

Impact of internet addiction on adolescent physical health and improvement strategies

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Abstract: The emergence and development of the internet have exerted an increasingly significant impact on human society. In today's digital era, adolescents are often referred to as the "net generation," and the internet has profoundly influenced them. Given the less-than-optimistic status of adolescents' internet usage, this study adopts methods such as physical health measurements and questionnaire surveys, with Xinjiang adolescents as the research subjects. It aims to identify the causes of adolescent internet addiction and analyze its harmful effects on their physical health. Furthermore, by adapting to the circumstances and providing appropriate guidance, the study proposes establishing a trinity education system involving families, schools, and society to prevent and control adolescent internet addiction.

Keywords: internet addiction, adolescents, adolescent physical health, impact

1. Introduction

The 21st century is the century of the internet. With the development of the internet, humanity has entered the information age. The proliferation of websites, the continuous expansion of the netizen population, and the rapid evolution of network technology have made the internet an indispensable tool in human life. Adolescents, often referred to as the "next generation," have become the main force among internet users. However, the status of internet usage among adolescents in Xinjiang is less than optimistic. Problems arising from improper internet use are becoming increasingly prominent and thought-provoking. Each year, the number of adolescents who cannot extricate themselves from internet addiction is doubling, with the affected age group becoming younger. Incidents such as dropping out of school, sudden death, suicide, and homicide caused by internet addiction are frequently reported in the media. Adolescent internet addiction has become a kind of social disease, and the internet has become an "electronic heroin" for some adolescents. This paper primarily investigates adolescent addiction to online games in the Xinjiang region and analyzes the harmful effects of such addiction on the physical health of Xinjiang adolescents.

2. Investigation and analysis of internet addiction among Xinjiang adolescents

2.1. The concept, connotation, and sequelae of internet addiction

Internet Addiction: The concept of "internet addiction" was initially proposed by American psychologist Goldberg. Goldberg borrowed the diagnostic criteria for substance dependence in the United States and pointed out that internet addiction is a behavioral addiction that functions as a coping mechanism. Its symptoms manifest as the impairment of physical and mental functions in academic, work, social, and family domains due to internet use. Later, Dr. Kimberly Young from the University of Pittsburgh developed and refined this concept, defining it as an impulse-control disorder without involving intoxication. Internet disorder, clinically referred to as problematic internet use or internet dependence (also known as internet addiction), refers to a phenomenon in which excessive internet use leads to impaired social and psychological functioning. In China, internet addiction has become a widely concerned issue, but there is still controversy in academia regarding its definition. The disputes mainly focus on two aspects: first, whether internet addiction constitutes a disease; and second, whether internet addiction represents an

addiction to the internet itself. The core issue of the controversy surrounding the concept of internet addiction lies in its nature—that is, what is the essence of internet addiction?

The sequelae of internet addiction are mainly reflected in its impact on adolescents' intelligence, and it can easily trigger various diseases, even endangering lives. Obsession with the internet also causes adolescents to lose interest in studying, leading to declining academic performance, and even skipping or playing truant from school to go online, with severe cases resulting in dropping out. Adolescents antedated to the internet tend to become apathetic toward people and events in real life, affecting their interpersonal relationships. Most of the online games that adolescents enjoy playing contain bloody violence and illusory content. Long-term engagement with these games can subtly influence their values and moral outlook, leading to decreased self-discipline, increased aggressiveness, and stronger violent tendencies. Moreover, playing these online games requires substantial expenses. For adolescents who have no independent income, once their pocket money runs out, they ask their parents for more, borrow from classmates, and gradually learn to lie, and even resort to stealing, robbing, and extortion. This has caused significant negative impacts on the growth of adolescents.

2.2. Investigation on the current status of internet addiction among adolescents in Xinjiang

This study conducted a random sample survey of 200 adolescents in Xinjiang, aged 12 to 25 years. The results of the survey are as follows: adolescents addicted to the internet were predominantly aged between 12 and 20 years. In terms of gender distribution, 140 male adolescents and 70 female adolescents were identified as addicted to the internet. Regarding age distribution, 150 adolescents were aged 12–20 years, and 50 were aged 20–25 years. Analysis of the survey data indicates that internet addiction among adolescents in Xinjiang is primarily concentrated in the 12–20 age group, with a significantly higher number of male adolescents affected.

Table 1. Survey on the Current Status of Internet Addiction Among Adolescents in Xinjiang

Project	Internet-addicted teenagers	Gender Distribution	Age Distribution
Survey Results	Ages 12–20	Male:140	150 people aged 12 to 20
		Female:70	50 people aged 20 to 25

3. Investigation on physical health status of adolescents in Xinjiang

3.1. Physical morphology development of adolescents in Xinjiang

The survey of 200 adolescents in Xinjiang revealed that long-term internet addiction not only causes severe psychological harm but also significantly affects physical morphology. The investigation found that adolescents who rarely use the internet are considerably taller than their peers of the same age and gender who are internet users. Prolonged internet addiction can have a substantial negative impact on adolescents' physical health.

3.2. Physical function development of adolescents in Xinjiang

Adolescence is a critical period for the comprehensive development of physical functions. During this stage, attention should be paid to the all-round development of the functions of various organ systems and physical fitness. However, the survey found that 140 adolescents were addicted to the internet, indicating that they were unaware of the importance of physical functions. In the early stage of puberty, muscle development is primarily longitudinal; at this time, heavy load strength training should be avoided, and stretching exercises can be used to develop strength. In the later stage of puberty, muscles mainly increase in thickness; this is the opportune time to develop strength by increasing upper and lower body strength, which can yield noticeable results. Activities such as jogging, sprinting, endurance running, and obstacle running are all beneficial training methods. Only a small minority of adolescents in Xinjiang (35% of the total surveyed) were aware of the importance of exercising physical functions. Therefore, internet addiction has a significant impact on adolescents' physical functions.

3.3. Development of motor fitness among adolescents in Xinjiang

Among the 200 adolescents surveyed in Xinjiang, 52.1% believed that physical exercise is very important for health, indicating that a considerable proportion of adolescents in Xinjiang have initially formed a sports consciousness. However, only 34.5% had reasonable exercise habits, and merely 26.5% had a reasonable schedule for exercise. This shows that adolescents in Xinjiang have not yet fully recognized the importance of proper physical activity in promoting their health.

3.4. Status of health indicators among adolescents in Xinjiang

Based on the survey results, the physical indicators of adolescents in Xinjiang are as follows:

Weight: The weight of adolescents aged 12–18 in Xinjiang showed an overall increasing trend with age. The range was 22.5–59.5 kg for males and 20.9–52.1 kg for females. The maximum difference between males and females was observed at age 18, at 7.4 kg. Significant differences were found between males and females at ages 7, 8, 10, 12–14, and 16–18 ($P < 0.01$), and at age 15 ($P < 0.05$). **Chest Circumference:** The chest circumference of adolescents aged 12–18 showed an overall increasing trend with age. The range was 52–84.1 cm for males and 55.0–83.8 cm for females. The maximum difference between males and females was observed at age 18, at 7.3 cm. Significant differences were found between males and females at ages 7–10, 13, and 16–18. **Skinfold Thickness:** The skinfold thickness of adolescents aged 12–18 ranged from 11.9–16.3 cm for males and 14.1–30.5 cm for females. The maximum difference between males and females was observed at age 17, at 17.1 cm. Significant differences were found between males and females at ages 7, 8, and 12–18.

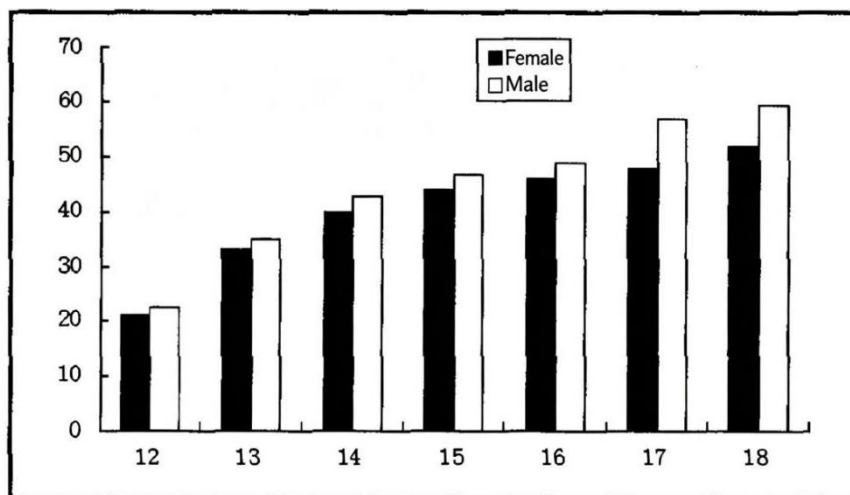


Figure 1. Weight Survey Results of Adolescents (Aged 12–18) in Xinjiang

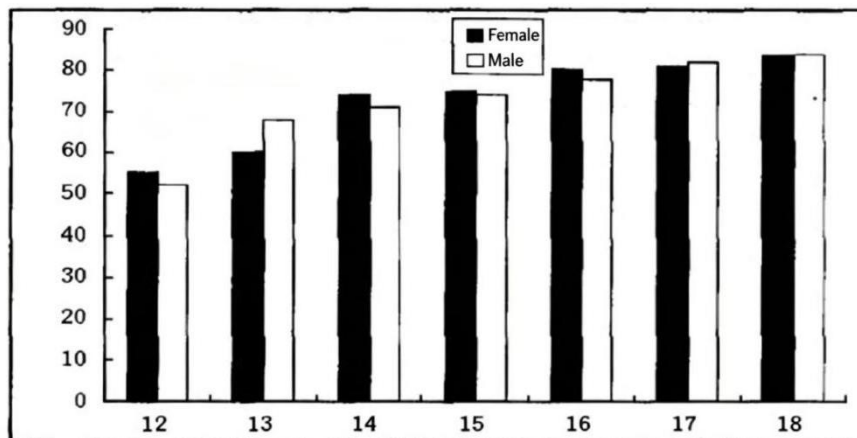


Figure 2. Chest Circumference Survey Results of Adolescents (Aged 12–18) in Xinjiang

4. Internet addiction and physical health disparities in Xinjiang adolescents

4.1. Differences in internet addiction and physical health status by gender

As revealed by the survey analysis, the situation regarding internet addiction and physical development differs between male and female adolescents in Xinjiang. The survey indicates that male adolescents exhibit a higher level of obsession with internet addiction compared to female adolescents, and the impact on their physical health is also more significant. Male adolescents show a notably higher obsession with online games, which seriously affects their healthy development.

4.2. Differences in internet addiction and physical health status by age group

Based on the survey data, the degree of internet addiction varies among adolescents in Xinjiang of different ages. The age group most affected by internet addiction is 12–18 years. During this stage, adolescents are more curious about the internet and lack corresponding self-control, leading to a higher degree of internet addiction and a greater impact on their physical health.

4.3. Differences in internet addiction and physical health status by grade level

The survey of age groups among adolescents in Xinjiang revealed that the deepest infatuation with the internet occurs between the ages of 12 and 15. During this stage, adolescents' psychology begins to mature gradually, but they lack self-control and are most susceptible to negative influences such as violence and games on the internet.

4.4. Correlation analysis between internet addiction and physical health status

The survey analysis demonstrates that internet addiction among adolescents in Xinjiang has a substantial impact on their physical health. Internet addiction not only affects the mental health of adolescents in Xinjiang but also reduces their exercise time, leading to numerous problems in physical development. Therefore, it is necessary to analyze the problems associated with internet addiction among adolescents in Xinjiang, identify corresponding countermeasures, and resolve the issue of adolescent internet addiction.

5. Analysis of factors affecting the physical health of adolescents in Xinjiang

5.1. Policy, legal, and institutional levels

Government policies and regulations regarding network supervision and management directly affect adolescent internet addiction in Xinjiang. As an ethnic minority region in China, Xinjiang still faces numerous problems in its legal framework, particularly in internet law and supervision, where many loopholes exist. Moreover, the internet itself is characterized by concealment and freedom, making it easy for adolescents to be deceived by false information online. Additionally, many illegal websites are easily accessible to adolescents, causing adverse effects on students. Furthermore, many students are addicted to online games, which delay their studies; these issues are largely related to inadequate legal supervision and management of the internet.

5.2. School physical education and infrastructure levels

Schools are the primary venues for adolescents to receive physical education. However, with social development, the content and methods of school physical education have become extremely ill-suited to the pace of society. Although physical education in Xinjiang has achieved positive results, the tasks of physical education have changed under new historical conditions. Due to the backwardness of education and the slow development of economy and culture in Xinjiang, insufficient investment in sports infrastructure has led to a lag in adolescent physical exercise. Moreover, physical education has never been regarded as a key subject in schools, and schools do not attach sufficient importance to it. In this era of rapid development, schools lack understanding, awareness, and respect for the importance of physical education, which seriously affects the healthy growth of adolescents.

5.3. Student individual life patterns, family values, and other levels

The fact that adolescents' physical and mental development is not yet fully mature is the subjective cause of internet addiction. During this period, adolescents lack self-control over novels and stimulating information on the internet and are highly susceptible to temptation. Furthermore, as adolescents enter puberty, their physiology begins to change, and their sexuality starts to develop and mature. However, due to a lack of scientific and correct guidance and being shy to ask others or unable to obtain relevant knowledge through effective channels, they turn to the internet for answers to satisfy their sexual psychological and physiological needs. Some adolescents also lack the courage and methods to cope with setbacks, thus resorting to the internet to escape their troubles. The virtual, anonymous, equal, and free nature of the internet caters exactly to their various needs, causing them to become addicted and unable to extricate themselves.

5.4. Social environment levels such as internet and information media

The speed of dissemination through online media is unmatched by any other medium. Due to certain problems in supervision and management, harmful information on the internet spreads throughout society. When such harmful information spreads among adolescents, it exerts a huge impact on their worldview and outlook on life. Today's campus atmosphere is also affected by harmful online information. Some students engage in online gaming activities, while others search for part-time job opportunities online; all of these can negatively affect students' future development and even lead to academic neglect.

5.5. Religious belief and cultural levels

The life, death, marriage, funeral, diet, and travel of the Uyghur people all reflect a strong Islamic color. Their ethnic language, customs, values, artistic cultivation, and dance scholarship all bear the shadow of Islam. After more than a thousand years of development, Islam has taken deep root in Uyghur society and is closely integrated with ethnic culture. This integration has had a far greater impact on ethnic values than other traditional social concepts. Moreover, the religious language of Islam has permeated the daily lives of the Uyghur people, exerting a profound influence on them. Therefore, religious culture also has a significant impact on the physical health development of adolescents in Xinjiang.

6. Internet addiction intervention and adolescent health development in Xinjiang

6.1. National level: improve health monitoring and management

The Xinjiang government should promulgate relevant laws and regulations, strengthen internet supervision and management, and formulate laws governing online dissemination, such as network operation laws and registration laws. It is necessary to continuously strengthen the management of the internet industry, clarify responsibilities, and improve rules and regulations throughout the information dissemination process. Information on the internet should be screened to actively guide its positive role in dissemination. At the same time, an internet information review system should be established, adopting effective methods and measures to purify the online environment and prevent the intrusion of spam information. This will create a healthy online environment for the growth of adolescents in Xinjiang.

6.2. Social level: government, school, family, and community integrated services

To protect adolescents' physical and mental health from the harm of unhealthy online games and websites, relevant departments should improve administrative regulations on the supervision of internet cafes and online games, and ensure that enforcement measures, monitoring methods, and penalty rules are effectively implemented. The whole society should appeal to the conscience of internet cafe owners, urging them not to seek only private gain but to jointly care about the healthy growth of adolescents.

Parents should communicate more with their children and cultivate their hobbies and interests. Parents should pay attention to their children's feelings and communicate with them as equals. At the same time, they should not focus all their attention on their children's academic performance, but should discover their children's strengths and cultivate their interests, such as in sports, painting, music, etc. They should spend more time taking their children out to broaden their horizons and enhance their relationships. With a richer

life and wider interests, children will not think only about going online, which is beneficial to both their studies and physical and mental health. In short, in today's information age, we should adopt a correct attitude toward adolescents' internet use, establish a trinity of healthy education systems involving families, schools, and society, and provide appropriate guidance so that the internet can better serve them, allowing them to enjoy the rich knowledge and infinite fun brought by the internet and grow up healthily.

6.3. School level: ensure exercise time and enrich curriculum

Publicity and ideological mobilization should be strengthened to encourage adolescents in Xinjiang to participate in physical exercise, raise their awareness of the importance of sports, and help them establish correct physical health concepts. In terms of reasonable diet and nutrition structure, scientific learning and reasonable guidance should be strengthened for adolescents in Xinjiang to help them form good eating habits. Physical education teachers should focus on cultivating students' fitness awareness and physical exercise skills in classroom teaching, helping students in Xinjiang master a variety of simple and effective fitness methods, and cultivating their habits of consciously participating in physical exercise and lifelong physical education skills.

6.4. Individual level: healthy lifestyle and health literacy

Publicity and ideological mobilization should be strengthened to encourage ethnic minority adolescents to participate in physical exercise, raise their awareness of the importance of sports, and help them establish correct physical health concepts. In terms of reasonable diet and nutrition structure, scientific learning and reasonable guidance should be strengthened for ethnic minority adolescents to help them form good eating habits. Adolescents' healthy living habits should be cultivated, and a sound healthy lifestyle should be developed.

7. Conclusion

Internet addiction has a very significant impact on adolescents' health, affecting not only their physical and mental health but also their overall development. This paper takes adolescents in Xinjiang as a case study to analyze the impact of internet addiction on them, pointing out existing problems and proposing solutions, with the hope of positively contributing to the healthy physical and mental development of adolescents in Xinjiang.

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