

Parental Health Literacy linked to Positive and Negative Emotions of Students with Addiction Online Games

Azra Rahmani ^{*1} , Ali HosseiniMehr ²

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Abstract

The present study aimed to investigate the relationship between parental health literacy and the positive and negative emotions of students diagnosed with online gaming addiction. This research was correlational in nature, descriptive in purpose, and applied in terms of its practical implications. The statistical population of the study consisted of all primary school students in Qazvin during the 1403–1404 academic year that had been identified as having an addiction to online games, based on parental reports and self-disclosure. Using a randomized cluster sampling method and applying Cochran's formula, 384 individuals were selected as the statistical sample. The data required for the study were collected using two instruments: the health literacy questionnaire developed by Waiting and colleagues (2014), and the standardized Positive and Negative Affect Schedule (PANAS) developed by Watson and Tellegen (1988). The research data were analyzed using Pearson correlation and regression analysis with the assistance of SPSS software. The findings indicated a significant relationship between the components of parental health literacy and the positive and negative emotional states of students with online gaming addiction.

Key Words: parental health literacy, positive and negative emotions, online gaming addiction

¹ - Department of Counseling, Qa. C. Islamic Azad University, Qazvin, Iran. * Corresponding Author: rahmani@iau.ac.ir

² - Department of Educational Sciences, Ta. C . Islamic Azad University, Takestan, Iran. HosseiniMehr@iau.ac.ir

Introduction

The development of awareness and information in the field of the prevention of all types of risky behaviors is essential and important during the most sensitive and significant period of life, from birth to adolescence, so that children in the developmental stages of pre-primary and primary school years are at higher risk of developing digestive diseases, unintentional injuries, and psychosocial complications. Children in their early school years are more likely than others to experience eating disorders, physical accidents, behavioral disturbances, and gastrointestinal illnesses. Given that parents are among the most influential factors in the health and well-being of children, their awareness regarding child care, as well as the prevention and treatment of diseases, is of utmost importance and necessity (Haidari Shams et al., 2019).

On the other hand, emotions represent one of the most fundamental concerns in the social, economic, and political sciences, where material parameters such as economic development are examined alongside non-material parameters such as academic quality of life, individual happiness, and even freedom and national unity. However, measuring quality of life within the domain of educational sciences holds particular importance and a distinguished place. Moreover, academic performance has always served as a reflection of students' academic abilities to enter the world of work and pursue higher levels of education, and its significance and impact on promoting productivity and enhancing the effectiveness of the educational system have consistently been acknowledged by teachers, parents, and educational policymakers (Zandi et al., 2019).

Parents have a significant impact on children's behavior and overall well-being and are responsible for their care. Parental health literacy skills are associated with health-related behaviors that directly affect the mental and physical health of children. On the other hand, addiction and dependence on video games represent one of the most critical concerns related to digital media, as video games are believed to possess addictive potential. Among the most important issues surrounding video games is the concern regarding violence, characterized by the aggressive nature of many game titles. In addition to concerns about the psychological effects of these games, growing public apprehension about the effects of media violence persists. It is also a fact that playing computer games is an interactive activity, and as a result, it can engage individuals to a greater extent from a psychological perspective. Issues such as the social displacement effect of computer games and the resulting loneliness are among the most important and alarming consequences, as these games may replace real-life social interactions. Furthermore, the entertaining nature of these games may negatively impact other essential activities, such as studying, academic performance, and the formation of interpersonal relationships (Alipour et al., 2014).

The habit of online gaming has recently emerged as one of the most prevalent psychological issues associated with video game use. As awareness about the effects of online gaming habits has increased, examining the nature and reasons behind individuals' intense involvement with these games has

become a significant concern. The American Psychiatric Association has identified online gaming addiction as a disorder that warrants further scientific investigation and considers it a serious disruption requiring in-depth research (Anwar et al., 2021). Individuals accustomed to online gaming often live with inner conflict and psychological tension. These individuals frequently attempt to escape from their problems instead of confronting them and seek a calm and conflict-free environment. When these individuals enter online gaming environments and find themselves capable of easily communicating with users around the world, it becomes evident that they prefer such connections over interacting with people in real-life settings. In fact, with the advancement of online gaming, the level of real-world communication has decreased, leading individuals to retreat into online spaces in order to avoid facing the challenges of their real lives, thereby creating a psychological distance (Inanlu et al., 1401), which in turn results in the experience of both positive and negative emotions.

Emotion is one of the dimensions of human behavior that plays a crucial role in human life, and without it, life becomes dull and devoid of meaning. It is through emotional experiences that individuals perceive the world as full of meaning and depth. Emotions constitute a vital component of the vibrancy and vitality of the human personality. The characteristics and developmental aspects of emotions, as well as the ability to emotionally connect, comprehend, and interpret others' emotional states, play a major role in personality development, moral transformation, social relationships, identity formation, and self-concept. Negative emotion refers to the degree of dissatisfaction and psychological discomfort. It encompasses a general state of inner hopelessness and a lack of engagement in pleasurable activities, reflected in emotional states such as anger, sadness, hatred, humiliation, guilt, fear, and resentment. On the other hand, positive emotion is characterized by energetic engagement, high levels of focus, and a sense of enjoyment in undertaking tasks (Sadri et al., 1400).

The ability to differentiate between positive and negative emotions helps individuals understand the emotional consequences of the events they encounter. The intensity of these emotional states is expected to be higher in students who engage excessively in online gaming. Thus, it is necessary to seek ways to increase positive emotions and reduce negative ones, as students at a young age are in the critical phase of identity and personality formation, and neglecting their emotional well-being over time can lead to serious harm (Salmi et al., 2018), which manifests both during their academic years and in their personal lives.

In this context, over the past decades, health literacy has increasingly attracted the attention of researchers (Mousavi et al., 2020). With a deeper understanding of health literacy in scientific communities, it has gradually been revealed that inadequate health literacy can have severe and sometimes irreversible consequences for both individuals and society. Low levels of health literacy are associated with a wide range of adverse health outcomes, including higher mortality rates, increased hospitalization, and poor management of chronic illnesses (Nowruz and Rezaei, 2017). Research in the area of health literacy has primarily focused on its relationship with demographic variables

and medical conditions; however, there is now an evident need to explore psychological factors and individual traits, as they are also influential in improving quality of life, preventing illness, promoting health, and preserving or enhancing life satisfaction across the lifespan (Youssef et al., 1400).

The results of the main hypothesis showed that group educational games based on a constructivist learning environment have a positive and significant effect on positive self-concept and cooperative learning in second-year elementary school students in the Do Sari district. Also, the findings of the first sub-hypothesis showed that group educational games based on a constructivist learning environment have a positive and significant effect on positive self-concept in second-year elementary school students in the Do Sari district, and the findings of the second sub-hypothesis showed that group educational games based on a constructivist learning environment have a positive and significant effect on cooperative learning in second-year elementary school students in the Do Sari district (Rasouli et al., 2024) .

Health literacy is widely regarded as a determinant of health and has become a priority in public health policy, with low health literacy levels being linked to poor health outcomes, increased health disparities, and elevated healthcare costs (Krimi Mehin and Farah Bakhsh, 2011). Health systems, healthcare services, and professional health institutions must provide the necessary infrastructure to enhance health literacy at the population level. In this regard, health literacy is considered a value-based asset that fosters social capital development, addresses health disparities, and serves as a key element in population health (Haidari Shams et al., 2019).

Ozcan and Ozcan (2023) concluded in their research that internet gaming addiction leads to numerous health consequences, including physiological, psychological, and social problems. In addition to defining diagnostic criteria for gaming addiction, there is an urgent need for both national and international studies to inform protective and intervention strategies, particularly for at-risk youth. Mr. and colleagues (1401) also concluded that cognitive distortions, social anxiety, and emotional regulation difficulties directly affect online gaming addiction. Their findings also showed that cognitive distortion and social anxiety have indirect effects on gaming addiction. Therefore, research on online gaming addiction remains essential.

On the other hand, the significance of the present study lies in the fact that it introduces health literacy as a global issue of growing importance. The World Health Organization has declared that health literacy is one of the most influential determinants of health and has called on nations around the world to establish collaborative bodies consisting of all affected parties in order to monitor and coordinate strategic initiatives to enhance health literacy in diverse communities (World Health Organization, 2008). It also seems imperative that parents, now more than ever, should possess adequate knowledge about their own health and be able to manage health-related challenges, given their crucial responsibility in raising children. Therefore, this research seeks to provide parents with the necessary understanding of health literacy to assist their children in leading a fulfilling life by correctly defining and applying the

concept of health literacy, and by supporting them in the development of balanced emotional experiences.

Research question

What is the relationship between parental health literacy and the positive and negative emotions of students with online gaming addiction?

Methodology

The present research is descriptive and correlational in terms of its purpose and functionality. Regarding the research method, the statistical population consists of all primary school students in Qazvin during the academic year 1402–1403 who were identified as addicted to online games based on their parents' reports and their own self-expressions. Using a randomized class sampling method and according to Morgan's table, 384 individuals were selected as the statistical sample.

Regarding data collection methods, this study employed both library research—for gathering theoretical foundations and reviewing research literature, including library resources, articles, relevant books, and the World Wide Web (Internet)—and field research utilizing standardized questionnaires. The health literacy questionnaire, designed by Mantzeri and colleagues (2014), comprises 33 items and 5 components: use of information, evaluation and decision-making, access, reading skills, and understanding. The standardized questionnaire of positive and negative emotions, developed by Watson and Tellegen (1988), includes two dimensions—"negative emotion" and "positive emotion"—and consists of 20 items.

Research Findings

Hypothesis One: There is a relationship between parents' use of information and the positive and negative emotions of students with online gaming addiction. The following table presents the model adequacy indicators.

Table 1. Regression Model

Variable	Correlation coefficient	Determination coefficient	Adjusted determination coefficient
Use of information by parents& positive emotions	0.53	0.38	0.37
Use of information by parents& negative emotions	0.52	0.35	0.34

As shown in the table above, parents' use of information accounted for 37% of the variance in predicting positive emotions and 34% of the variance in predicting negative emotions, indicating the adequacy of the model.

Table 2. calculation of regression after application of information by parents health literacy and positive and negative emotions

Model	Path coefficient	T Orders	sig
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Use of information by parents& positive emotions	0.33	4.39	0.001
Use of information by parents& negative emotions	-0.29	4.08	0.005

The Table 2 shows that the path coefficient between the dimension of information use by parents and positive emotions is significant, as it exceeds or approaches the threshold value of 0.3. Additionally, the t-statistics for these relationships should exceed 1.96 to be considered statistically significant. Specifically, the relationship between parents' use of information and positive emotions has a path coefficient of 0.33 and a t-statistic of 4.39, both of which meet the acceptable criteria. Similarly, the relationship between parents' use of information and negative emotions has a path coefficient of -0.29 and a t-statistic of 4.08, which are also within acceptable limits.

Hypothesis Two: There is a relationship between parental evaluation and decision-making and the positive and negative emotions of students with online gaming addiction.

Table 3. Regression Model

Variable	Correlation coefficient	Determination coefficient	Adjusted determination coefficient
Evaluation and decision-making of parents& positive emotions	0.59	0.42	0.41
Evaluation and decision-making of parents & negative emotions	0.49	0.31	0.31

The correlation coefficients between the parental evaluation and decision-making dimension and the positive and negative emotions indicate that parental evaluation and decision-making account for 41% of the variance in predicting positive emotions and 31% of the variance in predicting negative emotions, thereby demonstrating the adequacy of the model.

Table 4. Calculation of regression after application of information by parents' health literacy and positive and negative emotions

Model	Path coefficient	T Orders	sig
Evaluation and decision-making of parents & positive emotions	0.35	4.63	0.000
Evaluation and decision-making of parents & negative emotions	-0.31	4.19	0.001

Table 4 shows that the path coefficient between parental assessment and decision-making and positive emotions is 0.35, with a corresponding t-statistic of 4.63. Additionally, the path coefficient between parental assessment and decision-making and negative emotions is -0.31, with a t-statistic of 4.19; both values are within acceptable ranges.

Hypothesis Three: Parental access to information is associated with the positive and negative emotions of students with online gaming addiction.

Table 5. Regression Model

Variable	Correlation coefficient	Determination coefficient	Adjusted determination coefficient
Parental access to information & positive emotions	0.61	0.44	0.43
Parental access to information & negative emotions	0.50	0.33	0.32

As shown in the table above, parents have access to information with %43 of the ability to predict positive emotions with %32 of the ability to predict negative emotions, which indicates the adequacy of the model.

Table 6. calculation of regression Parental access to information and positive and negative emotions

Model	Path coefficient	T Orders	sig
Parental access to information & positive emotions	0.41	4.97	0.000
Parental access to information & negative emotions	-0.32	4.27	0.001

The path coefficient of the relationship between parental access to information with positive emotions, 0.41 and T statistics of this relationship is also 4.97 as well as the path coefficient of the relationship between parental access to information with negative emotions, -0.32 and T statistics of this relationship is also 4.27, which is acceptable.

Hypothesis four: there is a relationship between parental reading skills and the positive and negative emotions of students with online gaming addiction.

Table 7. regression model

Variable	Correlation coefficient	Determination coefficient	Adjusted determination coefficient
parental reading skills & positive emotions	0.63	0.46	0.47
parental reading skills & negative emotions	0.51	0.34	0.33

The Table 7 shows that parental reading skills with 47% had the ability to predict positive emotions and with 33% had the ability to predict negative emotions, which indicates the adequacy of the model.

Table 8. calculation of regression parental reading skills and positive and negative emotions

Model	Path coefficient	T Orders	sig
parental reading skills & positive emotions	0.43	5.17	0.000
parental reading skills & negative emotions	-0.31	4.21	0.001

The results of the path coefficient indicate that the relationship between parental reading skills and positive emotions is 0.43, with a corresponding t-statistic of

5.17. Similarly, the relationship between parental reading skills and negative emotions is -0.31, with a t-statistic of 4.21; both are within acceptable limits.

Hypothesis Five: There is a relationship between parental reading skills and the positive and negative emotions of students with online gaming addiction.

Table 9. Regression Model

Variable	Correlation coefficient	Determination coefficient	Adjusted determination coefficient
Understanding parents & positive emotions	0.57	0.38	0.39
Understanding parents & negative emotions	0.31	0.17	0.16

The Table 9 shows that parental understanding accounts for 39% of the variance in predicting positive emotions and 16% of the variance in predicting negative emotions, indicating the adequacy of the model

Table 10. Calculation of regression Understanding parents and positive and negative emotions

Model	Path coefficient	T Orders	sig
Understanding parents & positive emotions	0.36	4.74	0.000
Understanding parents & negative emotions	-0.28	3.99	0.006

The path coefficient between the variables indicates that the relationship between parental understanding and positive emotions is 0.36, with a corresponding t-statistic of 4.74. Similarly, the relationship between parental understanding and negative emotions is -0.28, with a t-statistic of 3.99; both values are within acceptable ranges.

Main Hypothesis: There is a correlation between parental health literacy and the positive and negative emotions of students with online gaming addiction.

Table 11. Pearson correlation coefficient

Variable		positive emotions	negative emotions
	r	0.53	-0.44
Parental health literacy	sig	0.001	0.009
	N	384	384

The results of the Pearson correlation coefficient test indicate that the relationship between parental health literacy and positive emotions is 0.53 at a significance level of 0.001. Therefore, with 99% confidence, it can be concluded that there is a statistically significant positive relationship between parental health literacy and the positive emotions of students addicted to online games. Furthermore, the correlation between parental health literacy and negative emotions is -0.44 at a significance level of 0.009, which similarly indicates, with 99% confidence, a statistically significant negative relationship between parental health literacy and the negative emotions of students addicted to online games.

Discussion and conclusion

In explaining the results of the present study, it should be emphasized that health literacy is a crucial factor in parents' capacity to cultivate positive emotions for both themselves and their children. Low health literacy is more prevalent among older adults, racial and ethnic minorities, and socioeconomically disadvantaged groups. Parents encounter numerous challenges stemming from their multiple and simultaneous roles, including managing household responsibilities, raising and caring for children, and maintaining employment. Poor parental health literacy within vulnerable populations exacerbates these challenges and further complicates the situation. For families with limited health literacy, the complexity of health information creates substantial barriers to accessing child healthcare services, thereby posing significant threats to the health and well-being of their children.

Children constitute a unique demographic group with specific health concerns and needs. The United Nations, in the Convention on the Rights of the Child, identifies attention to children's health as one of the fundamental obligations of member states. Childhood behaviors and lifestyles exert a profound influence on the future burden of major diseases. If an adequate quality of life and basic needs are not ensured during childhood, it is unrealistic to expect a high quality of life during adulthood. Quality of life is a multidimensional construct that encompasses an optimal level of well-being across physical, cognitive, psychological, and social dimensions. One of the key reasons for the increasing focus on quality of life is the growing emphasis on quality rather than merely the quantity of life, coupled with the dramatic rise in healthcare costs. Therefore, promoting parental health literacy can have a positive impact on enhancing the quality of positive emotions experienced by children.

It should also be noted that several factors influence a child's attitudes toward themselves and their family members, including economic, social, and cultural determinants that govern family dynamics, all of which are directly associated with the family's literacy and educational level. Literate individuals tend to exhibit better economic well-being and decision-making abilities, alongside greater insight into themselves and the cultural and intellectual framework of society. From an economic perspective, literacy and education enable individuals to grow and develop creatively in harmony with both society and the nation. From a specialized standpoint, literacy contributes significantly to societal success. Adults are characterized as the fundamental factor of production, often referred to in economic terminology as the active population or workforce. According to available statistics, the expansion of literacy contributes to reduced population growth as well as facilitates economic and social development and the advancement of knowledge.

Illiteracy can have profound adverse effects on all aspects of human life, especially in areas such as health, economic growth, cultural development, child development and upbringing, childhood behavioral disorders, and employment

growth. Research has demonstrated that the greater the psychological trauma experienced by an individual, the lower their social status tends to be. Factors such as poverty, unemployment, family size, addiction, and divorce all contribute to a reduction in an individual's social and cultural standing and often result in psychological turmoil or damage. Typically, individuals residing in lower economic, social, and cultural strata exhibit significantly lower educational attainment compared to their peers, and educational levels in these families tend to decline sharply. Consequently, deviant developmental pathways, including the emergence of psychological disorders, suicide attempts, hospitalization, and dissociation from reality, are more common among lower socioeconomic classes.

The results of the present study are consistent with the findings reported by Khanjani et al. (2022) and Mohammadi et al. (2019)

Based on the results of the research hypotheses, it is recommended that efforts be made to provide appropriate information, regularly update content, introduce reliable sources and communication channels, and create suitable platforms that facilitate access to educational materials. Additionally, the development of targeted strategies for delivering knowledge and skills tailored to the health literacy levels of specific target groups, along with intersectoral cooperation to improve parental health literacy, should be prioritized. To promote literacy and knowledge in society, it is essential to manage content effectively to gain public trust. However, today, due to the diversity of information and contradictory messages in the field of health—including modern medicine, traditional medicine, and religious medicine—individuals face challenges in making informed decisions. Therefore, it is recommended to prevent parents from being misled by integrating and regulating content production. Digital health literacy, defined as the ability to search, locate, comprehend, and critically evaluate health information within digital spaces such as the internet, is increasingly crucial, as most individuals currently receive health-related information online. Consequently, the establishment of internet platforms free from unscientific content and rumors is of utmost importance

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