The Impact of Social Media Use on Adolescent Mental Health: The Mediating Role of FOMO

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Abstract. As the penetration rate of social media among teenagers continues to rise (with global teenage users accounting for 87%), its potential impact on mental health has become a focal point of academic and societal attention. As "digital natives," teenagers are frequently exposed to the virtual social environments constructed by social media, leading to psychological issues such as depression and anxiety that urgently require in-depth analysis. This study focuses on "fear of missing out" (FOMO) as a core mediating variable, systematically integrating over 30 empirical studies from both domestic and international sources over the past five years. Using bibliometric and meta-analysis methods, it explores the dynamic association mechanisms between social media usage frequency, usage motives (active socializing vs. passive browsing), and adolescent mental health. The findings indicate that the impact of social media on adolescent mental health is context-dependent, with FOMO serving as the core link between behavioral patterns and psychological states. Future research should combine longitudinal tracking and neuroscientific techniques to further reveal differences in the effects of various platforms, and develop precise intervention strategies from dimensions such as digital literacy education in schools and the development of technology warning functions, to help adolescents balance virtual social interactions with real life.

Keywords: Social media use, adolescent mental health, fear of missing out, FOMO, empirical research

1. Introduction

By 2024,87% of global teenagers are already social media users, with their usage deeply integrated into social interactions, entertainment, and information gathering. However, the mental health issues, such as depression and loneliness, caused by excessive use continue to be a significant concern [1]. FOMO, a typical psychological response to social media use, refers to the persistent anxiety individuals experience due to the fear of missing out on others' positive experiences. The mediating role of FOMO in the relationship between social media use and mental health has been preliminarily confirmed, but the exact mechanisms are not yet fully understood [2,3].

At the theoretical level, integrating empirical studies from the past five years can refine the association mechanism of "social media use-FOMO-mental health"; at the practical level, it provides

targeted theoretical support for interventions in adolescents' online behavior, helping to balance digital life with real-life mental health. The focus is on the correlation between social media usage frequency, motivation, and adolescent depression and anxiety, using FOMO as a mediating variable to analyze the differential impacts of different usage scenarios (active socializing/passive browsing). Using a literature review method, this study systematically combs through empirical research from the past five years both domestically and internationally, combining quantitative data (such as Meta-analyses, longitudinal tracking) with qualitative mechanism analysis to explore causal pathways among variables. The research objectives include: first, clarifying the direct impact pathway of social media use on adolescent mental health; verifying the mediating effect of FOMO and individual differences in this relationship; and providing theoretical support for intervention strategies (such as digital literacy courses, family screen management).

2. The direct impact of social media use on adolescent mental health

2.1. The bidirectional relationship between frequency of use and psychological distress

Early studies suggested that the frequency of social media use is positively correlated with depression and anxiety [4]. For example, adolescents who use social media for more than 3 hours daily have a 2.3 times higher rate of depressive symptoms compared to those who use it less frequently [5]. However, recent research has found that this association is context-specific: passive browsing (such as scrolling through news feeds) is significantly associated with loneliness, while active interaction (such as sending messages or comments) may alleviate loneliness [6]. This suggests that the "quality" of social media use is more important than the "quantity," as mechanical browsing can trigger comparison psychology, whereas purposeful socializing promotes social connection.

On the one hand, under China's collectivism, users' social tasks and interpersonal relationships often generate significant stickiness due to reliance on social media. The disconnection from social media frequently leads to conflicts between family pressures and social obligations, thereby intensifying psychological contradictions. On the other hand, young users in different cities face varying levels of social media pressure. For example, young users in first-tier cities (facing intense competitive pressures) and those in third-and fourth-tier cities (confronting strong family ties). We need to conduct experimental studies to analyze the psychological differences among subgroups of users within the same cultural context after disconnection behavior, which can highlight the moderating role of cultural values.

Social media constructs an "idealized life picture" (such as carefully edited photos and boastful content), which can easily trigger social comparison among adolescents [7]. A longitudinal study of adolescents aged 12-18 showed that individuals who frequently browse others' "perfect lives" experienced a significant increase in self-identity confusion six months later [8]. This cognitive dissonance may further lead to a decline in self-esteem, forming a vicious cycle of "low self-esteem-overuse-psychological deterioration" [9].

3. The mediating role of FOMO: the transmission mechanism from behavior to psychology

Przybylski et al. first proposed that FOMO acts as a key mediator in the impact of social media use on mental health. When teenagers frequently perceive that others are engaging in more meaningful activities, FOMO activates the brains reward circuit, driving continuous refreshing behavior [10]. This compulsive use consumes cognitive resources, leading to distraction, decreased

sleep quality, and ultimately anxiety [11]. Meta-analyses show that FOMO accounts for 41% of the mediation effect between social media use and depression, confirming its central role [3].

The impact of FOMO varies significantly among individuals: adolescents with high neurotic traits are more sensitive to social cues and experience more severe psychological distress induced by FOMO [12]; in contrast, individuals with high family support can reduce their FOMO levels by 32% [13]. Furthermore, the characteristics of social media platforms (such as personalized content recommended by algorithms) can reinforce "information cocoons," further amplifying the FOMO effect [14].

4. Method

4.1. Questionnaire survey and data analysis

In recent years, the questionnaire method has seen significant development in studies of psychological variables related to social media such as FOMO. First, in terms of standardized measurement, research widely adopts mature scales to ensure reliability and validity. For example, the FOMO scale developed by Przybylski et al. has been validated by multiple studies and exhibits excellent psychometric properties. Additionally, through structured question design, researchers can uniformly define core concepts like "frequency of use" and "active/passive use," effectively reducing the interference of subjective bias.

Second, the questionnaire method demonstrates strong potential for dynamic tracking. Longitudinal surveys, such as those conducted every six months, can capture the changes in individuals' psychological states over time, making them more sensitive to time than cross-sectional studies. For example, Steers et al. found through a longitudinal study that passive use of social media has a delayed impact on self-identity, providing evidence for exploring causal mechanisms.

Third, the questionnaire method also excels in multi-variable integration capabilities. Researchers can simultaneously collect multidimensional data such as demographic characteristics (e.g., age, gender), family environment (e.g., family support), and platform usage habits, facilitating further analysis of individual differences and potential moderating factors. For example, Nesi et al. and Chen et al. both integrated multiple variables in their respective studies to reveal the interactive effects of different factors on FOMO.

In addition, the questionnaire method continues to innovate in research design, demonstrating the potential for integrating mixed methods. For example, Kross et al. introduced APP usage log data into the questionnaire, combining objective records of screen time and interaction types to further distinguish between "active interaction" and "passive browsing." They validated relevant hypotheses through actual usage records, thereby enhancing the objectivity of behavioral measurement.

In terms of technology-empowered upgrades, researchers have developed real-time questionnaire tools for mobile devices to effectively capture the immediate FOMO experience after swiping through information streams, reducing recall bias. For example, Lee et al. used Ecological Momentary Analysis (EMA) technology to dynamically track the immediate impact of algorithmically recommended content on FOMO, providing technical support for exploring the relationship between social platform algorithms and user psychology.

At the same time, cross-cultural comparative studies are also deepening. Questionnaire research with multi-country samples has revealed the moderating role of cultural background on FOMO experiences. For example, Chen et al. found that in collectivist cultures, family support plays a more significant role in alleviating FOMO, providing empirical evidence for future cross-cultural intervention strategies. By setting up questionnaires to investigate users FOMO, JOMO, reverse

FOMO psychology, as well as social disconnection behaviors, social media usage behaviors, and the psychological experiences and changes of user groups, descriptive statistical analysis, SPSS correlation, text analysis, and regression analysis were employed. The expected results of the survey were ultimately presented. Through the analysis of the survey results, preliminary answers can be provided to the research questions (especially regarding the psychological state of participants before and after disconnection, the impact of social media disconnection behaviors and duration, and the investigation of reverse FOMO psychology). However, further research questions still need to be verified through experiments.

To explore the relationship between contemporary individuals' social media usage and behaviors of "digital disconnection," this study designed a set of structured questionnaire items aimed at collecting data across four dimensions: platform usage habits, behavioral frequency, voluntary disconnection experiences, and subjective perceptions.

First, questions such as "Which social media platforms do you use regularly?" and "How much time do you spend on social media daily?" were designed to capture the types and frequency of platform use, establishing a basic profile of the respondent's level of digital media exposure.

Second, the item "Have you ever voluntarily disconnected from social media?" serves as a grouping variable, prompting respondents to reflect on their own experiences of media disengagement.

Building on this, the question "What were the main reasons and duration of your social media disconnection?" aims to identify behavioral motivations, including but not limited to information overload, psychological stress, social anxiety, and attention management. Meanwhile, the item "How did you feel after disconnecting?" focuses on the subjective changes experienced, such as reduced anxiety, improved concentration, or increased loneliness.

The overall structure of the questionnaire follows a three-stage logic—from media use intensity, to disconnection motivation, to post-disconnection effects—thus constructing a dynamic framework for understanding the phenomenon of voluntary digital disconnection. This provides a foundation for subsequent statistical analysis and theoretical modeling.

4.2. Result

The results of the survey are as follows:

Based on the analysis of 117 valid questionnaire responses, the demographic distribution of participants reveals a relatively balanced gender ratio, with 54.7% identifying as female and 45.3% as male. The majority of participants fall within the age range of 21–25 (32.48%) and 31–40 (30.77%), followed by 26–30 (20.51%), while younger respondents aged 15–20 account for 8.55%.

In terms of platform usage, WeChat (71.79%) and Douyin (59.83%) emerged as the most frequently used social media platforms, followed by QQ (52.14%), Xiaohongshu (43.59%), and Weibo (35.04%). Regarding usage duration, 40.17% of users reported spending 3–5 hours per day on social media, while 35.9% reported 1–3 hours.

A significant portion of participants (63.25%) reported having actively attempted to disconnect or reduce their social media usage. Among these, the most common disconnection behaviors included uninstalling apps (51.35%), turning off notifications (41.89%), and setting time limits (40.54%). However, only a small fraction (1.56%) engaged in long-term disconnection, while 43.75% disconnected 1–2 times per week, and 32.81% maintained regular disconnection intervals daily.

Regarding motivation, users primarily disconnected to improve work or study efficiency (64.06%), reduce anxiety associated with online content (57.81%), and enhance offline social or personal experiences (54.69%).

This data indicates a growing awareness among users about the psychological and behavioral impacts of prolonged social media exposure, with many adopting partial disconnection strategies as a form of digital self-regulation. To further understand user preferences regarding the anxiety-relief functions of social media, the study included a multiple-choice question: "What features would you like social media platforms to offer to help reduce your anxiety?" Results showed that the most desired feature was "simplifying content, improving information filtering, and providing high-quality content" (70.09%), followed by "offering usage time statistics and reminder functions" (64.10%). "Simplifying recommended content" also received some support (37.61%). In contrast, only 30.77% of users expressed interest in a "break reminder" feature, indicating that users place much higher expectations on content environment optimization than on time management mechanisms.

Additionally, in response to the question "Would you be willing to try a 'disconnect for one hour a day' feature introduced by social media platforms?", 63.25% of participants answered "depends on the situation," 20.51% said "yes," and only 16.24% responded "no." These results suggest that most users are open or cautiously receptive to such a function, indicating that "moderate disconnection" is increasingly seen as a viable digital well-being strategy.

5. Discussion

Despite the majority of studies supporting the path "social media use → FOMO → psychological distress," there is still controversy: some scholars argue that FOMO may be a consequence rather than a mediator, meaning that adolescents with poorer mental health are more likely to experience fear of missing out. Moreover, most existing studies are cross-sectional designs, making it difficult to establish causal relationships; the mechanisms by which FOMO operates in short video usage scenarios on emerging platforms (such as TikTok and Instagram Reels) may differ and require further exploration.

Based on the above conclusions, it is recommended to intervene in three aspects: (1) at the school level, implement "digital literacy" courses to teach young people how to identify the authenticity of information and develop proactive social skills; (2) at the family level, establish a "screen time agreement" to reduce anxiety caused by FOMO through parent-child communication; (3) at the technology level, develop FOMO warning functions, such as alerting users to the potential risks of excessive browsing.

6. Conclusion

In the digital flood, disconnection is not only an isolated island to escape anxiety but also a lighthouse for rebuilding self-control. This study illuminates the way back to inner peace for a generation lost in the ocean of information. The research systematically integrates findings from empirical studies over the past five years, revealing that the impact of social media use on adolescent mental health exhibits significant heterogeneity: the association between usage frequency and psychological distress is moderated by behavioral patterns; passive browsing exacerbates loneliness and self-identity crises through induced social comparison, while active social interaction may alleviate negative emotions; FOMO serves as a core mediating factor, accounting for 41% of the mediation effect between social media use and depression/anxiety, with individual neurotic traits, family support, and platform algorithm characteristics all significantly moderating the strength of this pathway.

Theoretical Level: Revealing the dynamic transmission mechanism of "behavioral patterns → FOMO → psychological state," it supplements the multi-level explanatory framework of how social media affects adolescent mental health, validating the theoretical hypothesis of differentiated effects in usage scenarios. Practical Level: It provides empirical evidence for schools to implement digital literacy education (such as distinguishing information authenticity), families to establish screen time management mechanisms, and platforms to develop FOMO warning functions (such as timeout reminders), contributing to the construction of a collaborative intervention system involving "society-family-technology."

Method Innovation: Strengthen longitudinal tracking and cross-cultural comparative studies, combining neuroscientific techniques (such as fMRI monitoring of reward circuit activation) to accurately decipher the neurophysiological basis of FOMO. Scenario Expansion: In response to the "instant feedback" feature of short video platforms like TikTok, explore the unique mechanisms by which fragmented content consumption affects FOMO, focusing on the psychological impact of emerging social behaviors among Generation Z (such as virtual image socializing and bullet-screen interaction). Intervention Precision: Build predictive models for adolescent FOMO risk using machine learning, develop personalized digital intervention tools (such as cognitive behavioral therapy apps), and achieve early identification and dynamic intervention for high-risk groups.

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