

Review and Reflection: Researches on Internet Addiction and Exercise Intervention

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Keywords: Review; Internet Addiction; Exercise Intervention

Abstract: With the development of the society, the Internet has become indispensable in people's life. However, excessive use of the Internet has resulted in Internet dependence or Internet addiction. This article reviews the published literature on the definition, diagnosis, types and symptoms, causes and motivations of Internet addiction. The definition and diagnosis of Internet addiction is not unified, but it is generally believed to be the physical and mental damage caused by the excessive use of the Internet. The main types include Internet porn addiction, Internet relationship addiction, Internet compulsion, information overload, computer addiction and so on. The causes and motivations can be explained in terms of Cognitive-behavior Model and the Social-physiological-psychological Model. Exercise intervention can exert positive effects on Internet addiction both physically and psychologically.

Introduction

With the rapid development of information science and technology, the Internet has gradually become indispensable in people's life. On the one hand, the emergence of the Internet has brought many conveniences. On the other hand, the improper and excessive use of the Internet has led to people's excessive dependence on the Internet and even addiction. Many scholars and experts have conducted researches about Internet addiction. This article mainly summarizes and analyzes the definition, diagnosis, types and symptoms, causes and motivations of Internet addiction and its exercise intervention.

Definition of Internet Addiction

The phenomenon that people become addicted to the Internet or over-dependent on it caught the attention of American psychologist Goldberg. Goldberg (1995) first proposed the concept of "Internet Addiction Disorder" (IAD). In terms of the DSM-IV criteria for drug dependence, it was pointed out that Internet addiction is obviously a psychosocial damage caused by excessive use of the Internet. In 1997, Goldberg further defined it as "frustration caused by excessive use of the Internet, or damage to physical, psychological, interpersonal, marital, economic or social functions".

More than two decades of research have explored different aspects of Internet addiction problem, and many scholars at home and abroad have also made great contributions to the study of Internet addiction. However, up to now, the concept of "Internet addiction" has not been uniformly defined, and domestic research on Internet addiction has just begun.

The earliest systematic empirical research on the problem of Internet addiction is by Young, who confirmed the existence of the phenomenon of "Internet addiction" with scientific research methods, and officially named this phenomenon "Internet Addiction". (IA). She believes that Internet addiction is an impulse-control disorder that does not involve poisoning. It belongs to Pathological Internet Use (PIU), and the symptoms of Internet addiction are similar to those of pathological gambling. Excessive use of the Internet will not only damage physical health, but also lead to a decline in academic performance, interpersonal relationships, and affect normal work and life^[5].

Although scholars have defined Internet addiction in different ways, they all agree on the following: 1) Internet addiction is an excessive use of the Internet; 2) Excessive use of the Internet will weaken social functions.

According to domestic and foreign scholars' research on Internet addiction, the concept of Internet addiction can be summarized as follows: Internet addiction, also known as pathological Internet use, is a kind of physical behavior and psychological state which has strong dependence on the Internet and even obsession in it and is very difficult to get rid of as a result of an uncontrolled, abnormal and even pathological use of the Internet for the purpose of entertainment, socialization and so on. Unlike drug addiction, Internet addiction is more like a barrier to the control of physical impulses, which is symptomized by uncontrolled use of the Internet, inability to stop yourself from surfing the Internet and feeling irritable each time you cannot access the Internet, thinking of the Internet as a way to escape problems or release worry and anxiety. Internet addiction may affect our work and life, and lead to our inability to concentrate, interpersonal relationship barriers and emotional irritability. What's worse, it may damage our physical and mental health seriously and lead to unconsciousness.

Diagnosis of Internet Addiction

Similarly, in the academic circles at home and abroad, the diagnostic criteria for Internet addiction have not been unified.

Young believes that the 10 diagnostic criteria for pathological gambling on DSM-IV are closest to the pathological characteristics of Internet addiction, so he revised it and compiled a diagnostic questionnaire for Internet addiction. Subsequently, Young modified it according to the "5 + 3" diagnostic criteria of Beard and named it "Internet Addiction Damage Index" (IAII).

The Chinese Internet Addiction Scale (CIAS) compiled by the Chen contains 26 questions and 4 levels of judgment, including five dimensions of obsessive-compulsive symptoms, withdrawal symptoms, tolerance symptoms, interpersonal health problems, and time management problems. The higher the score, the more indulged in the internet. This scale has good reliability and validity in the preliminary research using college students as samples.

In China's clinical medical community, the first clinical diagnosis standard for Internet addiction developed by Tao's group in China has been proven by relevant American experts for 5 years and eventually became a national standard. In this standard, the standards of "normal use of the network", "excessive use of the network", and "addictive use of the network" are specifically formulated. Surfing the Internet for more than 6 hours a day for non-work or non-learning purpose is a time standard for Internet addiction. Such a state has to last for more than three months in order to constitute the pathological criteria for Internet addiction. Besides, there is the criterion of severity. The international medical community has clarified that there must be impairment of social functions., that is, the inability to learn, to work or to communicate. If you cannot go to school, work or interact with people, you may be addicted. If surfing the Internet does not cause the impairment of social functions, it cannot be regarded as Internet addiction. Although the standard is still controversial, it describes all the symptoms of Internet addiction and is highly operable.

The "Chinese Internet Addiction Scale" compiled by the Chen is widely used in the youth, and is the most widely used scale in the study of Internet addiction among middle school students. Meanwhile, most questionnaires designed for the current situation of Internet addiction in various special studies in

China are also based on CIAS. Therefore, the C IAS and its extended scales are applicable to most situations where a diagnosis of Internet addiction is needed.

Types and Symptoms of Internet Addiction

Internet addiction includes various behavioral and impulsive control problems. Young (1998) divided Internet addiction (IA) into five categories based on his research results:

1) Internet porn addiction: refers to addiction to adult chat rooms and online pornography , such as compulsory use of adult websites to obtain online pornography.

2) Internet relationship addiction: refers to excessive involvement in network relationships. For example, online friends in chat rooms have replaced the family and friends in real life.

3) Internet coercion: refers to compulsory online gambling, online shopping, or online trading activities, such as constant transactions on the Internet, which result in impulsive consumption.

4) Information overload: refers to compulsory web surfing or data search, such as frequent and aimless retrieval of materials that are unimportant for them.

5) Computer addiction: refers to compulsively playing computer games or writing computer programs, such as the compulsive, uncontrolled use of a computer for untimely games or programming.

When people are addicted to the Internet, they externally manifest themselves as involuntarily forcibly using the Internet and gain a strong sense of satisfaction and accomplishment in the network. Once they stop using the Internet, they will have obvious or serious psychological and physical problems, such as irritability and inability to concentrate. The virtual feelings obtained in the network, in turn, will strengthen the desire for unlimited Internet access, resulting in a vicious circle that cannot be extricated.

When people are indulged in the Internet world and cannot extricate themselves, the routine of their life will be broken, and symptoms such as sleep disorders, weight loss, lack of energy, and physical weakness will appear. Serious diseases can lead to neurological disorders and decreased immune function, and more serious ones can lead to sudden death . Turkle's studies have shown that excessive Internet dating will lead to social isolation and social anxiety; Kraut et al. (1998) studied 169 subjects from 73 families for two years and found out that excessive use of the Internet would lead to an increase in loneliness and depression, leading to a decrease in psychological well-being. This shows that Internet addiction can cause social and psychological damage. The basic motivation of individual behavior is dominated by anxiety caused by environmental stress after birth. However, in order to alleviate the pain caused by anxiety, the individual will form adaptive but not necessarily correct and reasonable behavior to paralyze himself or indulge in something to escape the reality. The particular behaviour of Internet addicts is to use the Internet to paralyze themselves and evade the reality so as to create a feeling of happiness and comfort in the brain. In the long run, when Internet addicts face the exciting network, their nerve endings will produce impulses and make them addicted.

Causes and Motivation of Internet Addiction

There are many trends in the research on the causes of Internet dependence so far. After all, juvenile stage is an intricate stage of one's life. Due to the characteristics of their physical and mental development, the juveniles can be easily affected and interfered by external factors. Therefore, the formation mechanism of Internet dependence is complicated and is not caused by a single factor.

From the perspective of psychology and physiology, cognition is the premise of behavior. As for junior high school students, they have not formed a complete judgment yet. In this regard, Davis(2001) proposed a theory of "Cognition-behavior Model " and Young[4] (1998) proposed the ACE Model. Because the Internet is characterized by its anonymity, convenience and escapism, individuals can hide their true identity, say whatever they want to say, do whatever they want to do, enjoy online shopping and online games, indulge themselves in the virtual world and forget the real world. Therefore, it is very difficult to resist the temptations of the Internet. The domestic research on the causes of Internet

dependence is still in its infancy, but since it absorbs and draws on the researches of foreign experts and scholars, many mature research results have been obtained within a short period of time. Among them, Liu et al.(2004) believe that Internet addiction can be explained by a unified "Social-physiological-psychological Model".. From a physiological perspective, the level of dopamine in the brain will rise when individuals surf the Internet for a long time and will bring them great excitement for a short time. From a psychological perspective, the pleasure obtained from the Internet will be turned into great pain once the Internet is disconnected, which will aggravate Internet addiction. From a social perspective, misunderstandings and indifferences in actual life will result in social segregation and individuals will turn to the Internet for more concern, which will result in Internet dependency as well.

Meanwhile, according to Tan et al. Internet addicts tend to have virtual community motivation, anonymous interaction motivation, self-affirmation motivation, and product information motivation. This is consistent with previous research results. Internet users with negative motivations such as virtual community motivations, anonymous interaction motivations, self-affirmation motivations, and product information motivations are more likely to be Internet addicts. Individual neuroticism is an important factor that affects individuals' differences in the motivations of Internet use which cause Internet addiction.

Exercise Intervention of Internet Addiction

In recent years, physical exercise has been an important intervention method for the treatment of Internet addiction because it is healthy and the intervention benefits from physical and psychological aspects have been favored by most experts. The studies of the sports psychologist Professor Zhou (2014) and his team in recent years have shown that appropriate types of exercise interventions have a great effect on drug withdrawal, which not only enhances the physical health, but also brings about helpful changes to psychology, nervous system and brain structure. In physical exercise, individuals can gain a sense of pleasure and get a peak experience, which is conducive to a happy, positive and flowing mental state. When individuals are filled with such mental state in physical exercise, man's instinct of instant gratification to avoid and eradicate anxiety will drive people to replace "Internet addiction" with "sport addiction." From a physiological perspective, physical exercise will lead to increased body temperature and increased brain monoamine secretion. At a certain level of exercise, the amount of brain monoamine secretion will reach a level that is most suitable for generating a happy and positive mood state. In this situation, the ideal effect of exercise intervention will be achieved.

Zhu et al. (2014) also found that exercise has self-control as an intermediary variable and has a significant correlation with college students' smoking dependence. Based on 13 Meta analyses of the effects of sports prescriptions on adolescents' Internet addiction, Wu et al. (2018) found that the effects of sports intervention in adolescents' Internet addiction were significant.

From the perspective of human instinct, Hu et al(2016) believe that physical exercise intervention in Internet addiction is actually to replace one addiction with another, to replace unhealthy addiction with healthy addiction. Exercise has the same instinct activation effect as the Internet, and can reduce or eliminate individuals' obsession in emotional experience generated by Internet behaviors. Therefore, only when exercise becomes an "addiction " can it replace "Internet addiction" .

Appropriate types of exercise can improve adolescents' psychological problems, activate the brain reward system, generate dopamine, and have some endogenous substitution effects on Internet dependence, which can enhance adolescents' inhibition ability, improve their self-control ability and strengthen their resistance to Internet temptation.

Acknowledgement

This article was funded by Zhuhai Federation of Social Science (2019YC081).

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