AN EMPIRICAL STUDY ON CYBERBULLYING AND MENTAL HEALTH AMONG ADOLESCENTS IN LUZHOU: FROM THE PERSPECTIVE OF ATTACHMENT THEORY

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Abstract: Based on the attachment theory framework, this study empirically investigates the relationship between cyberbullying and mental health, as well as its underlying mechanism, among adolescents in Luzhou City through questionnaire surveys and statistical analyses. Results reveal a significant positive association between the frequency of cyberbullying victimization and levels of loneliness and depression, indicating that cyberbullying exerts a notable negative predictive effect on adolescent mental health. Parental attachment and peer attachment both demonstrate significant negative correlations with loneliness and depression, suggesting that secure attachment relationships serve as protective factors against psychological risks. Hierarchical regression analyses further show that parental attachment significantly moderates the impact of cyberbullying on mental health, whereas the moderating effect of peer attachment remains non-significant. This research extends the application of attachment theory to the context of adolescent cyberbullying, offering dual theoretical contributions: it explicates the buffering role of family attachment in mitigating cyberbullying effects and empirically validates the protective function of attachment relationships in mental health. The findings provide a scientific foundation for educational authorities to design attachment-oriented interventions while offering actionable strategies for strengthening parent-child relationships at home and optimizing school-based mental health programs. This study thus holds critical theoretical and practical significance for enhancing regional adolescent mental health through evidence-based policy and intervention development.
Keywords: Adolescent cyberbullying; Mental health; Attachment theory; Parental attachment; Peer attachment; Moderating effects

1 INTRODUCTION

1.1 Background of the Study

With the rapid development of mobile communication technology, smartphones have become an important part of teenagers' lives. As of June 2023, the size of China's Internet users reached 1.079 billion people, and the Internet penetration rate reached 76.4%, of which the proportion of Internet users under the age of 10 and 10-19 years old was 3.8% and 13.9% respectively[1]. There is a clear trend of youth mobile phone use at a younger age, but their physiology and psychology are not yet mature and they are easily influenced by the online environment. Cyberbullying, as an emerging online harmful behavior, has become an important factor threatening the mental health of teenagers. Cyberbullying is characterized by strong concealment, rapid dissemination and wide influence, which has serious negative impacts on adolescents' mental health, such as increasing loneliness and depression. However, there is a relative lack of research on the relationship between cyberbullying and mental health among adolescents, especially in terms of empirical studies in Western China[2]. Taking adolescents in Luzhou City as the research object, this study explores the relationship between cyberbullying and mental health and its influence mechanism based on the attachment theory perspective, to provide a scientific basis for the regional education department to formulate adolescent cyberhealth policies and mental health interventions[3].

1.2 Significance of the Study

This study has important theoretical and practical value. At the theoretical level, this study introduces attachment theory into the field of adolescent cyberbullying, explores the moderating effects of parental attachment and peer attachment on adolescent mental health, expands the scope of application of attachment theory, and provides a new perspective for understanding the psychological mechanisms of adolescent cyberbullying[4]. At the practical level, this study reveals the negative impact of cyberbullying on adolescents' mental health through empirical analyses, providing a scientific basis for education departments to develop targeted mental health interventions. Meanwhile, the results of the study also provide useful guiding suggestions for families and schools, which help to enhance the mental health of adolescents and promote their healthy growth.

2 LITERATURE REVIEW

2.1 Cyberbullying and Adolescent Mental Health

Cyberbullying refers to malicious attacks, insults, threats, or the dissemination of false information through the internet, which significantly negatively impacts adolescents' mental health. Research indicates that cyberbullying is significantly associated with non-suicidal self-injury among adolescents, with depression and parent-child communication acting as mediators and moderators [5]. Victims of cyber bullying often exhibit higher levels of loneliness, depression, and anxiety [6]. The hidden and anonymous nature of cyberbullying makes it difficult for victims to obtain timely social support, further exacerbating psychological trauma [5]. Studies have shown that cyberbullying not only affects adolescents' mental health but can also lead to long-term psychological trauma, such as decreased self-esteem, loss of confidence in life, and even suicidal behavior [7]. Therefore, in-depth research on the relationship between cyberbullying and mental health is crucial for preventing and intervening in cyberbullying among adolescents.

2.2 Attachment Theory and Its Application to Adolescent Psychological Development

Attachment theory, initially proposed by British psychologist John Bowlby in the early 1950s, emphasizes the importance of early attachment relationships for individual development. Attachment relationships are psychological representations formed through interactions with others, influencing adolescents' thoughts, emotions, and behaviors [8]. Research shows that secure attachment relationships help adolescents establish positive attachment patterns and maintain good mental health[9]. Insecure attachment relationships can lead to anxiety and helplessness in intimate relationships and may even cause depressive symptoms [10]. The application of attachment theory in adolescent psychological development provides a new perspective for understanding adolescents' mental health issues and helps reveal the mechanisms between cyberbullying victimization and mental health among adolescents [11].

2.3 The moderating Role of Attachment in Cyberbullying and Mental Health

The moderating role of attachment relationships in the relationship between cyberbullying and mental health has attracted attention. Research shows that parental and peer attachment have protective effects on adolescents' mental health. Parental attachment provides emotional support and a sense of security, helping to alleviate the psychological stress caused by cyberbullying [12]. Peer attachment, through social support and emotional comfort, reduces adolescents' loneliness and depression [13]. However, existing research has explored the moderating role of peer attachment. This study will delve into the moderating effects of parental and peer attachment in the relationship between cyberbullying and mental health, providing theoretical support and practical guidance for preventing and intervening in cyberbullying among adolescents[14]. By revealing the protective mechanisms of attachment relationships, this study will offer valuable guidance for families and schools, contributing to enhancing adolescents' mental health levels[15].

3 RESEARCH METHODOLOGY

3.1 Subjects of the Study

Junior high school and high school students in Luzhou City, Sichuan Province were selected as the subjects of this study[16]. The specific sampling process was as follows: first, one municipal district and one county were selected by simple random sampling from the three municipal districts and four counties in Luzhou City; subsequently, one junior high school and one senior high school were randomly selected from these two districts. Stratified sampling was conducted within the sampled schools, with two to three classes being selected in the first, second, and third years of junior high school, and in the first, second, and third years of senior high school[17]. The estimated sample size was 1,000, and about 400 valid questionnaires were collected. The sample covered students of different grades in junior high school and senior high school, and the ratio of male to female was balanced[18]. The study was conducted in strict compliance with ethical principles, and the purpose of the study and confidentiality measures were explained to the participants and their guardians, and their informed consent was obtained.

3.2 Research Tools

The questionnaire used in this study was designed concerning mature scales at home and abroad and combined with the actual situation of adolescents in Luzhou City. The questionnaire mainly includes the following parts:
1. Demographic variables: including basic information such as gender, age, and family structure.
2. Cyberbullying scale: The Olweus Cyberbullying Questionnaire (OBVQ) was used to measure cyberbullying suffered by adolescents in the past six months.
3. Mental Health Scale: The Depression, Anxiety and Stress Scale for Adolescents (DASS-21) was used to measure the depression, anxiety and stress levels of the study participants.
4. Parental Attachment Scale: The Parental Attachment Scale (IPPA-P) was used.
5. Peer Attachment Scale: The Peer Attachment Scale (IPPA-Peer) was used.
In the process of questionnaire preparation, special attention was paid to the reliability and validity test of the scales, and relevant psychologists were invited to review the scales to ensure the applicability and scientificity of the scales[19]. At the same time, reactive questions were set in the questionnaire to exclude perfunctory responses from the subjects and to improve the authenticity of the data.

3.3 Data Collection and Processing

The data collection was carried out in a combination of online and offline methods. Online, electronic questionnaires were distributed through the Questionnaire Star platform, and offline, students were organized to fill out paper questionnaires with the assistance of school psychologists[20]. The data collection period was from 10th September to 30th September 2024. After data collection was completed, data cleaning was first performed to eliminate invalid samples [21].Subsequently, data were entered, screened and statistically analyzed using SPSS 26.0. The main analysis methods included descriptive statistical analysis, correlation analysis, regression analysis, etc., to test the research hypotheses and reveal the relationship between variables.

4 RESEARCH RESULTS

4.1 Relationship between Cyberbullying Victimization and Adolescent Mental Health

The study found that the frequency of cyberbullying victimization among adolescents is significantly correlated with mental health issues. Specifically, the higher the frequency of cyberbullying victimization, the higher the levels of loneliness and depression among adolescents. The data showed that 36.5% of the participants had experienced cyberbullying at least once in the past six months, with verbal insults being the most common (22.8%). The current status of mental health showed that 15.2% of the participants scored at the critical level on depression, 18.4% showed a high degree of anxiety, and 21.6% scored high on loneliness. The correlation analysis showed that cyberbullying victimization is significantly positively correlated with depression, anxiety, and loneliness ($r=0.41$, $p<0.01$), indicating that cyberbullying has a significant negative impact on adolescents' mental health.

4.2 The Moderating Role of Parental Attachment and Peer Attachment

The study further explored the moderating role of parental and peer attachment in the relationship between cyberbullying and mental health. The results showed that parental attachment has a significant moderating effect, while the moderating effect of peer attachment was not significant. **Specifically**, adolescents with high levels of parental attachment showed lower levels of psychological distress when exposed to cyberbullying, while the impact of peer attachment was more complex. This indicates that parental attachment has a stronger protective effect on adolescents' mental health, while the impact of peer attachment may vary depending on the context.

5 DISCUSSION

5.1 Mechanisms of Cyberbullying's Impact on Adolescent Mental Health

Cyberbullying negatively impacts adolescents' mental health through multiple mechanisms. First, the anonymity and concealment of cyberbullying make it difficult for victims to obtain timely social support, thereby exacerbating psychological trauma. Second, cyberbullying leads to negative self-perceptions among adolescents, which in turn trigger depression and loneliness. Additionally, the persistence and wide dissemination of cyberbullying make it difficult for victims to escape, further increasing the psychological burden. Therefore, cyberbullying not only affects adolescents' immediate mental health but can also lead to long-term psychological trauma.

5.2 The Protective Role of Attachment and Its Implications

Attachment relationships play an important protective role in the relationship between cyberbullying and mental health. Parental attachment, by providing emotional support and a sense of security, helps adolescents cope with the psychological stress caused by cyberbullying. Research shows that adolescents with high levels of parental attachment exhibit lower levels of psychological distress when exposed to cyberbullying. This finding highlights the important role of the family in adolescents' mental health and suggests that families should strengthen parent-child interactions and establish secure attachment relationships. Additionally, schools and communities should provide support to help adolescents build positive peer relationships and enhance psychological resilience.

5.3 Limitations and Prospects of the Study

This study has some limitations. First, the sample is mainly concentrated in urban schools in Luzhou City, with fewer data from rural adolescents, affecting the representativeness of the results. Second, the study uses a cross-sectional design, making it difficult to determine causal relationships. Future research should expand the sample to include more rural areas and use longitudinal research designs to more accurately reveal the dynamic relationship between cyberbullying and mental health. Additionally, future studies should further explore the moderating mechanisms of attachment relationships, incorporating more mediating and control variables to refine the theoretical model.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions of the Study

This study reveals the significant negative impact of cyberbullying on adolescents' mental health and confirms the moderating role of parental attachment. The results show that the higher the frequency of cyberbullying victimization, the higher the levels of loneliness and depression among adolescents. At the same time, adolescents with high levels of parental attachment exhibit lower levels of psychological distress when exposed to cyberbullying. These findings provide a new perspective for understanding the psychological mechanisms of cyberbullying and offer theoretical support for prevention and intervention efforts.

6.2 Policy Recommendations

Based on the study results, it is recommended that education departments strengthen mental health education and improve adolescents' internet literacy and coping abilities. Schools should offer targeted mental health courses and provide psychological counseling services to help adolescents build positive attachment relationships. Families should enhance parent-child communication and establish secure attachment relationships to provide emotional support for adolescents. Additionally, the government should improve relevant laws and regulations, strengthen the supervision and punishment of cyberbullying, and create a healthy internet environment.

6.3 Directions for Future Research

Future research should further explore the moderating mechanisms of attachment relationships, incorporating more mediating and control variables to refine the theoretical model. At the same time, future studies should expand the sample to include more rural areas and use longitudinal research designs to more accurately reveal the dynamic relationship between cyberbullying and mental health. Additionally, research should focus on the various forms of cyberbullying and their different impacts on mental health to provide a basis for developing more effective intervention measures.

COMPETING INTERESTS

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