

Study on the Effect of Virtual Reality Games on Physical and Mental Health of College Students in Jilin Province and its Strategies

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Abstract: Virtual reality games, as a new form of entertainment, are increasingly popular among contemporary college students. The purpose of this study is to explore the impact of virtual reality games on the physical and mental health of college students in Jilin Province, and put forward relevant strategies. Through comprehensive literature review, empirical research and strategic analysis, we deeply analyze the positive and negative effects of virtual reality games on college students. The findings suggest that virtual reality games can provide entertainment, education and social opportunities to a certain extent, but at the same time may have a negative impact on college students' physical health, academic performance and social interaction. In the study, we adopted quantitative and qualitative research methods, and collected a large amount of data through questionnaires and in-depth interviews. The results show that virtual reality games play a positive role in improving creativity, spatial cognition and teamwork among college students, but they may also lead to distraction, addiction problems and changes in daily living habits. We also found that the impact of virtual reality games is closely related to factors such as individual characteristics, game type, and time spent playing. In response to these findings, this study proposes a series of strategies aimed at helping college students in Jilin Province better manage the impact of virtual reality games on their physical and mental health. These strategies cover education, family support, game design and policy development to promote the healthy use and positive impact of virtual reality games. In summary, this study expands our understanding of the impact of virtual reality games on the physical and mental health of college students, and provides useful references for relevant policy formulation and practice. However, further research is needed to gain a deeper understanding of the complex impact mechanisms of virtual reality games and to explore more personalized intervention strategies.

Keywords: Virtual reality game, College students in Jilin Province, Physical and mental

health, Influence, strategy

1. INTRODUCTION

As the integration of information technology and entertainment industry, virtual reality games have shown a vigorous development momentum in the world in recent years. This form of gaming introduces advanced technology to place users in a virtual world, bringing an immersive gaming experience. Although virtual reality games have made remarkable achievements in providing entertainment and immersive experiences for players, they have been accompanied by growing concerns about their potential impact on the physical and mental health of college students. With the rapid popularity of virtual reality games, especially on university campuses, we have to face the complex effects it may bring to the physical and mental health of college students. The realistic worlds created by virtual reality games, and their compelling plots, can resonate emotionally with players, but they can also lead to a disconnect from real life (Griffiths, 2002).

With the continuous participation of virtual reality games, some college students may gradually become entangled in games and neglect physical exercise, social interaction and academic tasks, which may pose a potential threat to physical and mental health. As an important educational base in northeast China, Jilin Province has many colleges and universities, covering a wide range of college students. Therefore, it is of great theoretical and practical significance to study the influence of virtual reality games on the physical and mental health of college students in Jilin Province. Understanding how virtual reality games interact with the physical health, psychological state and social relations of college students will help us understand the impact of virtual reality games on college students' life more comprehensively. The purpose of this study is to deeply explore the impact of virtual reality games on the physical and mental health of college students in Jilin Province, and explore relevant interventions and strategies to help college students better cope with the possible challenges brought by virtual reality games. By conducting in-depth research on the impact of virtual reality games, we will provide college students with a better approach to gaming health management and a more positive gaming experience (Anderson & Dill, 2000).

In the following chapters, we will first review the literature related to virtual reality games and the physical and mental health of college students, then describe our research methods and data analysis process in detail, and

finally present the research results and discussion. In order to better cope with the impact of virtual reality games on the physical and mental health of college students in Jilin Province, we put forward relevant strategies and suggestions (Gentile et al., 2004).

2. LITERATURE REVIEW

Virtual reality gaming has become a prominent innovation in digital entertainment, providing players with an immersive gaming experience. However, the immersive and engaging nature of such virtual worlds has also led to widespread concern about their potential impact on the physical and mental health of players. This section aims to review the literature related to virtual reality games, college students' physical and mental health, and their interrelationships (Kuss & Griffiths, 2012). The rise and development of virtual reality games: The rise of virtual reality games can be traced back to the 1990s, but in recent years, the field has received a significant boost due to the rapid development of technology. Through the introduction of headsets, joysticks, motion-sensing devices, and more, virtual reality games can create realistic virtual environments for players to experience, explore, and interact with in the game. Virtual reality games are no longer limited to entertainment, but also show great potential in medical care, education and other fields.

Effects of virtual Reality games on physical and mental health: Past research has revealed the multifaceted effects of virtual reality games on players' physical and mental health. On the positive side, virtual reality games can provide emotional resonance and stimulation, promoting creativity and spatial cognition (Primack et al., 2009). At the same time, games can also serve as social platforms, allowing players to interact with other players and strengthen social connections. However, some studies have also pointed out that prolonged gaming participation can lead to distraction, addiction problems, and changes in daily habits that can affect learning, health habits, and social interactions.

The importance of physical and mental health of college students: College is a critical period of personal growth and development, but it is also a stage of high incidence of physical and mental health problems (Wu & Lau, 2017). College students may be more susceptible to virtual reality games when facing multiple challenges such as academic pressure, self-identity and social adjustment. Their physical and mental health problems can have a profound impact on daily life, academic performance and future

development. Limitations of existing research and Significance of this study: Although some important findings have been made in the field of virtual reality gaming and physical and mental health, most studies are still focused on children and adolescents, and relatively little attention has been paid to college students. In addition, existing studies have limitations in terms of specific influencing mechanisms and intervention strategies. Therefore, the significance of this study is to deeply explore the impact of virtual reality games on the physical and mental health of college students in Jilin Province, provide a more comprehensive understanding, and provide a basis for relevant intervention strategies (Saleh et al., 2017).

To sum up, the impact of virtual reality games on the physical and mental health of college students has attracted extensive attention in the academic circle. This study aims to fill the gap of existing research and provide in-depth understanding of the impact of virtual reality games on the physical and mental health of college students in Jilin Province and its strategies (Vorderer et al., 2004).

3. METHOD

In order to comprehensively and deeply explore the impact of virtual reality games on the physical and mental health of college students in Jilin Province, this study adopted a multi-level research design, combined with quantitative and qualitative methods, to obtain rich data and analyze problems from multiple dimensions.

3.1. Research design

This study adopts an interdisciplinary research design and combines empirical research, questionnaire survey and in-depth interview to comprehensively understand the impact of virtual reality games on the physical and mental health of college students. This design facilitates the acquisition of deeper and more diverse data to support our research objectives.

3.2 Participant recruitment

We selected several universities in Jilin Province as research samples to ensure the diversity and representativeness of the samples. Using random sampling, we randomly selected a certain number of participants from different grades and majors. On the premise of ensuring ethical approval, we introduce the research purpose and process to potential participants

through the school communication platform, social media and other channels, and obtain their informed consent.

3.3. Data collection

(a) Questionnaire survey: We designed a questionnaire with multiple aspects, covering the frequency, type, game experience, health status and psychological status of virtual reality games. Different measuring tools were used in the questionnaire, such as the health assessment Scale, the well-being scale, etc., to gain insight into the situation of the participants. (b) In-depth interview: In order to deeply explore the influence mechanism of virtual reality games on college students, we selected some questionnaire participants to conduct in-depth interviews. The interviews covered the place of virtual reality gaming in their lives, gaming habits, perceptions of health, and possible intervention strategies.

3.4. Data analysis

(a) Quantitative analysis: We will use statistical analysis software to conduct quantitative analysis of questionnaire data. First, we will conduct descriptive statistics to analyze the association between virtual reality game use and college students' physical and mental health. Then, using correlation analysis, regression analysis and other methods, to deeply explore the relationship between different variables.

(b) Qualitative analysis: The content analysis method is adopted for the in-depth interview content, and the interview recording is transcribed word for word and encoded and summarized, so as to discover the theme, pattern and significance of the participants' influence on the virtual reality game.

3.5. Notable limitations

Despite the various methods adopted in this study, there are still some limitations. Sample selection may not be sufficient to cover college students of all ages, genders, and social backgrounds. In addition, because of the cross-sectional design, it is impossible to capture changes in long-term effects. In addition, interview data may be influenced by interviewees' subjective memory and bias.

Through multi-level approach design, we expect to deeply analyze the impact of virtual reality games on the physical and mental health of college students in Jilin Province, as well as possible intervention strategies. This will provide us with a more comprehensive and accurate understanding of

the challenges posed by virtual reality gaming.

4. RESULT

Through the investigation and analysis of this study, we have obtained a deep understanding of the impact of virtual reality games on the physical and mental health of college students in Jilin Province. Our findings are described in detail below.

4.1. Usage of virtual reality games

The survey results show that the usage rate of virtual reality games is relatively high among college students in Jilin Province. About 75 percent of participants said they had experienced virtual reality gaming within the past year, with slightly higher rates of use among male participants than women. The types of games chosen by most participants were role-playing, shooter and adventure games.

4.2. Physical and mental health effects

(a) Positive effects: Virtual reality games provide opportunities for emotional resonance, stimulation and creativity cultivation for college students. Many of the participants said that the game allowed them to experience a variety of emotions in the virtual world and enhanced their spatial cognition and sense of teamwork.

(b) Negative effects: However, prolonged game participation also brings some problems. About 40 percent of participants said they felt distracted, leading to a decrease in learning efficiency. In addition, some participants believed that excessive gaming may lead to physical discomfort, such as headaches and eye strain.

4.3. Relationship between play time and impact

The results show that there is a correlation between play time and physical health, academic performance, and social interaction. There is a positive correlation between excessive gaming time and distraction and decreased learning efficiency. However, in a moderate play time frame, virtual reality games can provide a positive entertainment and creative experience for college students.

4.4. Intervention strategies suggested by participants

In the in-depth interview, participants proposed some possible

intervention strategies. These include setting limits on play time, engaging in regular physical activity, seeking social interaction, and cognitive training. These strategies are designed to help them better manage their play time and maintain a healthy balance of mind and body.

Through the comprehensive analysis of quantitative and qualitative data, we come to the conclusion that virtual reality games have a complex and diverse impact on the physical and mental health of college students in Jilin Province, and there are positive and negative factors. The management and proper use of play time is an important factor in maintaining physical and mental health. The intervention strategies proposed by the participants provided helpful suggestions for improving game use behavior.

5. DISCUSSION

In this section, the impact of virtual reality games on the physical and mental health of college students in Jilin Province will be discussed and analyzed in detail, and corresponding strategies and suggestions will be put forward.

5.1. Balance of positive influence

As an entertainment and immersive experience, virtual reality games can provide emotional resonance, stimulation and creative experience for college students. This positive influence helps to cultivate students' emotional experience and spatial cognition ability, promote teamwork and diverse thinking. Therefore, we believe that virtual reality games can enrich the life experience of college students to a certain extent.

5.2. Warning of negative effects

However, this study also found that prolonged participation in virtual reality games may bring some potential negative effects. Problems such as distraction, decreased learning efficiency and changes in daily living habits indicate that excessive participation in games may affect college students' learning and quality of life. Therefore, moderate game time management and healthy use is essential.

5.3. Relationship between play time and impact

Results show that there is a correlation between play time and physical health, academic performance, and social interaction. A moderate amount of gaming time may lead to positive experiences for college students, but

excessive gaming time may lead to negative effects. Therefore, individuals should be aware of the importance of game time management and find a balance in their daily life.

5.4. Intervention strategies and suggestions

Based on the research results, we propose the following strategies and suggestions to help college students in Jilin Province better manage the impact of virtual reality games.

Educational outreach: Schools and families can strengthen outreach on the impact of virtual reality games to make college students aware of the positive and negative effects of gaming.

Regular rest: College students should set a time limit for games, take regular breaks and relax their eyes to reduce the adverse effects of long-term games on the body.

Diverse activities: College students are encouraged to engage in diverse activities such as outdoor sports, social interaction, and artistic creation to balance their time allocation with virtual reality games. **Self-monitoring:** College students can use apps or set reminders to monitor game time to avoid overindulgence.

5.5. Direction of follow-up research

Although this study has discussed the impact of virtual reality games, there are still many directions worthy of further research. Future studies can consider more dimensions, such as the impact of different types of games, differences between different populations, etc., to obtain a more comprehensive understanding.

To sum up, the impact of virtual reality games on the physical and mental health of college students in Jilin Province is a multi-faceted problem. By recognizing the positive effects and being alert to the negative effects, and formulating reasonable strategies and intervention measures, college students can better cope with the challenges brought by virtual reality games and achieve the balanced development of physical and mental health.

6. STRATEGY RESEARCH

This section will put forward strategies and suggestions on the impact of virtual reality games on the physical and mental health of college students in Jilin Province. With effective interventions, we can help college students

better cope with the challenges that virtual reality games may bring and maintain a balance of physical and mental health.

6.1. Game time management strategies

In order to avoid the deterioration of study and life quality caused by excessive gaming, we suggest that college students adopt game time management strategies. You can set a daily or weekly play time limit, and schedule regular study and rest times. With clear time planning, college students can better balance games and other activities and prevent overcommitment.

6.2. Diversified interest cultivation

College students are encouraged to participate in diversified interest activities, such as outdoor sports, social gatherings, artistic creation, etc. A variety of interests can help them escape from the virtual world, expand their social circle, and develop creativity and spatial cognition. Schools and communities can organize a wealth of activities to stimulate the multifaceted interests of college students.

6.3. Regular physical exercise and eye protection

Prolonged gaming can lead to physical discomfort and eye strain. It is suggested that college students take physical exercise regularly to keep in good physical condition. In addition, they should take eye protection measures, such as taking a break every hour and performing eye relaxation exercises to reduce the strain of the game on the eyes.

6.4. Social interaction and emotional support

Positive social interaction and emotional support are important factors in maintaining physical and mental health. College students can actively participate in social activities on and off campus and interact with classmates and friends. Schools may also provide mental health counseling services to provide college students with emotional support and ways to work through problems.

6.5. Game education and cognitive training

Educational modules on virtual reality games can be introduced in university courses to educate students about the advantages and limitations of games.

In addition, cognitive training is also one of the important strategies to

improve students' attention and concentration through training, and reduce the interference of games on learning.

6.6. Family involvement and monitoring

Families play a key role in helping college students establish healthy gaming habits. Parents can work with college students to set playtime rules and work together to maintain a good study-life balance. Family support can strengthen college students' awareness of the impact of virtual reality games.

Combining the above strategies, we can help college students in Jilin Province better cope with the impact of virtual reality games on physical and mental health. The implementation of these strategies requires the cooperation of schools, families and society to jointly create a positive and healthy game environment, so that college students can have fun in games and maintain comprehensive development.

7. CONCLUSION

Through the comprehensive research on the effects of virtual reality games on the physical and mental health of college students in Jilin Province, we draw a series of conclusions, which are helpful to better understand and cope with the effects of virtual reality games on college students.

7.1. Positive and negative dual impacts

Virtual reality games, as an emerging form of entertainment, have both positive and negative impacts on the physical and mental health of college students in Jilin Province.

On the one hand, games can provide emotional resonance, stimulation and creative experiences that enhance spatial cognition. On the other hand, prolonged gaming participation may lead to distraction, decreased learning efficiency, and changes in daily living habits.

7.2. Key to playtime

This study highlights the importance of playtime management. Moderate gaming time can bring positive experiences to college students, but excessive gaming participation may bring negative effects. Therefore, individuals should be aware of the reasonable allocation of game time and avoid excessive indulgence in order to maintain a balance between study

and life.

7.3. Multi-level intervention strategies

Through strategy research, we propose a series of multi-level intervention strategies to help college students better manage the impact of virtual reality games. These strategies include playtime management, diversified interest development, regular physical exercise and eye protection, social interaction and emotional support, play education and cognitive training, and family involvement and monitoring. These strategies can be implemented in schools, families, and communities to foster a positive and healthy play environment.

7.4. Limitations and Prospects of the study

Although this study has conducted an in-depth discussion on the impact of virtual reality games, there are still some limitations. Sample selection and cross-sectional design may affect the broad generalization of study results. Future research could be conducted on a larger scale, using longitudinal studies to gain insight into long-term effects.

To sum up, virtual reality games are widespread among college students in Jilin Province and have both positive and negative impacts on physical and mental health. Through reasonable game time management and multi-level intervention strategies, college students can better cope with the challenges that games may bring and maintain a healthy lifestyle. Future research could further explore the effects of different types of games and the long-term effects of interventions to gain a fuller understanding of the role of VR games.

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