



A Review of The Relationship Between Mobile Phone Addiction And Loneliness In High School Students

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Abstract. As the economy grows, young people are increasingly drawn to mobile phones, leading to a growing concern about their addiction to this technology.(2022) Given the context, there has been a marked rise in the loneliness experienced by the younger generation. Numerous research projects have extensively examined the correlation between mobile phone addiction and feelings of isolation, with a primary emphasis on college students. High school students are in a stage that poses greater risks and vulnerabilities. The research examined the connection between mobile phone addiction and loneliness by reviewing relevant literature, and the findings were in accordance. The domain of the sentence could be scientific research or psychology. The background is about studying the relationship between mobile phone addiction and loneliness, and the findings of a positive correlation between the two. Through a comprehensive analysis of existing research, we observed a strong positive relationship between mobile phone addiction and feelings of loneliness. Additionally, our findings substantiate the notion that the extent of one loneliness can serve as a reliable predictor for the severity of mobile phone dependence. Loneliness and mobile phone addiction may create a harmful cycle due to their mutual influence.(2023) The findings of the study establish a foundation for developing practical measures to address the issues of smartphone dependency and social isolation among secondary school students.

Keywords: high school students, mobile phone addiction, loneliness

1 Introduction

With the continuous advancement of science and technology during the age of mobile Internet, mobile phones have progressively transformed into a vital instrument for the contemporary lifestyle. Mobile phones have evolved from being only a means of communication to incorporating various features like entertainment, socializing, consumption, and more. With the increasing popularity of mobile phones and the accompanying convenience and entertainment they bring, people's reliance on them is growing, presenting potential drawbacks on their daily lives and academic pursuits. Consequently, scholars across the globe are now focusing their attention on the issue of mobile phone addiction. Furthermore, the escalating prevalence of mobile phone dependency among youth is evident as teenagers, who are still undergoing both physical and mental growth, possess a potent inquisitiveness and feeble self-discipline.(2022) These factors collectively contribute to their susceptibility towards becoming reliant on mobile devices. On the other hand, in today's fast-paced world, feelings of isolation have become a prevalent psychological occurrence.(2023)

2 Definition and Measurement of Mobile Phone Addiction and Loneliness

2.1 Definition of mobile phone addiction

At present, there is still no consensus among experts, both domestic and international, regarding the precise definition of mobile phone addiction. Due to distinct research fields, positions, and perspectives of scholars from domestic and international backgrounds, variations exist. Mobile phone dependence has significant implications. Conversely, excessive reliance on mobile devices carries substantial ramifications. The excessive usage of mobile phones is referred to as problematic mobile phone use or mobile phone dependence syndrome, and it is also known as mobile phone addiction, mobile phone anxiety, or mobile phone syndrome, among other names(2023). Most experts agree that it should be categorized as a type of behavioral addiction. Liu Qinxue et al. (2017) defined it as behavioral addiction or non-substance addiction that is overly addicted to various activities mediated by mobile phones and leads to impaired physiological, psychological and social functions. Zou et al. (2017) believed that mobile phone addiction is a kind of

behavioral addiction, which refers to the individual's uncontrolled use of mobile phones to cause a series of physical, psychological and social problems with withdrawal, tolerance and other symptoms. Qing-Qi Liu et al. (2022) believed that mobile phone addiction is an over-indulgence in various activities mediated by mobile phones, which has a strong and continuous sense of desire and dependence on mobile phone use and leads to obvious social and psychological impairment of individuals.

Hence, by taking into account the aforementioned perspective, it is possible to outline the distinguishing features of a dependence on mobile devices:

(1) People tend to excessively utilize cell phones without implementing self-regulation;

(2) It causes significant detrimental effects on the individual's physical, cognitive, and relational capabilities.

2.2 Measurement of mobile phone addiction

Smartphone Addiction Scale for College Students (SAS-C). Kwon and other Korean researchers (2013) took the initiative to develop the Smartphone Addiction Scale (SAS) to assess smartphone usage patterns. However, their definition of a smartphone was not sufficiently precise, and the study's sample size was limited, resulting in only preliminary findings. Therefore, (Su et al., 2014) a group of researchers chose college students who owned smartphones as participants for their study. They created a scale called the SAS-C specifically designed to assess the level of smartphone addiction among college students. The assessment includes a total of 22 elements, such as retreat reaction, conspicuous actions, social ease, adverse effects, APP usage, and APP update, which can be categorized into 6 different factors. The scale's wide usage in research is attributed to its high reliability and validity.

Mobile Phone Problem Usage Scale (MPPUS). Bianchi and Phillips (2005) initially devised the "Mobile Phone Problem Usage Scale" (MPPUS) by considering behavioral addiction. The scale encompasses five factors: tolerance, avoidance of problems, abstaining from addictive substances, intense desire, and negative occurrences caused by societal and familial influences. A sum of 27 inquiries was evaluated with a Likert scale of 10 points. A cumulative of 27 inquiries were assessed utilizing a 10-point Likert scale. The more elevated the score, the greater the level of reliance on mobile phones. There is a measurement system for determining the level

of mobile phone dependence based on scores. The internal consistency coefficient is 0.93, which has high reliability and validity and becomes the cornerstone of the subsequent scale preparation.

Mobile Phone Dependence Index Scale. Leung (2008) developed the “Mobile Phone Dependence Index Scale” by building upon the Mobile Phone Problem Usage Scale (MPPUS). out of order, disorganized, and chaotic. The four dimensions of the situation encompass a lack of control, disorder, disarray, and chaos. This scale utilizes a 5-point Likert scoring system to measure withdrawal and inefficiency. The internal consistency coefficient for this scale is exceptionally high at 0.99. The scale was found to have high levels of reliability and validity by Huang Hai et al. (2014), who made the necessary adaptations for a Chinese version. Post evaluation, it was determined that the scale maintained its robustness and accuracy. The reliability and validity of the Chinese version of the scale are widely acknowledged, making it suitable for extensive use among middle school students in China.

Mobile Phone Addiction Scale. Park et al. (2008) developed a ' mobile phone addiction scale ' based on the TV addiction scale. The survey is comprised of 20 questions and evaluates seven dimensions related to mobile phone usage, including decreasing usage frequency, resisting the urge to touch the phone, being unaware of phone usage, withdrawing from others, diverting attention to different activities, spending excessive time on the phone, and persistent usage. The scale's internal consistency coefficient is 0, determined through the use of the Likert 5-point scoring system. The number 85 has a high level of dependability and accuracy.

Mobile Phone Dependence Scale for Middle School Students. In 2011, Chinese researcher Wang Xiaohui developed the Mobile Phone Dependence Scale specifically designed for assessing middle school students' addiction to mobile phones. This scale comprises 16 questions and is categorized into three dimensions: salience, withdrawal, and compulsiveness. Among them, there are a combined total of 5 topics related to salience and withdrawal, whereas compulsiveness encompasses 6 distinct topics. We utilized a 5-point Likert scale ranging from 1, representing extreme non-compliance, to 5, indicating complete compliance, in order to assess the level of cell phone dependence, which increases as the score increases. The Cronbach's alpha

of the measurement scale was 0.889. The number has a considerable degree of reliability and validity.

Mobile phone addiction tendency scale for college students (MPATS). Xiong Jie et al. (2012) conducted a comprehensive study on measuring a specific construct. In their research, they developed a scale consisting of 16 different items that were categorized into four subscales: social comfort, mood change, withdrawal symptoms, and salience behavior. To assess the reliability of the scale, they calculated a coefficient of internal consistency (α) and found it to be 0.89, indicating a high level of reliability.

2.3 Definition of Loneliness

Different views on the definition of loneliness among domestic and foreign researchers have led to a lack of consensus. Weiss (1973) defined loneliness as the emotional longing for connections and social engagement, an enduring state of anguish that emerges from the sense of isolation or exclusion from one's social network. Russell et al. In 1980, (1980) proposed that loneliness encompasses a multi-faceted emotion resulting from unfulfilled intimate and social needs of an individual. Loneliness is also defined by researchers in the domestic context. Xiong Sicheng et al. (2018) posited that loneliness arises as a detrimental feeling when individuals perceive a disparity between their yearning for social companionship and their current level, leaving them unable to form meaningful connections with significant individuals. Liu Haijuan et al. (2016) believes that feelings of isolation are a prevalent and relatable emotional encounter. In 2016, experts in the field of psychology believe that feelings of isolation are a prevalent and relatable emotional encounter. Experiencing a sense of dissatisfaction and disconnection between one's desired level of communication and the actual interpersonal relationships can be a distressing subjective psychological encounter. It induces a sense of isolation, hollowness, vulnerability, and utter despair among individuals.

Zhang Yong (2016) provided a definition for loneliness, referring to the perceptions individuals hold regarding the extent and caliber of their social engagements. Two categories of emotional isolation and social isolation exist based on their underlying causes. Emotional isolation pertains to an individual's subjective belief in the absence of close connections or unfulfilled attachment requirements.

Social isolation is often experienced when individuals feel disconnected from social networks or do not feel a sense of belonging to any specific group.

Drawing on the aforementioned perspectives, it can be deduced that loneliness exhibits the subsequent attributes:

- (1) The expectations of individuals are often unmet when it comes to the interpersonal relationships they develop during social interactions;
- (2) A distressing emotional response triggered by interpersonal shortcomings;
- (3) Depend on personal needs and subjective feelings.

Consequently, the feeling of isolation arises as an adverse emotional condition resulting from the disparity between desired social connections and actual circumstances.

2.4 Measures of loneliness

Loneliness Scale (UCLA). Russell et al. collaborated to create the scale. The edition underwent revisions in 1978, was further modified for the second edition in 1980, and ultimately underwent additional changes for the third edition in 1988. To quantify the feeling of isolation arising from the disparity between one's desired social connections and their actual experiences, this instrument is employed. The Loneliness Scale (UCLA) third edition comprises of 20 questions, divided into 11 positive-order questions and 9 reverse-order questions. The Likert scale is implemented for a 4-point rating system. The individual's intense loneliness is evident as the score exceeds 44. Scores below 28 suggest a low level of loneliness, while the majority of people tend to score between 33-39 points. The scale's internal consistency coefficient measures an amount of 0.94. The numerical value is high, and the dependability and accuracy are commendable.

Children Loneliness Scale (CLS). Inspired by Russell's well-known loneliness scale (UCLA), Asher et al. designed an assessment tool, known as the Primary School Loneliness Scale, specifically tailored to gauge loneliness in children aged three to six years attending primary school. The scale consists of 24 items that measure the level of loneliness and social dissatisfaction in children. These items assess children's feelings of loneliness, their evaluation of peer relationships, perceptions of unmet needs in important relationships, and their evaluation of social abilities. The category of loneliness includes a comprehensive range of 16 subjects.

The reliability coefficient of the scale is 0.858. This demonstrates a strong reliability and validity.

Zou Hong, a scholar from China, made revisions to the Chinese version of this scale and created the Adolescent Loneliness Scale. This scale consists of a total of 21 topics categorized into four dimensions: loneliness, perceived social competence, peer relationship evaluation, and unfulfilled social needs. The scale is extensively utilized in measuring children's loneliness in the Chinese context.

Emotional Social Loneliness Scale. Vincenzi and Grabosky developed the Emotional Social Loneliness Scale, consisting of 30 items that assess individual emotional and social abilities. The scale comprises 15 objective loneliness items and 15 subjective loneliness items. The Cronbach's alpha is 0.80, and the reliability and validity are good. This technique is extensively employed to assess the impact of social emotions on feelings of isolation.

Loneliness Scale (SELSA). The Social and Emotional Loneliness Scale (SELSA) from Cramer et al was compiled. There is a total of 15 products. The three dimensions pertain to the connection with family, the connection with intimate partners, and the connection with society. The reliability of a test or measure is determined by the internal consistency coefficient, which is calculated to be 0.89. The numerical value indicates high levels of reliability and validity. Li Huanhuan et al., a group of scholars from within the country, after making enhancements to the scale, the Chinese version was improved. The enhancement eliminated one of the questions in the initial data set. After the upgrade, there existed a total of 14 inquiries. As the scores increase, the feeling of loneliness intensifies. The reliability coefficient following enhancements was 0.789. The number indicated a strong level of reliability and validity.

3 Research on the Relationship Between Loneliness and Mobile Phone Addiction

With the rapid advancement of multimedia, people's direct interaction in contemporary society has significantly decreased. The experience of feeling lonely is a widely observed psychological occurrence(2023). The phenomenon of mobile phone addiction and its links to feelings of isolation has captured the interest of

numerous researchers. Through empirical evidence, it is essentially established that a strong association exists between feelings of isolation and reliance on smartphones. As the level of loneliness increases, the dependency on mobile phones becomes more severe(2022). Simultaneously, the degree of mobile phone addiction can be accurately anticipated by the feeling of solitude. Park (2005), a renowned international researcher, posited that there exists a noteworthy association between the reliance on mobile phones and the feeling of isolation. Huang Caiyan and other scholars from within the country. In 2006, researchers discovered a noteworthy link between feelings of loneliness and anxiety, and an individual's dependence on their mobile phone. The more isolated a person felt, the more reliant they were on their phone. Liu Hong et al. (2011) used the loneliness scale (UCLA) and the mobile phone dependence index scale (MPAI) to conduct a sample survey of college students. Based on the survey findings, it was observed that there was a positive correlation between the UCLA score and the MPAL score. The significant positive correlation between mobile phone dependence and loneliness is evident. Loneliness significantly influences why college students become dependent on their mobile phones and can accurately forecast the extent of their mobile phone dependence. A study conducted by Wei Yao yang (2013) examined college students using a self-developed questionnaire on mobile phone dependency and the loneliness scale from UCLA. A strong positive correlation was observed between the UCLA score and the score for mobile phone dependence, suggesting that increased loneliness in college students leads to a higher severity of mobile phone dependence.

With the growing interest in the connection between feelings of isolation and reliance on mobile phones, an increasing number of researchers are now investigating the impact of intricate intermediate impacts and temporal factors. Jiang Yongzhi et al. (2014), for instance, hold a study conducted a regression analysis using the MPATS scale, interpersonal relationship scale, and UCLA scale to examine the correlation between mobile phone dependence, loneliness, and interpersonal trust in cyberspace among college students. The findings revealed that loneliness acts as a mediator between mobile phone dependence and interpersonal trust in cyberspace. Specifically, mobile phone dependence can contribute to increased feelings of loneliness, while higher levels of loneliness can lead to greater interpersonal trust in the online environment (2023). In his study, Huang Mingming (2019) evaluated 500 college students using the UCLA, MPATS, and TAS-20 scales. His findings indicated that both alexithymia and rumination served as complete mediators between loneliness

and the inclination towards mobile phone addiction. Additionally, he observed a sequential mediating effect of alexithymia and rumination. Due to the presence of alexithymia, college students experience a blockage in their emotional cravings and expression, resulting in rumination and ultimately leading to a range of emotional disorders including depression. This obstruction also hinders the development of interpersonal relationships, thereby increasing the likelihood of mobile phone addiction. Through meta-analysis conducted in 2020, it was established by Zhang Yali et al. (2020) that a moderate positive correlation exists between feelings of loneliness and addiction to mobile phones. This study revealed that individuals experiencing greater loneliness tend to rely more on their mobile devices, and conversely, increased mobile phone dependency can contribute to feelings of loneliness. The age group of the subjects regulates the relationship between them, and the correlation coefficient is considerably higher in adults compared to adolescents. Xianli et al. (2022) utilized MPAI and BSSS-C to examine high school students, finding that those who showed signs of mobile phone addiction tended to experience higher levels of sensation seeking and loneliness. In reality, the inclination for seeking new and thrilling experiences can heighten the vulnerability of young people to become addicted to mobile phones due to an increased sense of isolation, where feeling lonely serves as a partially intermediary factor in the association between the desire for sensations and mobile phone addiction in adolescents. However, the sampled individuals in this research lack inclusivity, and additional confirmation of the outcomes is warranted. The study conducted by Wang Yake et al. (2023) employed a longitudinal approach to examine the correlation between feelings of isolation and addiction to mobile phones among college students, while also focusing on the progression and modifications over time. The college student group was followed up every 6 months using the UCLA Loneliness Scale and the Mobile Phone Addiction Tendency Scale for College Students (MPATS) in the study. The study findings demonstrated the connection between two factors, namely the presence of a positive correlation between loneliness levels in college students and their addiction to mobile phones, with loneliness being a reliable predictor for mobile phone addiction. The loneliness among college students is undergoing fluctuations, while mobile phone addiction exhibits some level of consistency. As time progresses, an increasing number of college students are prone to developing mobile phone addiction if they feel lonely.

In summary, despite the differing measurement techniques utilized by earlier researchers, The outcomes display greater uniformity. Loneliness and excessive use of mobile phones are intricately intertwined, The relationship between the two has a strong positive correlation. And the correlation between loneliness and mobile phone dependence, it is possible to accurately forecast the extent of dependency on smartphones (2022). The relationship between loneliness and excessive mobile phone usage can become a harmful cycle(2022). High school students are in the stage of avoiding loneliness and seeking intimacy (Lee, 2001). Excessive use of mobile phones has more depressive symptoms, social isolation and school frustration (Elia Abi-Jaoude et al, 2020). Adolescents in high school who heavily rely on their mobile devices exhibit a greater likelihood of experiencing feelings of isolation and solitude(2021). Further studies should prioritize investigating the prevalence of social problems and personality disorders specifically among high school students. Analyze the present state and consequences of feelings of isolation and excessive mobile phone use among secondary school students. Theoretical basis is necessary to develop practical policies.

4 Outlook and Recommendations

Relevant policies should be established at the national level to effectively regulate the frequency, duration, and content of mobile phone usage among young individuals. Disseminate pertinent programs that concentrate on the mental well-being of teenagers and their usage of cell phones.

We urge anarchist organizations and other social groups to address the issue of mobile phone addiction and adolescent loneliness from a social perspective. In order to ensure the well-being and guidance of young individuals, it is essential that the social environment portrays an encompassing dedication to their safety and oversight.

In the school setting, it is crucial for educators to consistently monitor students' usage of mobile phones, address any issues regarding communication between students, and support individual students' mental well-being by promptly offering guidance and assistance. It is important for educational institutions to provide a wider variety of extracurricular activities to establish genuine emotional bonds among students and enhance their overall extracurricular experiences. Simultaneously, focus on fostering a positive academic environment by nurturing a robust campus culture. To ensure students' psychological well-being, it is highly recommended to employ

qualified consultants with relevant majors to offer their expertise, conducting regular assessments of students' psychological state should be a routine practice, along with hosting informative lectures on psychological counseling. Additionally, immediate counseling and assistance must be readily available to students requiring support. Students have the ability to oversee one another, provide assistance to one another, and promote the creation of collaborative support groups.

Parents should prioritize providing adequate care, maintaining open communication, and frequently accompanying their children to address their emotional needs, as perceived from the standpoint of parents. Simultaneously, appropriate oversight and management of mobile phone usage must be implemented, with intervention measures to be employed when deemed necessary. It is crucial to foster additional interests and hobbies among teenagers in order to enhance their engagement with the physical world and enhance their recreational experiences.

For teenagers, it is essential to develop the skills of self-management and enhance self-control. They must also remain cautious about the responsible use of mobile phones, prioritize self-care, and be mindful of their emotional well-being. By enhancing one's psychological resilience, engaging in hobbies can be an effective means to elevate personal well-being. For adolescents struggling with feelings of extreme isolation or excessive cell phone usage, developing a strong sense of purpose would enable them to effectively engage with their real-life surroundings and individuals, thereby diminishing their feelings of loneliness and dependence on virtual networks.

5 Conclusions

In summary, a significant correlation exists between feelings of social isolation and excessive smartphone usage. It is imperative to promptly address this issue and provide appropriate guidance for adolescents who are still in the midst of psychological development, aiming to steer them away from the detrimental cycle of loneliness and dependence on mobile devices (Mark Bertin, 2020). So that high school students can have a healthier life in this developing era.

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