RELATIONSHIP BETWEEN SMARTPHONE USAGE TIME AND MENTAL HEALTH OF COLLEGE STUDENTS

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Abstract

Smartphone addiction is detrimental to the mental health of college students. This paper attempts to identify the relationship between the smartphone usage time and mental health of college students. For this purpose, the current situation of smartphone usage and mental health college students in China was evaluated through literature review. Next, an online questionnaire survey was conducted to collect the smartphone usage time of college students, and the factors affecting the usage. The survey data were evaluated based on theories of communication, social psychology and media psychology. The results show that most college students in China own a smartphone and are "attached" to smartphone to different degrees; long-term use of smartphone does have a negative effect on the mental health of college students. On this basis, the authors suggested that the government, college and students should work together to mitigate the impact of smartphone usage on mental health.

Key words: Smart Phones, College Students, Mental Health.

INTRODUCTION

With the development of electronic technology, the cost of electronic products has declined, and the price of smartphones has also declined. The high-cost thousand-Yuan smart phones include functions that can meet people's needs, and the coverage of wireless networks has completely occupied the scope of people's activities. Smart phones play an increasingly important role in people's lives. At the beginning of 2019, CNNIC released the 43rd issue of “China Internet Development Statistics Report” (hereinafter referred to as "Report") and said that by December 2018, the number of Internet users in China had reached 829 million, of which the number of mobile Internet users had reached 817 million (Hu, 2016). The proportion of mobile Internet access in all Internet access is 98.6%, nearly all. Therefore, we can know that using mobile phones to access the Internet has been the most commonly used means for people to access the Internet.

How can mobile phones become an indispensable part of people? This is because smart phones have a variety of functions besides basic communication functions. They are becoming more and more like mini-computers. They not only have great advantages in network information transmission cost, transmission speed and information volume, but also have no restrictions on the time and space of other traditional media and online media. There are many specific reasons, such as the convenience of carrying smart phones, because radio, television, computers need a certain space and environment to use, and smart phones make people completely get rid of the space limitations of traditional media. With the innovation and development of modern science and technology, smart phones will become smaller and smaller, and their functions will become more and more. The communication and media functions of smart phones make them potential substitutes for computers (Sok, Seong, & Ryu, 2019). The media function of mobile phone is compatible with the content of traditional media.
and online media, and the means of communication and content of Smartphone Application in information can be diversified to meet the needs of differentiation and individualization. At the same time, smartphone media can further expand the rich content of traditional media to expand online media reading. Smart phones can also promote the dissemination of information, making the content wider, faster, more accurate and more widely distributed. With the continuous development of the network, traditional media are limited by time and space, and can’t be used anytime and anywhere. But anybody can use a smartphone to get and distribute anything in real time at anytime and anywhere. More importantly, there are many ways of communication for Smartphone media. Interaction is real-time, and users’ privacy and personality can be maintained. In everyday life, many people pay more attention to personal privacy (Rusman, 2017), mobile phones will set passwords, very much mind that other people do not have permission to view their mobile phones, so smart phones are absolutely personal goods. In the current market, a variety of mobile phone encryption technology and services to achieve this privatization. In addition, the unique media nature of smart phones makes people not only access information, but also use smart phones to disseminate information. Through the Internet, they can freely share a lot of content on the interactive platform, which is more popular with the masses.

From the “report”, we can see that the proportion of netizens aged 20 to 29 is the highest, which has reached 26.8% (Liao, 2010). From the age point of view, Chinese netizens are mainly young and middle-aged groups; among them, the proportion of netizens who have received university or undergraduate education is 18.6%. These data results limit the largest Internet user group in China to college students from two dimensions.

Because of the relatively free learning environment in Colleges and universities, smart phones are the main means for college students to obtain information, analyze information and communicate without external constraints. College students’ dependence on mobile phones has become a common phenomenon. On the one hand, the use of mobile phones enables college students to update their information at any time, broaden their horizons, and actively participate in social activities. The use of mobile phones makes college students more integrated into society, shortens the distance between the current society and college students themselves, and has a positive impact on the development of College students. On the other hand, improper use of mobile phones will also affect the mental health of College students (House, Neal, & Kolb, 2019). Because mobile phones are easy to carry, and the release of information is concealed, college students can use mobile phones to express their opinions wantonly on the virtual network, without taking effective measures, without any consequences, which makes college students reduce their sense of integrity and responsibility. This will lead to more bad information on the Internet, resulting in a vicious circle.

During the University period, each college student has at least one mobile phone. Because of the restrictions during the school period, there are few traces of traditional media in their daily life. Most college students use computers to access the Internet and mobile Internet to obtain information, social interaction and so on. Therefore, the life and learning of college students are almost related to mobile phones (Xue, Hirche, & Cao, 2019).

Under such circumstances, whether the use of smart phones can affect the mental health of college students has become a common problem in the current development of society (Magallón-Neri, Kirchner-Nebot, Forns-Santacana et al., 2016). The relationship between the use time of smart phones and the mental health of college students has become a hot topic of common concern of the whole society. How to actively affect the mental health of college students through the use of mobile phones is a top priority (Mei, Hu, Zhou et al., 2019).

As for the specific content of mental health, there is no clear conclusion, but the discussion on mental health has not been ended. In terms of College Students’ mental health, the current mainstream view refers to college students’ good psychological quality and sound personality, so it specifically refers to the sense of responsibility, helpfulness, self-control, self-management of time and mood, and strong psychological endurance ability in life and learning.

Can college students use mobile phones to help college students acquire good psychological quality and shape healthy personality? The answer is yes; because after a long period of research, the relationship between mobile phone use and college students’ mental health has been
determined that the use of mobile phones will have an impact on College Students’ mental health. These impacts can be divided into positive and negative impacts because of their specific manifestations.

Most of the college students in the current era are only children, and their parents have cared for them since childhood. It is more difficult for them to adapt to college life after they enter the university. Psychological stress and other emotions can lead to psychological problems of College students. Therefore, college students in this period through smart phones to contact the network culture, especially the need for school and government guidance. During this period, we can properly guide college students to find or set up a good example, help them plan their college life and future employment plan, strengthen their self-control ability, improve their psychological quality of managing mood and facing setbacks, and guide them to establish a positive attitude towards life and perseverance. Belief, students will have a sense of social responsibility and historical mission, learn and enhance their abilities, and prepare for entering society in the future. Because of the psychological specificity of College students, schools and governments should be more careful and patient when conducting mental health education for college students. It is more effective to select social events close to students’ actual life for side guidance. We should not use traditional methods such as direct education crudely. We should learn to influence college students’ mental health in subtle ways, so that college students can reflect on their words and deeds and constantly improve their own quality.

On the basis of questionnaire survey and literature research, this paper studies the relationship between smartphone use and college students’ mental health. From the results of this survey, we can see that college students have smartphones and have a certain degree of dependence on the use of smartphones. Long-term use of mobile phones does affect the mental health of College students. Finally, this paper explores how to control the impact of smartphone use on College Students’ mental health by relying on the cooperation between college students themselves and the school and the government.

**RESEARCH PROCESS**

**Research steps**
Firstly, on the premise that the mental health of college students has attracted much attention, this paper puts forward the relationship between the mental health of college students and the length of use of smartphones by utilizing information resources. Then through the literature research method to understand the status of research at home and abroad, leading to the problem to be solved, that is, through the questionnaire survey to understand the use of smartphones by college students, to understand the status quo of mental health of College students, problems and possible solutions.

**Research subjects**
This survey adopts the method of stratified cluster sampling, choosing college students of multiple universities, majors and grades as the subjects of the survey.

**Research method**
(1) Literature research method: Use the Internet, journals and magazines to find out the current situation of University Students’ mental health and smartphone use under the information environment.

(2) Questionnaire survey: Through questionnaires, we can learn about college students’ mental health and the use of smartphones. Questionnaires are distributed on the Internet. On the premise of informed consent, real or anonymous participation can be chosen. Students’ questionnaires include information about their mobile phone usage time, usage and influencing factors. After inputting the questionnaire data, the correctness of the information was confirmed through three checks. The questionnaire uses multiple-choice questions, multiple choice questions and scales to investigate the time, content and effect of College Students’ use of mobile media. By classifying and measuring the related problems in the recycled samples, we can get the psychological conditions of cognition, emotion, behavior, thinking and value in the process of social interaction of this group. Therefore, this paper studies the influence of mobile media on College Students’ social interaction psychology (Kim, Wang, & Oh, 2016). In addition, I have read a large number of academic papers related to this research by reading related books on communication, social psychology and media psychology. Conduct content analysis and explore rules under the guidance of instructors, objectively, systematively and quantitatively describe the research content.
QUESTIONNAIRE ANALYSIS OF COLLEGE STUDENTS’ MOBILE PHONE USE

College students have a higher mobile phone ownership rate

In the effective examination papers, college students have reached the level of mobile phones, indicating that smart phones have become one of the indispensable items for college students. With the rapid development of China’s electronic products market, smart phones are not only fully functional, but also continue to decline in price. Therefore, compared with computers, smart phones are more popular among college students. From the survey, it can be seen that the current mobile phone ownership rate of college students is 100%, many of them have more than two mobile phones at the same time because of new mobile phones and other reasons.

Diversification of mobile phone uses for college students

If they have a cell phone, what do they do with it? The results of the survey on the use of mobile phones by college students are shown in Figure 1. In the results of the questionnaire, according to the ranking of College Students’ online use, we found that leisure and entertainment accounted for 91.11%, mobile communication accounted for 73.30%, access to information accounted for 58.71%, learning and work accounted for 57.04%, life services accounted for 48.93%, unconscious use accounted for 39.66%, and other accounted for 4.15%.

Figure 1. Mobile phone uses of college students

In the survey, the largest proportion is “leisure and entertainment”, accounting for 91.11%. In the daily life of many college students, they use games to watch games, watch TV, read novels, watch movies, listen to music and so on. Enjoy fun and relaxation. Use mobile phones to kill time and entertain yourself.

Mobile communication is the most basic function of smart phones. With the rapid development of smart phones and networks, mobile communication has been globalized, and instant messaging has occupied the social activities of college students in various forms. The results of the survey on the frequent use of mobile communication by college students are shown in Figure 2. In this survey, the most commonly used college student APP on mobile phone is WeChat, accounting for 76.86%, QQ 11.57%.

In the questionnaire survey, 58.71% of college students choose to "get information", which means that because of the portability and timeliness of mobile phones, college students are more and more accustomed to using mobile phones to get information. “Xiu Cai knows the world without going out.”

Figure 2. The most commonly used social App for college students

In the process of using smartphones, college students are more used in online education. In the survey results, 57.04% of college students choose “study and work”. At the University stage, there is a need for academic pressure, employment pressure or self-realization, and various qualification examinations, language proficiency examinations and completion examinations. More and more college students choose to use mobile phones to access information, practice, training, etc. (Olufadi, 2015). College associations, departments and classes also use mobile phones to issue notifications, communicate, communicate, and so on, in order to maintain the organization and normal operation of student
organizations. In their spare time, college students will also use mobile phones to learn online courses, video learning and e-books.

In this survey, 48.93% of college students chose "life service" in mobile phone use. And from the results, online shopping, takeout and online payment are more widely used.

**College students' mobile phone use time**

The results of the survey on the use of mobile phones by college students are shown in Figure 3. According to the survey, 68.22% of people use mobile phones more than 5 hours in a day, 23.41% in 3-5 hours, 6.52% in 1-3 hours and less than 1.58% in 1 hour. This shows that in 24 hours a day, after eliminating the necessary time for life and study, most of the time of these college students is playing with mobile phones, and even some students have written more than 8 hours in supplementing this content, which shows that college students have a great dependence on the use of mobile phones (Billieux, Van der Linden, D'Acremont et al., 2018).

**Figure 3. College students' mobile phone use time**

![Time of mobile phone use for college students](image)

**Mobile phone places for college students**

The results of the survey on the use of mobile phones by college students are shown in Figure 5. According to the survey, we can see that 75.63% of students choose "dormitory", 10.02% choose "on the road", 7.84% choose "classroom", and 5.28% choose "classroom", so we can draw a conclusion from the two results that "20-24" is usually in dormitory. Mobile phones are the main Internet access tools.

**Figure 5. Mobile phone places for college students**

![Mobile phone places for college students](image)

**Dependence of college students on mobile media**

The results of the survey on whether college students agree to the unconscious use of mobile phones are shown in Figure 6. In this survey, we found that 45.63% of college students agree that
they will unconsciously use mobile phones in their daily life, which indicates that college students can’t do without mobile phones to some extent. Moreover, the student himself is aware of the problem of dependence, but does not exclude the existence of reality, but he does not realize the existence of the situation (Oluwadi, 2015).

Figure 6. Do college students agree with the idea of unconscious use of mobile phones?

The results of the survey on the frequency of college students using mobile phones are shown in Figure 7. In this survey, 43.5% of college students choose to use mobile phones "once a minute", "once an hour" is 26.36%, "once a few hours" is 22.58% and "several times a day" is 7.56%. It can be seen that most college students are dependent on mobile phones. In a day, we can use mobile phones to accomplish many things. But we can’t rule out that many people don’t realize that it’s just a habit for us to look at mobile phones from time to time. It’s not true that mobile phones have information.

Figure 7. Frequency of mobile phone used by college students

The relationship between the length of mobile phone use and mental health of college students

Causes of changing mobile phone use time of college students

First, the growing power of smartphones
The popularity of smart phones has a far-reaching impact on the social interpersonal relationship between college students and their daily life, and has become an indispensable part of college students' learning life. The functions of smart phones cover all aspects of life and provide various services through mobile phones.

Secondly, the learning objectives of college students are not clear.
For the college students who have just entered the University from the tense high school, the degree of freedom of the university is relatively large, and the intensity of management is also small. Therefore, the relaxed university life makes the college students confronted with a large amount of network information, confused situation, unclear learning objectives, wasting time playing on the phone, no plan or action.

Third, college students’ learning attitude is not positive
Due to the dependence of college students on mobile phones, college students' attitudes toward learning have declined, and the diversity of mobile phone functions has made them indulge in virtual networks. They also play mobile phones during the learning period, without curiosity and lack of enthusiasm for learning. College students learn more in order to pass examinations and obtain various certificates.

Fourth, college students can’t manage time scientifically and have poor self-control ability.
In college, students are often required to study independently, so they are required to have a high degree of self-control. Mobile network activities occupy a large number of students’ time, which makes it difficult for college students to manage their time scientifically. The attraction and bewilderment of mobile phone network to students make college students lose control of their Internet time and waste their time playing mobile phone. For college students with poor self-control ability, indulging in mobile browsing will directly affect their normal study and work.

Fifth, the lack of extracurricular cultural activities of College Students
If the extracurricular life of college students is relatively monotonous, they are not interested in participating in community activities, or are not
good at activities, which reduces the motivation of going out activities. College students sleep in the dormitory besides playing with mobile phones, so they spend most of their time playing with mobile phones.

**Positive effects on college students' mental health**

*Increase the usage of "debris time"*

Because of the limitations of class and life, college students are relatively fragmented time periods. Because these times are too fragmented, they are difficult to use. They are not suitable for obtaining information through traditional media with fixed time. Smartphones can access the Internet anytime, anywhere. College students have strong autonomy and can choose to obtain information in various ways at a specific time. Take advantage of these fragmentation times to keep yourself in the information environment, keep up with social dynamics, learn and play, and increase the use of fragmentation time.

**Promoting Self-regulated Learning**

For today's College students, the main means of learning is self-learning. Mobile media not only provides a variety of reading methods, but also provides more resources. It also provides convenient learning methods for college students. College students can use mobile learning time and works (Lee, Kim, Mcdonough et al., 2017). College students can choose to search information by their smartphones, which not only enhances their initiative, but also improves the knowledge and culture related to human quality, and meets their thirst for knowledge (Olufadi, 2015).

**Promoting interpersonal communication**

University campus is the epitome of society. College students should establish a correct outlook on life, values, cultivate a healthy mind and a sound personality, and benefit from friendly interpersonal relationships (Kim, & Koh, 2018). The instantaneity and interaction of mobile media meet the needs of College Students' interpersonal communication, and change the way of College Students' interpersonal communication.

**Satisfying entertainment needs**

Smartphones provide a variety of entertainment services for college students, online games such as online video and other applications affect the lives of College students. Smart phones have become an indispensable tool for college students' entertainment. The portability and diversity of smart phones greatly meet the entertainment needs of College students. However, mobile media not only promotes college students' life and learning, but also has some negative effects. Some college students are excessively addicted to mobile media, which is not conducive to the good development of their study, life and mental health (Kim, & Koh, 2018).

**Negative effects on college students' mental health**

The development of China's current network culture has just started. Because the network culture system and policies and regulations are not yet mature, the supervision and omission of mobile media has made the network environment difficult to manage. The content of mobile media is mixed, and bad information is full of them. In the face of such bad information, college students with less social experience and weak discrimination will feel blank and unconsciously imitate, changing his views on life and morality. The main reasons include the following:

*Reducing the interpersonal skills of college students*

College students can use mobile phones to connect to the Internet anytime and anywhere, or chat online, but for the real people sitting opposite, there is nothing to say. This kind of "man-machine" communication mode damages college students' bad interpersonal communication in the real world. Because college students depend on smartphones, they no longer actively maintain interpersonal communication in the real world, reducing the interpersonal communication ability of college students.

Mobile media makes it easy for college students to get all the information and services they need. Therefore, college students are more inclined to indulge in the mobile phone world and not take the initiative to maintain contact with others in real life. In class, I don't want to talk with my classmates. Some college students are optimistic and cheerful in the mobile world.

*Reduce the sense of responsibility of college students in interpersonal communication*

Because the release of mobile phone information is concealed, college students can use mobile phones to express their opinions wantonly on the virtual network. Without taking effective measures, without consequences, college students...
will blindly follow the trend, constantly relax their standards, ignore the etiquette of life, and break the bondage of moral and legal norms. I believe that even if there are violations of ethics and legal norms in the network, they will not be punished. This will lead to more bad information on the Internet, resulting in a vicious circle.

**Adverse effects on college students’ learning**

The proportion of college students who play mobile phones in class time is also relatively large. In class, students play mobile phones, which will lead to distraction of attention and decrease of learning efficiency. On the other hand, the prompt sound of mobile phone information will interfere with classroom order and teachers’ teaching concepts, and also interfere with the attention of other students. College students are accustomed to short and interesting information on mobile media, which is harmful to learning large texts in books.

**Leading to the planarization of college students’ thinking**

Through the network search, college students have insufficient experience and can’t screen and identify the network information. They believe it blindly without judgment and thinking. In the long run, their thinking is easy to be confined and restricted, becoming superficial and simple, resulting in the flat thinking of college students towards things and letting them shape themselves. To be a fragmented mentality and a moderate way of thinking, affect their rational understanding and judgment of things.

**Disturbing the value orientation of college students**

The particularity of mobile media leads to uneven content. College students have no social experience, no sense of self-protection, no mature moral outlook and values, and no ability to criticize and resist bad information. Excessive exposure to bad information can have subtle effects on College students, changing the mindset of college students and the three perspectives they have not yet formed.

**Suggestions on strengthening psychological health education of college students**

To strengthen the mental health education of College students, we need to start from three aspects:

Firstly, students need to have several abilities. Firstly, they should correctly understand and utilize the ability of media, reduce the time of entertainment and leisure, and actively learn knowledge from the network; secondly, the ability to identify false information. The particularity of mobile media leads to uneven content, college students identify and judge the authenticity of information content, regularity of information dissemination channels and information value. Find the right direction in the network world, not confused by bad information; thirdly, the ability of information screening and filtering. Faced with the constantly updated information, college students need to make proper use of mobile media to find really valuable information and keep themselves in the information sea. Finally, the ability to coordinate the relationship between the real world and the virtual world, i.e. the ability of self-control, is to treat the mobile phone network rationally. Through clear self-awareness, restraint of irrational impulse to make a study plan during the University period, determine feasible short-term goals, prepare for future career.

Second, the government constantly strengthens the construction of network culture, promotes the main theme of culture, broadens the horizons of College students, and strengthens their sense of identity and national pride towards the motherland.

Third, schools continue to strengthen the construction of campus culture, organize meaningful activities on the Internet, enrich the extracurricular life of College students, and organize meaningful activities of student associations. Encourage students to participate in community activities, increase initiative, maintain realistic interpersonal relationships and eliminate negative effects. Schools should properly carry out some courses to improve college students' self-control, to arrange time reasonably, and to improve college students' rational understanding of mobile phones.

**CONCLUSION**

Based on questionnaires and literature research, this paper explores the length of College Students’ use time, combining with the characteristics of College Students’ mental health. The relationship between mental health and mental health of college students was studied. The influence of mobile phone use on College Students’ mental health includes positive and negative effects. How to control the impact of smartphone use on College Students’ mental health...
health by relying on the cooperation between college students themselves and the school and the government? Let the positive impact be more, the negative impact less.

From the results of this survey, we can see that college students have smart phones, and there is a certain degree of dependence on the use of smart phones. The proportion of leisure and entertainment is greater than that of study and work in the use of mobile phones. There is a clear understanding of the use of smart phones, but there are also irrational situations. For example, many people think that mobile phones are very important in interpersonal communication. They often use mobile phones in their daily life, and occasionally worry about the health effects of long-term use of mobile phones. For example, college students play mobile phones in class, feel bored in class, and begin to play mobile phones, which will affect their studies.

According to the survey results, this paper makes a thorough analysis of College Students’ interpersonal communication, value orientation, learning thinking and psychological state from the use of mobile phones. On the one hand, the use of smart phones meets the social needs of College students, improves their moral awareness, broadens their access to learning resources, and helps college students to carry out mental health care. On the other hand, there are also some negative effects, such as weakening the real communication, disturbing the value orientation of College students, leading to the flat thinking of college students and forming psychological dependence.

There are still some shortcomings in this survey:

In terms of the content of the questionnaire, there may be some deficiencies in the depth of the content and the evaluation criteria. In this paper, the main problem of College Students’ mobile phone use is qualitative test, which lacks the analysis of the validity and reliability of the questions in the questionnaire.

This paper initially planned to describe the impact of mobile phone use time, time, frequency and use on College students, but in the later research process, due to the limitation of personal energy and ability, there was no very clear distinction, only a separate description at individual level.

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