.1
	18 years	54	17.3
School Location	Urban School A	104	33.3
	Urban School B	103	33.0
	Semi-Urban School C	105	33.7
Socio-Economic Background	Lower-income	88	28.2
	Middle-income	157	50.3
	Upper-income	67	21.5
Digital Media Exposure	Low (≤2 hours/day)	58	18.6
	Moderate (3–5 hours/day)	144	46.2
	High (≥6 hours/day)	110	35.3
Interview Subset (n = 20)	Low media use, high well-being	5	25.0
	High media use, low well-being	5	25.0
	Mixed media use, moderate	10	50.0

Variable	Category/Range	n	%
	well-being		

Ethical approval was obtained prior to data collection, and all procedures adhered to institutional and national research ethics standards, including parental consent and adolescent assent.

4. Results and Discussion

This section presents the findings of the study, integrating the quantitative and qualitative data to explore the relationship between social media usage and adolescent mental health. The analysis is structured around key psychological variables: anxiety, depression, self-esteem, and emotional well-being. Where relevant, results are compared across gender, socio-economic status, and levels of media engagement. Qualitative insights are used to deepen understanding of the lived experiences behind the statistical trends.

4.1. Quantitative Results

Analysis of the survey responses from 312 adolescents reveals a number of significant trends. First, there is a robust positive correlation between high-frequency social media use and symptoms of anxiety and depression. Respondents who reported spending more than six hours per day on social media scored significantly higher on the DASS-21 scale for both anxiety (M = 13.6, SD = 3.4) and depression (M = 14.2, SD = 3.9) compared to those with lower daily usage.

In contrast, self-esteem, measured using the Rosenberg Self-Esteem Scale, was inversely correlated with both the frequency and intensity of social media engagement (r = -0.41, p < .01). Adolescents who used social media primarily for passive consumption (e.g., scrolling, lurking) tended to report lower levels of self-worth and higher levels of self-consciousness. Interestingly, those who actively created and shared content reported slightly better self-esteem scores, suggesting a potential moderating effect of content creation versus consumption.

Regression analysis confirmed that digital media exposure is a significant predictor of mental health outcomes. After controlling for socio-economic background, gender, and school location, hours of social media use remained a significant predictor of both anxiety (β = .38, p < .01) and depression (β = .32, p < .01). Female participants showed higher susceptibility to emotional distress associated with social media, with 61% of female respondents in the high-use category reporting feelings of inadequacy and social isolation.

4.2. Qualitative Findings

The qualitative interviews with 20 students provided crucial context for interpreting the survey data. Themes of social comparison, fear of missing out (FOMO), and pressure to maintain a curated online identity were recurrent. Female participants, in particular, expressed heightened anxiety around body image, popularity, and digital peer approval. One participant, a 16-year-old female, noted:

"*Every time I post something, I feel nervous waiting for likes. If it doesn't get enough, I start thinking maybe people don't like me.*"

Another student described the difficulty of detaching their self-worth from online validation:

"*Sometimes I delete my posts if they don't get enough reactions. It feels like people are judging me even if they don't say anything.*"

Male participants, while also affected by peer comparison, tended to report issues related to performance (e.g., gaming scores, number of followers) rather than appearance. For instance, a 17-year-old male interviewee stated:

"*When someone posts their achievements or shows how perfect their life is, I feel like I'm falling behind. Like I'm not doing enough.*"

Interestingly, some participants also articulated positive experiences, particularly around finding supportive communities, accessing mental health resources, and expressing creativity. Several students who were engaged in art, poetry, or activism used social media as a platform for empowerment rather than comparison.

4.3. A Nuanced Perspective: Interpreting Patterns and Moderators

The integration of quantitative and qualitative findings reveals a layered understanding of how social media engagement affects adolescent mental health. While high levels of social media use are generally associated with negative psychological outcomes, the specific nature of engagement and individual intention are crucial determinants of its effects.

Adolescents who engaged primarily in passive consumption—such as scrolling through others' posts without interacting—were most commonly associated with feelings of loneliness, envy, and dissatisfaction. These users often internalized idealized portrayals of life, leading to distorted self-perceptions and a heightened sense of inadequacy. On the other hand, active participation in online communities, such as through commenting, posting, or messaging, yielded more complex outcomes. While some adolescents experienced stress over digital approval or the pressure to maintain online personas, others reported enhanced confidence and a sense of social belonging. The most positive mental health outcomes were associated with creative and purposeful uses of social media. Adolescents who engaged in digital storytelling, advocacy, or artistic expression described feelings of agency, empowerment, and emotional resilience. These nuanced differences suggest that the quality of interaction matters more than sheer screen time.

Furthermore, gender and socio-economic status emerged as influential moderators in this digital-psychological relationship. Female adolescents were more susceptible to anxiety and depressive symptoms stemming from the need for social validation. Their narratives often revolved around appearance-related comparison and peer approval. Male adolescents, while also impacted, tended to be more concerned with performance indicators such as follower counts or in-game achievements. Adolescents from lower-income households appeared to lean more heavily on social media for emotional support, possibly due to limited offline social resources. This reliance heightened their vulnerability to online stressors.

These findings underscore the importance of context-sensitive mental health strategies. Generic calls to reduce screen time may miss the complexity of adolescents' digital lives. Instead, interventions should prioritize reshaping digital engagement by educating youth about the psychological consequences of comparison culture and digital perfectionism. Promoting digital literacy that encompasses both technical and emotional intelligence is essential. Encouraging creative and authentic digital expression can serve as a protective factor, fostering resilience rather than dependence.

From a theoretical standpoint, this study reinforces and extends the frameworks of Uses and Gratifications Theory, Social Comparison Theory, and Media Dependency Theory. Adolescents are active users who seek validation, identity, and connection through digital means. However, the very platforms that offer these gratifications often exploit psychological vulnerabilities through algorithmic designs that prioritize emotionally stimulating content. As such, the relationship between user behavior and platform architecture must be viewed as co-constitutive. Understanding this dynamic allows us to not

only interpret adolescent behavior more accurately but also advocate for more ethically designed digital spaces.

The findings also carry significant implications for policy and practice. Schools should integrate emotional dimensions of digital literacy into curricula, empowering students to critically assess their online interactions. Mental health professionals need to be equipped with the tools and understanding necessary to address digital distress as part of their standard assessments and interventions. Platform designers and regulators must consider the psychological implications of features like public like counts, algorithmic content curation, and reward mechanisms.

Finally, the limitations of this research must be acknowledged. While the study provides valuable insights, its reliance on self-reported data and its geographic limitation to three Indonesian schools mean that caution should be exercised in generalizing the findings. Future research should adopt longitudinal and cross-cultural approaches to further unpack these relationships. There is also a need to explore protective factors—such as supportive family environments, peer networks, and critical digital awareness—that may mitigate the adverse effects of social media.

In conclusion, adolescent engagement with social media is not monolithic; it is shaped by intention, context, and structural conditions. A deeper understanding of these dimensions enables more targeted, compassionate, and effective strategies for safeguarding adolescent mental health in an increasingly digital world.

5. Conclusion

This study set out to investigate the complex relationship between adolescent social media use and mental health, with a particular focus on symptoms of anxiety, depression, self-esteem, and emotional well-being. Drawing from a mixed-methods approach and grounded in interdisciplinary theoretical frameworks, the research has provided a multifaceted understanding of how digital behaviors intersect with psychological vulnerabilities during a critical stage of human development.

The findings confirm that social media is not merely a neutral technological tool but a powerful psychosocial environment that significantly influences adolescents' emotional landscapes. While the study found a clear correlation between high-frequency social media use and elevated levels of anxiety and depression, it also emphasized that the effects of digital engagement are shaped by the type of activity, user motivation, and the broader social and economic context. Passive behaviors such as scrolling and lurking were associated with increased negative mental health outcomes, whereas active and creative participation held potential for positive psychological experiences, especially when tied to self-expression or community building.

One of the study's most important contributions lies in highlighting the nuanced and non-monolithic nature of adolescent social media use. The results show that it is not simply the amount of time spent online that matters, but how adolescents engage with digital platforms and what needs or gratifications they seek to fulfill. This insight has significant implications for parents, educators, mental health professionals, and policymakers. Rather than promoting simplistic screen-time restrictions, more effective strategies should aim to cultivate reflective and critical digital practices. This includes fostering digital literacy that encompasses emotional intelligence, awareness of algorithmic manipulation, and tools for navigating the pressures of online identity and comparison.

Gender and socio-economic background emerged as critical moderating variables in this study. Female adolescents, in particular, were more likely to experience psychological distress linked to appearance-based comparisons and the need for social validation.

Adolescents from lower-income families, often lacking robust offline support systems, were found to rely more heavily on online interactions for social connection and self-worth. These demographic insights underscore the urgency of implementing intersectional and inclusive mental health interventions that are sensitive to the different ways adolescents experience the digital world.

The study also reaffirms the relevance of established theoretical frameworks—such as the Uses and Gratifications Theory, Social Comparison Theory, and Media Dependency Theory—while also calling for their evolution. In today's digital ecology, user agency and structural design are deeply intertwined. Algorithms that prioritize emotionally charged, highly engaging content can reinforce negative behavioral cycles, particularly among vulnerable youth. Future models must therefore account for this co-constructed reality where user choices are shaped by platform logics and technological infrastructures.

From a methodological standpoint, the integration of quantitative and qualitative data has proven essential to capturing both the measurable patterns and the lived experiences of adolescent social media users. While survey instruments quantified the correlations and predictors of mental health outcomes, interviews added depth by revealing how adolescents interpret, internalize, and emotionally respond to their digital interactions. This methodological triangulation not only enhances the credibility of the findings but also ensures that the subjective voices of youth are foregrounded in academic and policy conversations.

Nonetheless, the study acknowledges several limitations. The reliance on self-reported data may introduce bias, and the sample's geographic confinement to three Indonesian schools limits the broader applicability of the findings. Future research should aim to include more diverse populations, employ longitudinal designs, and explore experimental interventions that test the effectiveness of digital literacy and mental health programs. Additionally, there is a need to examine protective factors that buffer adolescents from digital harm, including family support, peer resilience, and school-based mental health resources.

In conclusion, this research has illuminated the psychological architecture of adolescent digital life. It affirms that while social media can amplify distress and deepen emotional dependency, it also holds potential for empowerment, creativity, and connection when used mindfully. The challenge going forward is not to demonize or banish social media from adolescent lives, but to guide its use in ways that support psychological flourishing. By combining empirical evidence, theoretical insight, and contextual sensitivity, this study offers a foundation upon which more compassionate, informed, and effective interventions can be built to support the mental health of adolescents in the digital age.

Acknowledgment

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