

Virtual Socialization and Adolescent Real-life Interpersonal Communication: Exploring the “Active Online but Silent Offline” Phenomenon

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Abstract:

Although the emergence of digital devices and social media has changed adolescents' social experiences, adolescence is a crucial time for the development of interpersonal skills. As demonstrated by the “active online but silent offline” phenomena, virtual socialisation may foster a gap between online and offline interactions even while it also presents communication opportunities. Through three mechanisms—cognitive shaping, skill transfer conflict, and emotional connection reconfiguration—this study investigates the effects of virtual socialisation on interpersonal interactions in real life. Overuse of social media, as seen by its high frequency, emotional reliance, and time commitment, might change how teenagers view social norms, make it more difficult to apply their online communication abilities in offline settings, and erode the depth of connections in real life. The literature identifies a number of factors that contribute to teenage social media addiction, such as social relationships and well-being (compensation for weak offline bonds), environmental factors (family atmosphere, peer interaction, and school environment), and multi-stakeholder influences (parents, peers, and practitioners). These dynamics are further shaped by moderating factors like age, gender, peer relationships, and computer literacy. Gaining knowledge of these intricate relationships helps one to understand how virtual socialisation can both support and impede social development in the actual world. The results emphasise the value of focused interventions, such as algorithmic behaviour nudges, family media supervision, and school-based curriculum, to encourage balanced social engagement and foster teenagers' healthy interpersonal development.

Keywords: Virtual socialization, adolescent, real-life interpersonal communication

1. Introduction

Adolescence is a critical period for developing interpersonal skills due to heightened neuroplasticity and social sensitivity. As individuals begin to explore social roles, establish intimate relationships, and refine communication strategies that lay the foundation for lifelong social functioning. In recent years, with the rapid popularization of digital technologies and social media platforms, virtual socialization has become an integral part of adolescents' daily lives.

However, this shift has also given rise to a growing separation between virtual and real socialization, most notably the "active online but silent offline" phenomenon — adolescents who are articulate, engaged, and socially adept in virtual spaces often struggle to initiate or maintain face-to-face interactions in real life.

This study focuses on exploring three key mechanisms through which virtual socialization influences real-life interpersonal communication: cognitive shaping (how online interaction patterns alter perceptions of social norms, such as normalization of low-emotion communication and misinterpretation of social cues); skill transfer conflict (whether virtual communication skills translate to offline contexts); emotional bond reconfiguration (how excessive online engagement affects the depth of real relationships) [1].

At its core, this research seeks to answer a critical question: Does virtual socialization serve as a supplement to real-life interaction, enriching adolescents' social experiences, or does it replace and erode the quality of offline relationships?

To address this question, the study raises specific research questions, including: How do habits formed through virtual socialization manifest in real-life social scenarios? Skill transfer conflict includes difficulty translating online-based emotional expression into real-time emotional articulation. Does the breadth of online social networks (e.g., number of friends, frequency of interactions) correlate with a decline in the depth of offline relationships (e.g., emotional intimacy, conflict resolution)?

Based on existing literature and theoretical frameworks, this study hypothesizes that excessive virtual socialization — defined as high-frequency, time-consuming, and emotionally dependent engagement — exerts significant negative impacts on the cognitive, skill, and emotional dimensions of adolescents' real-life socialization. Does virtual socialization function as a positive supplement to real-life interaction, or as a negative substitute that erodes offline relationships. Habits such as asynchronous turn-taking, abbreviated reliance, or avoidance of eye contact.

2. Drivers of Adolescent Social Media Addiction

Adolescence, marked by intense psychological development and social exploration, has become a high-risk group for social media addiction in the digital era. With the popularization of smart devices and the prosperity of social platforms, adolescents' daily life has gradually been infiltrated by virtual social interactions. However, excessive participation in virtual socialization not only occupies a lot of time and energy but also may induce a series of physical and mental problems, such as decreased learning efficiency, emotional instability, and alienation from real relationships. Exploring the driving factors behind adolescents' social media addiction is not only the key to solving this problem but also an important prerequisite for understanding the interaction between adolescents and the digital society. This part will focus on environmental influences and the role of social relationships, and deeply analyze the key factors leading to adolescents' excessive participation in virtual socialization, so as to lay a theoretical foundation for revealing the mechanism of virtual socialization's impact on real interpersonal communication [2].

2.1 Environmental Factors: the Hidden Impact Factor of Addiction

The living environment in which adolescents grow up, as an external system closely linked to their daily life, plays a crucial role in the formation of their social media usage habits. Chemmad et al. point out in their study on adolescent internet addiction that adolescent internet addiction is not an isolated individual behavior but is closely related to the living environment, involving a variety of external environmental variables such as family atmosphere, peer interaction, and school environment. These environmental factors interact and jointly shape adolescents' attitudes and behaviors towards social media [3].

Family atmosphere, as the first micro-environment for adolescents' growth, has a profound impact on their social media usage. On the one hand, the parent-child relationship pattern directly affects adolescents' dependence on virtual socialization. Families with frequent conflicts, lack of effective communication, or emotional indifference often make adolescents feel neglected and undervalued. In such an environment, adolescents are more likely to turn to social media to seek emotional comfort, to seek emotional comfort as a form of surrogate emotional regulation. For example, they can gain instant recognition and care through likes, comments, and private messages on social platforms, which to some extent makes up for the lack of

emotional support in real family relationships. On the other hand, parents' own digital behavior habits also have a subtle influence on adolescents. If parents are addicted to social media for a long time, ignoring parent-child interaction and family activities, adolescents will unconsciously imitate this behavior pattern, regarding high-frequency use of social media as a normal lifestyle, thus increasing the risk of addiction, such as parental emotional unresponsiveness or lack of empathetic responsiveness.

Peer interaction, as an important part of adolescents' social life, is another key environmental factor driving social media addiction. Adolescence is a period of strong desire for peer recognition and belonging. Peers' attitudes and behaviors towards social media often form a "group norm" that affects individual choices. If most peers in an adolescent's social circle are active users of social media, frequently sharing life dynamics, participating in online group activities, or discussing popular topics on the platform, the individual will be under implicit peer pressure. In order to avoid being excluded by the group or "out of touch", they have to increase their time and energy input in social media to keep up with the pace of peers. In addition, the "social comparison" phenomenon in peer interactions on social media also further stimulates adolescents' excessive participation. When seeing peers show off their "perfect life" on social media, adolescents are easy to generate anxiety and inferiority, and then try to improve their social status in the virtual world by over-participating in social media, which eventually falls into the trap of addiction [4].

The school environment, as an important place for adolescents' growth and education, also has an indelible impact on their social media addiction. Schools with a tense academic atmosphere and lack of extracurricular activities often make adolescents feel stressed and bored. In this case, social media has become an important way for them to relieve pressure and seek entertainment. They can temporarily escape from the heavy study tasks by browsing short videos, chatting with friends, or participating in online games on social platforms. In addition, the digital literacy education level of schools is also closely related to adolescents' social media addiction. Schools that lack effective digital literacy education cannot help adolescents establish correct social media usage concepts and skills, making them easy to be led by the functions and algorithms of social platforms, and then fall into the vortex of excessive use.

2.2 Social Relationships and Well-being: the "Compensation Mechanism" behind Addiction

Social relationships are an important source of adoles-

cents' well-being, and the quality of real social relationships directly affects their dependence on virtual socialization. Zhou et al. explored the connection between social relationships and internet addiction from the perspective of well-being, and pointed out that weak real social bonds may drive adolescents to seek compensation in virtual spaces [5]. This compensation mechanism reflects the psychological needs of adolescents for social support, emotional connection, and self-identity in the process of growth [6].

Weak real social bonds mainly manifest in the lack of depth and stability of interpersonal relationships in real life. In real social interactions, adolescents may face problems such as poor communication skills, lack of common topics, or being excluded by others, which makes it difficult for them to establish intimate relationships with others. For example, some adolescents are shy and introverted, and it is difficult for them to take the initiative to interact with others in face-to-face communication, resulting in few friends in real life. In this case, social media, with its characteristics of low pressure and high freedom, has become an ideal place for them to build social relationships. They can express themselves more freely on social platforms, find like-minded friends through interest tags, and establish relatively stable social connections, thus making up for the lack of real social relationships.

The lack of emotional support in real social relationships is another important reason for adolescents to seek compensation in virtual spaces. Adolescence is a period of frequent emotional fluctuations, and they urgently need emotional care and support from others. However, in real life, parents may ignore their emotional needs due to busy work, and peers may not be able to provide effective emotional support due to lack of experience. At this time, social media has become an important channel for them to obtain emotional support. They can share their joys and sorrows on social platforms, get comfort and encouragement from netizens, and even find professional emotional counseling services. These emotional supports from the virtual world can, to a certain extent, alleviate their emotional distress. But it should be noted that if over-relied on, it may make them more dependent on virtual socialization [7].

The lack of self-identity in real social relationships also drives adolescents to seek compensation in virtual socialization. Adolescence is a critical period for the formation of self-identity, and adolescents are eager to be recognized and affirmed by others. In real social interactions, they often receive negative evaluations or are ignored by others, which is easy to make them feel inferior and lose confidence. However, in the virtual world of social media, adolescents can shape an ideal self-image through selective

self-presentation. For example, they can show their excellent side by posting photos of their achievements, talents, or beautiful life, and obtain a large number of likes and compliments, thus satisfying their desire for self-identity. This kind of virtual recognition will further strengthen their motivation to participate in virtual socialization, making them gradually indulge in the virtual world and neglect the development of real social relationships, which may reinforce idealized self-concepts and contribute to real-world identity dissonance.

3. Multi-stakeholder Perspectives: the “Comprehensive Influence Network” of Addiction

Adolescent social media addiction is not a result of a single factor but is shaped by multiple factors from individuals, families, and society. The report on adolescent overuse of digital technology in Qatar (manara.qa, 2023) reveals the shaping effect of individual, family, and social factors on digital technology abuse from the perspectives of parents, adolescents, and practitioners, presenting a complex and multi-dimensional comprehensive influence network [8].

From the perspective of parents, their educational concepts and supervision methods have an important impact on adolescents' social media usage. Many parents lack a correct understanding of social media. Some parents regard social media as a “scourge” and adopt simple and rude prohibition methods, which easily arouse adolescents' rebellious psychology and make them use social media more secretly and excessively; other parents ignore the management of adolescents' social media usage due to lack of time or energy, allowing adolescents to use social media without restriction, which also increases the risk of addiction. In addition, parents' own digital literacy level also affects their ability to guide adolescents to use social media correctly. Parents who are not familiar with the functions and risks of social media cannot provide effective guidance and help for adolescents, making adolescents face the temptation of social media alone.

From the perspective of adolescents themselves, their individual psychological characteristics and needs are important internal drivers of social media addiction. Adolescence is a period of strong curiosity and desire for exploration, and the rich and diverse content and functions of social media are deeply attractive to them. They are eager to understand the latest trends, expand their horizons, and meet new friends through social media. At the same time, some adolescents have poor self-control ability, and it is easy to lose themselves in the colorful world of social

media, unable to control their usage time. In addition, some adolescents with negative psychological states such as loneliness, anxiety, and depression are more likely to rely on social media to escape from reality and seek psychological comfort, thus increasing the possibility of addiction. It should be noted that depression or anxiety are generally regarded as emotions or states rather than traits. From the perspective of practitioners, such as educators and social workers, the lack of effective intervention measures and support systems is an important reason for the difficulty in solving adolescents' social media addiction. In the education field, although some schools have carried out digital literacy education, the content is often simple and boring, which cannot really attract students' attention and improve their ability to use social media correctly. In the social field, there is a lack of professional institutions and teams to provide targeted help for adolescents with social media addiction. [9]. The existing psychological counseling and intervention services are either too expensive or insufficient in professional level, making it difficult for adolescents in need to get effective help. In addition, the serious lack of attention to adolescent social media addiction at the social level also makes this problem not get enough attention and support, which is not conducive to the formation of a good social environment for solving the problem, especially in regions where mental health resources are unevenly distributed.

4. Moderating Variables: the “Complex Adjuster” of Addiction Driving Forces

The driving mechanism of adolescent social media addiction is not a simple linear relationship but is adjusted by various variables, showing complex characteristics. Zhao et al. found in their study that peer relationships and gender play a moderating role in the reciprocal relationship between driving addiction and negative behaviors, which reflects the complexity between addiction driving factors and moderating variables. These moderating variables affect the strength and direction of the relationship between the driving factors and addiction behavior, making the formation process of addiction more complicated [10].

Peer relationships, as an important social resource for adolescents, have a significant moderating effect on the relationship between social factors and social media addiction. Good peer relationships can alleviate the impact of negative factors on adolescents and reduce the risk of addiction. For example, adolescents with good peer relationships can get sufficient social support and emotional comfort in real interactions, so they do not need to excessively rely on virtual socialization to meet their psycho-

logical needs. On the contrary, bad peer relationships will aggravate the impact of negative factors. Adolescents who are rejected or isolated by peers are more likely to feel lonely and inferior, and then turn to social media to seek comfort and recognition, thus increasing the possibility of addiction. People should also pay attention to the impact of media discourse on the “normalization” of adolescent behaviors, such as how media discourse normalizes excessive use as a generational behavior and how it may lead to the “normalization” of addictive behaviors.

Gender, as a basic demographic variable, also plays a moderating role in the driving mechanism of adolescent social media addiction. Due to differences in physiological and psychological characteristics between boys and girls, there are obvious differences in the motivation and behavior of using social media, which leads to differences in the impact of driving factors on them [11]. Girls are more inclined to use social media to maintain interpersonal relationships, share emotions, and obtain social support. Therefore, the lack of real social relationships and emotional support has a more significant impact on girls’ social media addiction. Boys are more interested in online games and competitive content on social media, so factors such as the attractiveness of game content and peer competition will have a greater impact on boys’ addiction. In addition, girls are more sensitive to social evaluation and are more likely to be affected by social comparison on social media, thus increasing the risk of addiction; while boys are more likely to be driven by the desire for excitement and achievement, and are more likely to be addicted to social media due to excessive pursuit of game scores or online status.

In addition to peer relationships and gender, there are other moderating variables that affect the driving mechanism of adolescent social media addiction, such as age, family economic status, and digital literacy. Adolescents with stronger self-awareness and self-control ability may be relatively weak; while younger adolescents are more likely to be influenced by the environment and peers. Families with better economic conditions can provide adolescents with more diverse life choices and development opportunities, reducing their excessive dependence on social media; while families with poor economic conditions may make adolescents more inclined to seek happiness and satisfaction in the low-cost virtual world of social media. Adolescents with high digital literacy can better recognize the risks and traps of social media and use social media more rationally; while adolescents with low digital literacy are more likely to be misled by the functions and algorithms of social media and then fall into addiction.

5. Conclusion

In conclusion, adolescent social media addiction is the result of the joint action of multiple factors. Environmental factors such as family atmosphere, peer interaction, and school environment provide the external conditions for addiction; the compensation mechanism formed by the lack of real social relationships and well-being is the internal motivation for addiction; the comprehensive influence network composed of parents, adolescents, and practitioners expands the scope of addiction; and moderating variables such as peer relationships, gender, and digital literacy adjust the strength and direction of the driving factors. Only by fully understanding these complex driving factors can the society formulate targeted intervention strategies to help adolescents get rid of the trouble of social media addiction and promote their healthy growth, including school-based curriculum, family media plans, and algorithmic behavior nudges.

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